

**A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYURU**  
**DEPARTMENT OF TELUGU**  
**SEMESTER – I**  
**2018-19 CURRICULAR PLAN**

Subject Code: **TEL – 101C** Title: **GENERAL TELUGU**

Month	Unit No.	Topic to be covered
Jun – '18	I	గంగా శంతనుల కథ
Jul – '18	II	గంగా శంతనుల కథ, కన్యక
Aug – '18	III	త్రాపది పరిదేవనం, దేశ చరిత్రలు, సంస్కృత సందులు
Sep – '18	IV	చింతలతోపు సావుకూడు తెలుగు సందులు, సమాసాలు
Oct – '18	V	దోషసవరణలు, పున:శ్చరణ

**SEMESTER – III**

**2018-2019 CURRICULAR PLAN**

Subject Code: **TEL – 301C** Title: **GENERAL TELUGU**

Month	Unit No.	Topic to be covered
Jun – '18	I	1.వామనావతారము
Jul – '18	II	2.హరిజన శతకము 3.తెలుగు భాష
Aug – '18	III	4.శాలివాహన విజయము 5.మనిషి
Sep – '18	IV	6.వ్యక్తిత్వ వికాసము చందస్సు, అలంకారములు
Oct – '18	V	పున:శ్చరణ

**SEMESTER – II  
CURRICULAR PLAN**

Subject Code: **TEL - 201C**

Title: **GENERAL TELUGU**

Month	Unit No.	Topic to be covered
Nov – '18	I	నీతి పద్యాలు సాయుజ్యం
Dec- '18	II	ఆకలి ముసాఫరులు నమ్ముకున్న నేల
Jan –'19	III	సుభద్రా పరిణయం మేఘదూతము
Feb –'19	IV	బతుకాట నవల
MAR –'19	V	పున:శ్చరణ

**SEMESTER – IV  
2018 -2019 CURRICULAR PLAN**

Subject Code: **LEP - 401C**

Title: **LEADER SHIP EDUCATION**

Month	Unit No.	Topic to be covered
Nov – 17	I	వ్యవస్థ నాయకత్వం
Dec- 17	II	నిర్వహణ వ్యక్తిత్వ వికాసం, ప్రేరణ
Jan -18	III	సమాచార వ్యవస్థ వ్యక్తుల పరస్పర సంబంధాలు
Feb -18	IV	గ్రూపు నిర్ణయాకరణ సంఘర్షణ
Mar - 18	V	జట్టు, వివిధ రకాల జట్టు పున:శ్చరణ

**ACADEMIC YEAR 2018-2019**  
**SEMESTER – I**  
**CURRICULAR PLAN FOR ODD SEMESTER**

Subject Code: HIN 101C

Title: GENERAL HINDI

Month	Unit No.	Topic to be covered
June-'18	I IV	3. साहित्यकीमहत्ता 4. व्याकरण
July-'18	I II III	2.सच्चीवीरता 1.मुक्तिधन अनुवाद
Aug-'18	II	2.गूदडसाई 3.उसनेकहाथा
Sept-'18	I IV	मित्रता व्याकरण
Oct-'18	V	पत्रलेखन

**SEMESTER – III**  
**CURRICULAR PLAN FOR ODD SEMESTER**

Subject Code: HIN 301C

Title : GENERAL HINDI

Month	Unit No.	Topic to be covered
June-'18	I IV	साखी बालवर्णन मातृभूमि अनुवाद
July-'18	I II	तोडतीपत्थर हिन्दीसाहित्यकाइतिहास भक्तिकाल: ज्ञानज्ञानाश्रयीशाखा
Aug-'18	I III	मातृभाषा के प्रति सामान्य निबंध: सामाचारपत्र, कंप्यूटर, पर्यावरण और प्रदूषण
Sept-'18	II IV	भक्तिकाल: प्रेमाश्रयीशाखा अनुवाद
Oct-'18	III V	बेकारीकीसमस्या परिपत्र ज्ञापन राष्ट्रभाषाहिन्दी

**ACADEMIC YEAR 2018-2019**  
**SEMESTER -II**  
**CURRICULAR PLAN FOR EVEN SEMESTER**

**Subject Code: HIN 201C**

**Title: GENERAL HINDI**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Nov -'18	I II IV	संकृति और साहित्य का परस्पर संबंध जरिया संधिविच्छेद
Dec-'18	I II III	भारत एक है भूख हड़ताल अनुवाद
Jan-'19	I II III	एचआईवी /एड्स परमात्मा का कुत्ता अनुवाद
Feb-'19	IV V	वाक्य प्रयोग पत्रलेखन
Mar-'19		<b>Revision to all units</b>

# DEPARTMENT OF ENGLISH

ACADEMIC YEAR 2018-2019

SEMESTER – I

## CURRICULAR PLAN

Subject Code: ENG 101C

Title: GENERAL ENGLISH – I

Month	Unit No.	Topic to be covered
June-'18	II	The Road Not Taken
	V	Phonetic Transcription, Problematic Sounds in English, Pronunciation (Sound)
July-'18	I	The Language of African Literature
	IV	The Merchant of Venice
	V	Exercises in Articles and Prepositions
Aug-'18	I	The Knowledge Society
	II	Night of the Scorpion
	III	Two Children
	V	Exercises in Tenses
Sept-'18	III	What Men Live By
	V	Vocabulary(spelling), Sense (meaning)and Syntax
Oct-'18	V	Exercises in Tenses
		Revision

## SEMESTER – III

## CURRICULAR PLAN

Subject Code: ENG 301C

Title : GENERAL ENGLISH – II

Month	Unit No.	Topic to be covered
June-'18	I	Shyness My Shield
	II	Once Upon A Time
	V	Expansion of an idea/a saying/a proverb
July-'18	I	Why People Really Love Technology
	II	The Solitary Reaper
	V	JAM Sessions, Information Transfer
Aug-'18	III	The Interpreter of Maladies
	V	Note Taking. Brain Storming the topic through Diagram Note Making,
Sept-'18	III	The Beloved Charioteer
	IV	Kanyasulkam
	V	Reporting for the Media
Oct-'18	V	Writing for the Media
		Describing a Picture Revision

## SEMESTER – III

## CURRICULAR PLAN

Subject Code: CSS 301C

Title : COMMUNICATION AND SOFT SKILLS – II

Month	Unit No.	Topic to be covered
June-'18	I	Pronunciation – 1 : The Sounds of English
	II	Pronunciation – 2 : Word Accent
July-'18	II	Pronunciation - 2 : Intonation
	III	Speaking Skills – 1: Conversation Skills Interview Skills Presentation Skills Public Speaking
		Speaking Skills – 2 : Role Play Debate Group Discussion
		Writing Skills : Spelling Punctuation Report Writing
Oct-'18		Revision

**ACADEMIC YEAR 2018-2019**  
**SEMESTER -II**  
**CURRICULAR PLAN**  
**Title: GENERAL ENGLISH – I**

**Subject Code: ENG 201C**

Month	Unit No.	Topic to be covered
Nov -'18	I	My Struggle for an Education
	II	Ode to Autumn
	III	The Boy Who Broke the Bank
	IV	Question Tags
Dec-'18	I	The Scientific Point of View
	II	I am Not That Woman
	IV	The Proposal
	V	Transformation of Sentences – Voice, Speech, Degrees of Comparison
Jan-'19	I	Pride, awkwardness and a dangerous accident in Chalisgaon (An Excerpt from his Autobiographical life story 'Waiting for a Visa')
	III	Half A Rupee Worth
	V	Transformation of Sentences – Simple, Compound & Complex, Dialogue Practice(oral), Listening Comprehension
	V	
Feb-'19	V	Guided Composition
	V	Dialogue Writing
	V	Reading Comprehension
Mar-'19	Revision to all units	

**Subject Code: CSS-201C**

**TITLE : COMMUNICATION AND SOFT SKILLS - I**

Month	Unit No.	Topic to be covered
Nov -'18	I	Vocabulary Building – Prefixes & Suffixes, One-Word Substitutes, Synonyms & Antonyms
	IV	The Importance of Listening
Dec-'18	I	Conversion, Compounding, Words often confused
	II	Subject-Verb Agreement
	III	Meanings of Modals
	IV	Types of Listening, Barriers to Effective Listening
Jan-'19	I	Analogy, Phrasal Verbs
	III	Common Errors
	V	Reading Skills - Skimming & Scanning
Feb-'19	IV	Strategies for Effective Listening
	V	Intensive Reading & Extensive Reading, Comprehension (Reading)
Mar-'19	Revision to all units	

**Subject Code: CSS 401C**

**Title : COMMUNICATION AND SOFT SKILLS – III**

Month	Unit No.	Topic to be covered
Nov -'18	I	Soft Skills – Positive Attitude, Body Language
	IV	Letter Writing
	V	Resume & Curriculum Vitae
Dec-'18	I	Emotional Intelligence, SWOT/C Analysis
	II	Paragraph Writing – Paragraph Structure, Development of Ideas, Matching Para Jumbles
Jan-'19	I	Emotional Intelligence, Netiquette
	III	Paraphrasing – Elements of Effective Paraphrasing, Techniques for Paraphrasing
Feb-'19	III	Summarizing – What makes a good summary? Stages of Summarizing
	IV	E-Correspondence Dialogue Writing
Mar-'19	Revision to all units	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**  
**DEPARTMENT OF HISTORY**  
**SEMESTER – I**

**CURRICULAR PLAN**

Subject Code: HIST11B Title: Ancient Indian history and culture (From Indus valley Civil  
to 13 century(A.D))

Month	Unit No.	Topic to be covered	Remarks
<b>JUN-18</b>	<b>I</b>	Ancient Indian Civilization (from Circa 3000 BC to 6 <sup>th</sup> BC):	
<b>JULY-18</b>	<b>II</b>	Ancient Indian History & Culture (6 <sup>th</sup> Century BC to 2 <sup>nd</sup> Century AD):	
<b>AUG-2018</b>	<b>III</b>	History & Culture of South India (2nd Century BC to 8 <sup>th</sup> Century AD):	
<b>SEP-2018</b>	<b>IV</b>	India from 3 <sup>rd</sup> century AD to 8 <sup>th</sup> century AD:	
<b>OCT-2018</b>	<b>V</b>	History and Culture of South India (9 <sup>th</sup> century AD to 13 <sup>th</sup> century AD):	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**  
**DEPARTMENT OF HISTORY**  
**SEMESTER – III**  
**CURRICULAR PLAN**

Subject Code: HIS301C Title : MODERN INDIAN HISTORY & CULTURE (1764-1947 A. D)

Month	Unit No.	Topic to be covered	Remarks
<b>JUN-18</b>	<b>I</b>	Policies of Expansion	
<b>JULY-18</b>	<b>II</b>	Social, Religious & Self-Respect Movements	
<b>AUG-2018</b>	<b>III</b>	Causes for the growth of Nationalism	
<b>SEP-2018</b>	<b>IV</b>	Freedom Struggle from 1920 to 1947:	
<b>OCT-2018</b>	<b>V</b>	Muslim League & the Growth of Communalism	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU  
DEPARTMENT OF HISTORY**

**SEMESTER – V**

**CURRICULAR PLAN**

Subject Code: HIS501C Titles: Age of Rationalism and Humanism –The World Between  
15th& 18th Century

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>JUN-18</b>	<b>I</b>	Feudalism -Geographical Discoveries:	
<b>JULY-18</b>	<b>II</b>	The Renaissance Movement	
<b>AUG-2018</b>	<b>III</b>	Emergence of Nation States	
<b>SEP-2018</b>	<b>IV</b>	Age of Revolutions AMERICA Revolution	
<b>OCT-2018</b>	<b>V</b>	Age of Revolutions: The French Revolution	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU  
DEPARTMENT OF HISTORY**

**SEMESTER – V**

**CURRICULAR PLAN**

Subject Code: HIS502C Titles: History & Culture of Andhra Desa (from 12th to 19th  
Century A.D)

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>JUN-18</b>	<b>I</b>	Andhra during 12th& 13th Centuries A.D	
<b>JULY-18</b>	<b>II</b>	Andhra between 14th & 16th Centuries A.D	
<b>AUG-2018</b>	<b>III</b>	Andhra through 16th& 17th Centuries A.D	
<b>SEP-2018</b>	<b>IV</b>	The 18th& 19th Centuries in Andhra	
<b>OCT-2018</b>	<b>V</b>	Impact of Company Rule on Andhra	



**DEPARTMENT OF HISTORY**

**SEMESTER – II  
CURRICULAR PLAN**

Subject Code: HIST21 Title: Medieval Indian history and Culture(1206 A.D to 1764 A.D)

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>NOV-18</b>	<b>I</b>	Impact of Turkish Invasions	
<b>DEC-18</b>	<b>II</b>	Impact of Islam on Indian Society and Culture	
<b>JAN-2019</b>	<b>III</b>	Emergence of Mughal Empire	
<b>FEB-2019</b>	<b>IV</b>	Administration, Economy, Society	
<b>MAR-2019</b>	<b>V</b>	India under Colonial Hegemony	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE,  
VUYYURU**

**DEPARTMENT OF HISTORY**

**SEMESTER – IV  
CURRICULAR PLAN**

Subject Code: HIST401 Title: HISTORY & CULTURE OF ANDHRA (FROM 1512 TO 1956 AD)

<b>MONTH</b>	<b>UNIT NO.</b>	<b>TOPIC TO BE COVERED</b>	<b>REMARKS</b>
<b>NOV-18</b>	<b>I</b>	1.1-Andhra through 16th& 19th Centuries AD:	
<b>DEC-18</b>	<b>II</b>	Andhra under British rule: Administration	
<b>JAN-2019</b>	<b>III IV</b>	Social Reform & New Literary Movements Freedom Movement in Andhra (1885-1947):	
<b>FEB-2019</b>	<b>V</b>	Movement for separate Andhra State	

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VUYYURU  
DEPARTMENT OF HISTORY  
SEMESTER – IV  
CURRICULAR PLAN**

**Subject Code: HIS401C Title: HISTORY OF MODERN WORLD (From 15th Cent. AD to 1945 AD)**

<b>MONTH</b>	<b>UNIT NO.</b>	<b>TOPIC TO BE COVERED</b>	<b>REMARKS</b>
<b>NOV-18</b>	<b>I</b>	Transformation from Medieval to Modern Era	
<b>DEC-18</b>	<b>II</b>	American Revolution (1776); French Revolution (1789)	
<b>JAN-2019</b>	<b>III IV</b>	Unification of Italy; Unification of Germany Communist Revolution in Russia	
<b>FEB-2019</b>	<b>V</b>	World War II: Causes Fascism & Nazism	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE,  
VUYYURU  
DEPARTMENT OF HISTORY  
SEMESTER – VI  
CURRICULAR PLAN**

**Subject Code: HIS601GE Title: History of Modern Europe (from 19th Century to 1945 A.D)**

<b>MONTH</b>	<b>UNIT NO.</b>	<b>TOPIC TO BE COVERED</b>	<b>REMARKS</b>
<b>NOV-18</b>	<b>I</b>	Industrial Revolution: Origin, Nature and Impact	
<b>DEC-18</b>	<b>II</b>	Unification Movements in Italy & Germany and their Impact.	
<b>JAN-2019</b>	<b>III IV</b>	Communist Revolution in Russia World War I:	
<b>FEB-2019</b>	<b>V</b>	World War II	

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE(AUTONOMOUS)  
VUYYURU - 521165 - (2018- 2019)**

**SEMESTER - I  
DSC 3A -Business Economics-I**

**IB.COM GENERAL**

**No. of Hours per week: 5**

**No. of Credits:**

**4Max.Marks:100**

<b>Unit</b>	<b>Learning Units</b>	<b>MONTHS</b>
<b>I</b>	<p><b>Introduction</b></p> <p>Meaning and Definitions of Business Economics - Nature and scope of Business Economics- Micro and Macro Economics and their differences.</p>	<b>JUN-18</b>
<b>II</b>	<p><b>Demand Analysis</b></p> <p>Meaning and Definition of Demand - Determinants of Demand -- Demand function – Law of demand- Demand Curve - Exceptions to Law of Demand.</p>	<b>JULY-18</b>
<b>III</b>	<p><b>Elasticity of Demand</b></p> <p>Meaning and Definition of Elasticity of Demand – Types of Elasticity of Demand – Measurements of Price elasticity of demand – Total outlay Method – Point Method – Arc Method.</p>	<b>AUG-2018</b>
<b>IV</b>	<p><b>Cost and Revenue Analysis</b></p> <p>Classification of Costs – Total - Average – Marginal and Cost function – Long-run – Short-run – Total Revenue - Average revenue – Marginal Revenue.</p>	<b>SEP-2018</b>
<b>V</b>	<p><b>Break-Even Analysis</b></p> <p>Type of Costs – Fixed Cost – Semi-variable Cost – Variable Cost– Cost behaviour - Breakeven Analysis - Its Uses and limitations.</p>	<b>OCT-2018</b>

**A.G&S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE(AUTONOMOUS)  
VUYYURU – 521165**

**I BA PROGRAMME - ECONOMICS SYLLABUS FOR THE YEAR  
(CBCS PATTERN)**

**FIRST YEAR BA – FIRST SEMESTER (CORE PAPER)**

**TITLE: MICRO ECONOMICS -1**

No. of hours per week: 5

Credits: 4

<b>Unit</b>	<b>Learning Units</b>	<b>MONTHS</b>
I	Nature, Definition and Scope of economics –Wealth, welfare, Scarcity and modern definitions	<b>JUN-18</b>
II	Methodology in economics-Micro and Macro, Static and Dynamic analysis; Normative and Positive science, Inductive and Deductive methods ; Partial and General Equilibrium	<b>JULY-18</b>
III	Utility analysis :- Cardinal approach –The Law of Diminishing marginal utility-the Law of Equi-marginal utility-concept of consumer's surplus	<b>AUG-2018</b>
IV	Demand analysis – Law of Demand – Elasticity of Demand – Measurement of elasticity of demand-Price, Income and Cross elasticities of Demand	<b>SEP-2018</b>
V	Ordinal approaches; Indifference curve analysis – Properties of Indifference curves – Price or Budget line - Equilibrium of the consumer with the help of Indifferencecurves-samuelson'srevealedpreference theory.	<b>OCT-2018</b>

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS), VUYYURU**

**B. A. ECONOMICS**

**II Year B. A. Programme (UG) Courses – Under**

**CBCS Semester – III**

**Paper – III (Core Paper) (5Hours)**

**Macro Economics - National Income, Employment and Money**

<b>Unit</b>	<b>Learning Units</b>	<b>MONTHS</b>
I	Meaning, definition of Macro Economics - Importance of Macro Economics- Difference  between Micro and Macro Economics - Paradox of Macro Economics - Limitations	<b>JUN-18</b>
II	National Income - Definitions, Concepts of National Income - Measurement of  National Income- Circular flow of Income in Two, Three and Four Sector  Economy.	<b>JULY-18</b>
III	Classical theory of Employment - Say's Law of Markets.	<b>AUG-2018</b>
IV	Keynesian Theory of Employment - Consumption function – Investment Function -  Marginal Efficiency of Capital (MEC)- Concepts of multiplier and accelerator	<b>SEP-2018</b>
V	Meaning and Functions of Money - Classification of money - Gresham's Law - RBI  classification of Money. Theories of Money - Fisher's Quantity theory of Money  Cambridge approach (Marshall, Pigou, Robertson & Keynes).	<b>OCT-2018</b>

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS), VUYYURU**

**Final year BA Economics Syllabus Semester Paper – V**

**ECONOMIC DEVELOPMENT AND INDIAN ECONOMY – Semester –V**

**Weekly 5 Hours,**

**Credits - 4**

**PAPER CODE: ECO-501**

<b>Unit</b>	<b>Learning Units</b>	<b>MONTHS</b>
I	Concept of Economic Growth - Distinction between economic growth and development - Measurement of economic development -Theories of Economic Growth: Adam Smith, Rostow, Karl Marx and Harrod&Domar Models.	<b>JUN-18</b>
II	Sustainable development - Balanced and unbalanced growth-choice of techniques Labour intensive and capital intensive methods.	<b>JULY-18</b>
III	. Basic features of the Indian Economy - Natural Resources - Important Demographic features- Concept of Population Dividend - Population Policy.	<b>AUG-2018</b>
IV	National Income in India - trends and composition-poverty, inequalities and Unemployment - Measures taken by the Government. - MGNREGS	<b>SEP-2018</b>
V	Economic reforms - liberalization, privatization and globalisation - concept of inclusive growth.	<b>OCT-2018</b>

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE  
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**Final year BA Economics Syllabus Paper – V**

**INDIAN AND ANDHRAPRADESH ECONOMY – Semester –V**

**Weekly 5 Hours,**

**Paper Code : ECO-502**

**Credits - 4**

**Semester-5**

**Indian and Andhra Pradesh Economy**

**Syllabus**

<b>Unit</b>	<b>Learning Units</b>	<b>MONTHS</b>
I	Indian Agriculture - Importance of Agriculture in India - Agrarian structure and relations- Factors determining Productivity- Agricultural Infrastructure - Rural credit - Micro Finance - Self Help Groups (SHGs) - Agricultural Price policy- concept of Crop Insurance - Food Security.	<b>JUN-18</b>
II	Structure and growth of Indian Industry - Industrial policies of 1956 &1991 Meaning of Micro small and Medium Enterprises (MSMEs)- Problems and Prospects of small scale Industries in India.	<b>JULY-18</b>
III	Disinvestment in India - FEMA - Foreign direct investment - Services Sector in India – Reforms in Banking and Insurance -, IT, Education and Health.	<b>AUG-2018</b>
IV	Planning in India Economy - Objectives of Five year plans - Review of Five year Plans - Current Five year plan- NITI Aayog	<b>SEP-2018</b>
V	Andhra Pradesh Economy - Population - GSDP - Sector Contribution and trends - IT – Small Scale Industry - SEZs.	<b>OCT-2018</b>

EVEN

Accredited with “A” Grade by NAAC, Bengaluru

I Year B. A. Programme (UG) Courses – Under CBCS

Semester – II. HOURS: 5 CREDITS: 4

Paper – II (Core Paper) **Micro Economics - Production and Price Theory**

Unit	Learning Units	MONTHS
I	Production function-Concept of homogeneous production function-Cobb- Douglas Production function- Law of variable proportions-Law of Returns to Scale - Different Concepts of Costs – Explicit & Implicit, Opportunity, Total – fixed and Variable Costs, Marginal & Average Costs & its Relationship. Concept of Revenue – Total, Marginal & Average Revenue and Break – Even Point	NOV-18
II	Analyse different types of Market structures - Perfect Competition - Price determination and equilibrium of firm and industry under perfect competition - Monopoly - Price determination - Price discrimination.	DEC-18
III	Monopolistic competition - price determination - Oligopoly - Kinked demand curve approach.	JAN-19
IV	Marginal Productivity theory of distribution - Theories of wage determination Subsistence theory of wages, Standard of living theory of wages, Modern theory of wages Wages and collective bargaining - concept of minimum wage.	FEB-19
V	Theory of Rent: Ricardian theory of rent - Quasi rent concept of Alfred Marshall. Theories of Interest - Classical, Neo-classical and Keynes Liquidity Preference theory - Profit - dynamic, innovations, Risk and Uncertainty theories	MAR-19



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( AUTONOMOUS), VUYYURU – 521165

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IB.COM GENERAL----- SEMESTER - II

DSC 3 B - Business Economics –II----- (CBE 203G)

No. of Hours per week: 5

Max.Marks:100

No. of Credits: 4

Unit	Learning Units	MONTHS
I	<u>Production and Costs</u> : Techniques of Maximization of output, Minimization of costs and Maximization of profit - Scale of production - Economies and Dis-economies of Scale - Costs of Production – Cobb-Douglas Production Function.	NOV-18
II	<u>Market Structure-I</u> : Concept of Market - Market structure - Characteristics - Perfect competition -characteristics equilibrium price - profit maximizing output in the short and long run Monopoly-characteristics - Profit maximizing out-put in the short and long run - Defects of Monopoly – Distinction between Perfect competition and Monopoly.	DEC-18
III	<u>Market Structure-II</u> : Monopolistic Competition - Characteristics – Product differentiation - Profit maximization - Price and output in the short and long - run – Oligopoly - characteristics - Price rigidity - Kinked Demand Curve - Distribution - Concepts - Marginal Productivity - Theory of Distribution.	JAN-19
IV	<u>National Income And Economic Systems</u> : National Income - Definition Measurement - GDP - Meaning Fiscal deficit - Economic systems - Socialism - Mixed Economic System - Free Market economy	FEB-19
V	<u>Structural Reforms</u> : Concepts of Economic liberalization, Privatization, Globalization - WTO Objectives Agreements - Functions - Trade cycles - Meaning - Phases - Benefits of International Trade - Balance of Trade and Balance of payments.	MAR-19

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**

**( AUTONOMOUS), VUYURU – 521165 -**

**Accredited with “A” Grade by NAAC, Bengaluru**

**DSC 2 B -Business Economics**

**I B.Com (Computers) ---- II SEMESTER (2018 – 2019)**

**w.e.f. 2015-16 (Revised in April, 2016)**

**No. of Hours per week: 5**

**Max.Marks:100**

**No. of Credits: 4**

<b>Unit</b>	<b>Learning Units</b>	<b>MONTHS</b>
<b>I</b>	Meaning and Definitions of Business Economics - Nature and scope of Business Economics- Micro and Macro Economics and their Interface.	NOV-18
<b>II</b>	<b>Demand Analysis:</b> Definition - Determinants of Demand -- Demand function – Law of demand- Demand Curve - Exceptions to Law of Demand - Elasticity of Demand – Types of Elasticity of Demand – Measurements of Price elasticity of Demand :	DEC-18
<b>III</b>	<b>Demand Analysis:</b> Definition - Determinants of Demand -- Demand function – Law of demand- Demand Curve - Exceptions to Law of Demand - Elasticity of Demand – Types of Elasticity of Demand – Measurements of Price elasticity of Demand :	JAN-19
<b>IV</b>	<b>Market Structure:</b> Concept of Market - Market structure - Perfect competition - characteristics - equilibrium price - Monopoly- characteristics - Defects of Monopoly – Distinction between Perfect competition and Monopoly - Monopolistic Competition – Characteristics-Product differentiation - Oligopoly - characteristics - Price rigidity.	FEB-19
<b>V</b>	<b>National Income And Economic Systems:</b> National Income - Measurement - GDP -Growth Rates - Problems in Assessment - Economic Systems - Socialism - Mixed Economic System - Free Market Economy -	MAR-19

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**( AUTONOMOUS), VUYYURU – 521165 -**

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**B. A. ECONOMICS**

**II Year B. A. Programme (UG) Courses – Under CBCS**

**Semester – IV**

**Paper – IV (Core Paper)**

**Banking and International Trade**

<b>Unit</b>	<b>Learning Units</b>	<b>MONTHS</b>
I	Trade Cycles - meaning and definition - Phases of a Trade Cycle - Inflation - definition -types of inflation - causes and effects of inflation measures to control inflation.	NOV-18
II	Banking: Meaning and definition -Functions of Commercial Banks - Concept of Creditcreation-Functions of RBI - Recent developments in banking sectors.	DEC-18
III	Non-Bank Financial Institutions – Types of NBFIs - Factors contributing to the Growthf NBFIs --Money market – Defects of Indian money market	JAN-19
IV	Concepts of Shares-Debentures - Stock Market - Functions - Primary and Secondary Markets -SEBI - - Insurance - Life Insurance and General Insurance.	FEB-19
V	Macro Economic Policy - Fiscal, Monetary and Exchange rate policies  Objectives and Significance - Importance of International Trade - Regional and InternationalTrade – Defining Balance of Trade and Balance of Payment.	MAR-19

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE (AUTONOMOUS),**

**VUYYURU**

**B. A. ECONOMICS**

**III Year B. A. Programme (UG) Courses – Under CBCS**

**Semester – VI**

**Paper – VII-(A) (Elective Paper VII-(A))**

**AGRICULTURAL ECONOMICS**

<b>Unit</b>	<b>Learning Units</b>	<b>MONTHS</b>
I	Nature and Scope of Agricultural Economics. Factors affecting agricultural development: technological, institutional and general. Interdependence between agriculture and industry.	NOV-18
II	Concept of production function : input-output and product relationship in farm production.	DEC-18
III	Growth and productivity trends in Indian agriculture with special reference to Andhra Pradesh. Agrarian reforms and their role in economic development.	JAN-19
IV	Systems of farming, farm size and productivity relationship in Indian agriculture with special reference to Andhra Pradesh- New agriculture strategy and Green revolution :and its Impact	FEB-19
V	Emerging trends in production, processing, marketing and exports; policy controls and regulations relating to industrial sector with specific reference to agro-industries in agribusiness enterprises	MAR-19

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Krishna Dt., A.P. (An Autonomous College in the Jurisdiction of Krishana University)

**Semesterwise Academic Plan & Fulfillment Record**

NAME OF DEPARTMENT : POLITICAL SCIENCE

Academic Year : 2018-19

Name of lecturer :

Dr. G.Veeraraju

Paper Title :

Basic Concepts of Political Science

Semester: I  
Class : I B.A  
Paper Code : POL – 101C

Month	Planned (Unit No. & Chapter Title)	Fulfilled (Unit No. & Chapter Title)	Remarks
<b>Jun-17</b>	Unit-I - Nature scope and significance of Political science Unit-II- Social contract theories-Hobbs,lock and rousseau, evolution divine theories of origin of the state	Fullfilled	
<b>Jul-17</b>	Unit-III - Soverignty meaning ,definition,features,kinds and characters.Austrian Pluralistic theories	Fullfilled	
<b>Aug-17</b>	Unit-IV- Law ,Liberty,equality meaning definitions features,kinds,sources, of concepts	Fullfilled	
<b>Sep-17</b>	Unit-V - Rights and classification of rights, theories of rights ,leagal and natural rights.	Fullfilled	
<b>Oct-17</b>	Unit-V- Civil rights, Political rights fundamental rights	Fullfilled	

**Lecturer**

**HOD**

**Principal**

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(Autonomous) Vuyyuru - 521 165.**

Krishna Dt., A.P. (An Autonomous College in the Jurisdiction of Krishana University)

**Semesterwise Academic Plan & Fulfillment Record**

NAME OF THE DEPARTMENT: POLITICAL SCIENCE

Academic

Year :

2018 - '19

Name of

the

Dr.G.Veeraraju

Lecturer :

Paper

Title :

INDIAN CONSTITUTION

SEMESTER

: III

Class: II B.A

Paper Code: POL-301C

Month	Planned (Unit No. & Chapter Title)	Fulfilled (Unit No. & Chapter Title)	Remarks
<b>Jun-17</b>	Unit-I- constitutional assembly-composition Indian constitution features	Fullfilled	
<b>Jul-17</b>	Unit-II- Preamble fundamental rights ,Fundamental duties, Directive principles of state policy,differences between fundamental rights and DPSP	Fullfilled	
<b>Aug-17</b>	Unit-III- Union Executive- President election method , P.m powers and functions,Parliament powers and functions,Union council of ministers,Parliamentary commites	Fullfilled	
<b>Sep-17</b>	Unit-IV- Unitory and federal system , central and state relation Unit-V- Supreme court of India,powersfunctions,judicial review	Fullfilled	
<b>Oct-17</b>	Revision	Fullfilled	

**Lecturer**

**HOD**

**Principal**

**AG & SG Siddhartha Degree College of Arts & Science,  
(Autonomous) Vuyyuru - 521 165.**

Krishna Dt., A.P. (An Autonomous College in the Jurisdiction of Krishana University)

**Semesterwise Academic Plan & Fulfillment Record**

NAME OF THE DEPARTMENT: POLITICAL SCIENCE

Academic

Year :

2018 - '19

Name of

the

Dr.G.Veeraraju

Lecturer :

Paper

Title :

INDIAN POLITICAL THOUGHT

SEMESTER

V

Class: III B.A

Paper Code: POL-501C

Month	Planned (Unit No. & Chapter Title)	Fulfilled (Unit No. & Chapter Title)	Remarks
<b>Jun-17</b>	Unit-I- Manu varna system, Manu Dharma Veda -four vedas	Fullfilled	
<b>Jul-17</b>	Unit-II- koutilya theory of Saptanga,mandalikatheories,Koutilya political ideas of state kingship, Gandhi non-violence satyagrahatheroy of trusteeship	Fullfilled	
<b>Aug-17</b>	Unit-III- Joythiraophule social ideas,Nehru democratic socialism,Ambedkar social movements	Fullfilled	
<b>Sep-17</b>	Unit-IV- M.N.Roy radical humanism,Jayaprakashnarayanarevolution,sarvodaya	Fullfilled	
<b>Oct-17</b>	Revision	Fullied	

**Lecturer**

**HOD**

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(Autonomous) Vuyyuru - 521 165.**

Krishna Dt., A.P. (An Autonomous College in the Jurisdiction of Krishana University)

**Semesterwise Academic Plan & Fulfillment Record**

NAME OF THE DEPARTMENT: POLITICAL SCIENCE

Academic

Year :

2018 - '19

Name of

the

Dr.G.Veeraraju

Lecturer :

Paper

Title :

WESTERN POLITICAL THOUGHT

SEMESTER

V

Class: III B.A

Paper Code: POL-502C

Month	Planned (Unit No. & Chapter Title)	Fulfilled (Unit No. & Chapter Title)	Remarks
<b>Jun-17</b>	Unit-I- plato-Ideal state,theroy of justice,educationalsystem,philosphers of kings,communism	Fullfilled	
<b>Jul-17</b>	Unit-II- aristotle- ideal state,theroy of revolutions classification of governments,salves system	Fullfilled	
<b>Aug-17</b>	Unit-III-Machiavelli-Advice to the prince,politicalideas,hobbes,social contract theory , polictical ideas	Fullfilled	
<b>Sep-17</b>	Unit-III- John lock-social contract theory,political ideas , natural rights,rousseau,social contract theory general wing,popularsoveriginty	Fullfilled	
<b>Oct-17</b>	Unit-IV- Hegal civil society state karl marks theroy of communism	Fullfilled	

**Lecturer**

**HOD**

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**Semesterwise Academic Plan & Fulfillment Record**

NAME OF THE DEPARTMENT: POLITICAL SCIENCE

Academic

Year :

2018 - '19

Name of

the

Dr.G.Veeraraju

Lecturer :

Paper

Title :

CONCEPTS OF THEORIES AND INSTITUTIONS

SEMESTER

II

Class:

I B.A

Paper Code:

POL-  
201C

Month	Planned (Unit No. & Chapter Title)	Fulfilled (Unit No. & Chapter Title)	Remarks
Nov-17	Unit-I-Democracy forms,charactersticts , mertis&demertis of democracy Unit-II- Individualism,facism,marxism and gandhism,montesque's theory of seperation of powers	Fullfilled	
Dec-17	Unit-III- Powers and functions of legislature committee system	Fullfilled	
Jan-18	Unit-III- Presidential judiciary-Powers and functions	Fullfilled	
Feb-18	Unit-IV- Executive-types,powers and functions,judical review	Fullfilled	
Mar-18	Unit-V- Human rights,welfare state popular control	Fullied	

**Lecturer**

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(Autonomous) Vuyyuru - 521 165.**

Krishna Dt., A.P. (An Autonomous College in the Jurisdiction of Krishana University)

**Semesterwise Academic Plan & Fulfillment Record**

NAME OF THE DEPARTMENT: POLITICAL SCIENCE

Academic

Year :

2018 - '19

Name of

the

Dr.G.Veeraraju

Lecturer :

Paper

Title :

INDIAN POLITICAL PROCESS

SEMESTER

: IV

Class: II B.A

Paper Code: POL-401C

Month	Planned (Unit No. & Chapter Title)	Fulfilled (Unit No. & Chapter Title)	Remarks
<b>Nov-17</b>	Unit-I- Definition and role of political parties , characterstics of Indian political parties classification of Indian political parties	Fullfilled	
<b>Dec-17</b>	Unit-II- Election commision-structure , powers and functions, reforms	Fullfilled	
<b>Jan-18</b>	Unit-III- Indian national congress BJP,CPM(1), CPM, TDP , TRS, Akalidal, DMK, ADMK	Fullfilled	
<b>Feb-18</b>	Unit-IV- voting behaviour, caste, class & gender, religion politics	Fullfilled	
<b>Mar-18</b>	Unit-V- Coalition politics, national intergration, social movements	Fullied	

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**HOD**

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**Semesterwise Academic Plan & Fulfillment Record**

NAME OF THE DEPARTMENT: POLITICAL SCIENCE

Academic

Year :

2018 - '19

Name of

the

Dr.G.Veeraraju

Lecturer :

Paper

LOCAL SELF GOVERNMENTS IN ANDHRA  
PRADESH

Title :

SEMESTER

VI

:

Class:

III B.A

Paper Code:

POL-  
601GE

<b>Month</b>	<b>Planned (Unit No. &amp; Chapter Title)</b>	<b>Fulfilled (Unit No. &amp; Chapter Title)</b>	<b>Remarks</b>
<b>Nov-17</b>	Unit-I- 1. Court provisions of local self governments 2. Recommendations of Balwanth Roy and ashokmehtha committees	Fullfilled	
<b>Dec-17</b>	Unit-II- 1. 73rd constitution, Ammendment act 2. 74th constitution Ammendment act	Fullfilled	
<b>Jan-18</b>	Unit-III- 1. Gram panchayt structure and function 2. mandalparishad and jillaparishad	Fullfilled	
<b>Feb-18</b>	Unit-IV- 1. Nagar panchayats structure 2. Municipalities structure and functions	Fullfilled	
<b>Mar-18</b>	Unit-V- 1. Emerging pattrens of leadership 2. problems of authority	Fullied	

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**HOD**

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**Semesterwise Academic Plan & Fulfillment Record**

NAME OF THE DEPARTMENT: POLITICAL SCIENCE

Academic

Year :

2018 - '19

Name of

the

Dr.G.Veeraraju

Lecturer :

Paper

Title :

INTERNATIONAL RELATIONS

SEMESTER

:

VI

Class:

III B.A

Paper Code:

POL-602  
CE

Month	Planned (Unit No. & Chapter Title)	Fulfilled (Unit No. & Chapter Title)	Remarks
<b>Nov-17</b>	Unit-I- 1. Meaning, nature, scope of International relations 2. Balance of power, collectively national Interns, Dipolamacy	Fullfilled	
<b>Dec-17</b>	Unit-II- Idealism- woodrowwillson classical realism- Morgenthau-neo-realism-kenneth waltz	Fullfilled	
<b>Jan-18</b>	Unit-III- 1. causes of first world war 2. causes of second world war	Fullfilled	
<b>Feb-18</b>	Unit-IV- 1. critisim of first cold war 2. Rise and fall of détente 3. Origin and end of second world war	Fullfilled	
<b>Mar-18</b>	Unit-V- The role of UNO in international peace, problems of third world- New economic order	Fullied	

**Lecturer**

**HOD**

**Principal**

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Semesterwise Academic Plan & Fulfillment Record

NAME OF THE DEPARTMENT: POLITICAL SCIENCE

Academic

Year :

2018 - '19

Name of

the

Dr.G.Veeraraju

Lecturer :

Paper

Title :

INDIAN FOREIGN POLICY

SEMESTER

VI

Class: III B.A

Paper Code:

POL-603  
CE

Month	Planned (Unit No. & Chapter Title)	Fulfilled (Unit No. & Chapter Title)	Remarks
<b>Oct-15</b>	Unit-I- 1. Determinants of Indian Foreign policy 2. Change in Indian Foreign policy	Fullfilled	
<b>Nov-15</b>	Unit-II- 1. India's role in non-alignment 2. Non-Alignment in contemporary world 3. India's role in UNO Peace keeping	Fullfilled	
<b>Dec-15</b>	Unit-III- 1. Indo-US relations pre cold war 2. Indo-China relations pre cold war	Fullfilled	
<b>Jan-16</b>	Unit-IV- 1. Indo-Pak relations 2. India's role in SAARE	Fullfilled	
<b>Feb-16</b>	Revision	Fullied	

**Lecturer**

**HOD**

**Principal**

**TEACHING PLAN 2018-2019**

**ENVIRONMENTAL STUDIES COURSE CODE-ENS101**

**COURSE CODE: ENS 101**

**B.A,B.COM.,B.SC.,**

<b>MONT H</b>	<b>Unit</b>	<b>Learning Units</b>
<b>JUN- 18</b>	I	<b>Unit-I : Natural Resources:</b> Definition, scope and importance. Need for public awareness. Brief description of; Forest resources: Use and over-exploitation. Deforestation; timber extraction, mining, dams. Effect of deforestation environment and tribal people Water resources: Use and over-utilization. Effects of over utilisation of surface and ground water. Floods, drought. Mineral resources: Use and exploitatio
<b>JULY -18</b>	II	<b>Unit-II : Ecosystems, Biodiversity and its conservation</b> Concept of an ecosystem Structure and function of an ecosystem Producers, consumers and decomposers Food chains, food webs and ecological pyramids Characteristic features of the following ecosystems:- Forest ecosystem, Desert ecosystem, Aquatic ecosystem. Value of biodiversity: Consumptive use, productive use. Biodiversity in India. Threats to biodiversity: habitat loss, poaching of wildlife, man wildlife conflicts. Endangered and endemic species of India Conservation of biodiversity
<b>AUG- 2018</b>	III	<b>Unit-III : Environmental Pollution</b> Definition Causes, effects and control measures of :- a. Air pollution b. Water pollution c. Soil pollution d. Noise pollution Solid waste management; Measures for safe urban and industrial waste disposal Role of individual in revention of pollution Disaster management: Drought, floods and cyclones
<b>SEP- 2018</b>	IV	<b>Unit-IV : Social Issues and the Environment</b> From Unsustainable to Sustainable development Water conservation, rain water harvesting, watershed management. Climate change, global warming, ozone layer depletion, Environment protection Act Wildlife Protection Act, Forest Conservation Act
<b>OCT- 2018</b>	V	<b>Unit-V : Human Population and the Environment</b> Population explosion, impact on environment. Family welfare Programme Environment and human health Women and Child Welfare Value Education Role of Information Technology in Environment and humanhealth.

**ENTREPRENEURSHIP**  
**COURSE CODE-ENP201**

<b>MONTH</b>	<b>Unit</b>	<b>Learning Units</b>
<b>NOV-18</b>	I	<b>Unit-I: Entrepreneurship:</b> Entrepreneur Characteristics – Classification of Entrepreneurships – Incorporation of Business – Forms of Business organizations –Role of Entrepreneurship in economic development – Start-ups.
<b>DEC-18</b>	II	<b>Idea Generation and Opportunity Assessment:</b> Ideas in Entrepreneurships – Sources of New Ideas – Techniques for generating ideas – Opportunity Recognition – Steps in tapping opportunities
<b>JAN-2019</b>	III	<b>Project Formulation and Appraisal :</b> Preparation of Project Report – Content; Guidelines for Report preparation – Project Appraisal techniques –economic – Steps Analysis; Financial Analysis; Market Analysis; Technical Feasibility.
<b>FEB-2019</b>	IV	<b>Institutions Supporting Small Business Enterprises:</b> Central level Institutions: NABARD; SIDBI, NIC, KVIC; SIDIO; NSIC Ltd; etc. – state level Institutions –DICs- SFC- SSIDC- Other financial assistance.
<b>MAR-2019</b>	V	<b>Government Policy and Taxation Benefits:</b> Government Policy for SSIs- tax Incentives and Concessions –Non-tax Concessions – Rehabilitation and Investment Allowances.

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**(AUTONOMOUS)**

**(MANAGED BY SIDDHARTHA ACADEMY OF GENERAL & TECHNICAL EDUCATION VIJAYAWADA)**

**DEPARTMENT OF COMMERCE**

**CURRICULAR PLAN: 2018-2019**





SEMESTER – I

COURSE CODE:CACC -101G/C C

CURRICULAR PLAN:

**Title of the paper: Financial Accounting – I**

<b>MONTHS</b>	<b>Unit</b>	<b>Learning Units</b>
<b>JUN-18</b>	I	<b>Unit-I – Introduction to Accounting</b> Need for Accounting – Definition – Objectives, Advantages – Book keeping and Accounting– Accounting concepts and conventions - Accounting Cycle - Classification of Accounts and its rules - Double Entry Book-keeping - Journalization - Posting to Ledgers, Balancing of ledger Accounts (problems).
<b>JULY-18</b>	II	<b>Unit –II: Subsidiary Books:</b> Types of Subsidiary Books - Cash Book, Three-column Cash Book- Petty cash Book (Problems).
<b>AUG-2018</b>	III	<b>Unit-III: Trail Balance and Rectification of Errors:</b> Preparation of Trail balance - Errors – Meaning – Types of Errors – Rectification of Error
<b>SEP-2018</b>	IV	<b>Unit-IV- Bank Reconciliation Statement:</b> Need for bank reconciliation - Reasons for difference between Cash Book and Pass Book Balances- Preparation of Bank Reconciliation Statement- Problems on both favorable and unfavourable balances
<b>OCT-2018</b>	V	<b>Unit -V: Final Accounts:</b> Preparation of Final Accounts: Trading account – Profit and Loss account – Balance Sheet – Final Accounts with adjustments (Problems).

**SEMESTER – I**

**COURSE CODE:CBO -102G/C C**

**CURRICULAR PLAN:**

**Title of the paper: Business Organization**

<b>MONTHS</b>	<b>Unit</b>	<b>Learning Units</b>
<b>JUN-18</b>	I	<b>Unit-I – Introduction</b> Concepts of Business, Trade , Industry and Commerce – Features of Business -Trade Classification - Aids to Trade – Industry – Classification – Relationship of Trade, Industry and Commerce.
<b>JULY-18</b>	II	<b>Unit II- Business Functions and Entrepreneurship</b> Functions of Business and their relationship - Factors influencing the choice of suitable form of organization – Meaning of Entrepreneurship – Characteristics of a good entrepreneur - Types – Functions of Entrepreneurship.
<b>AUG-2018</b>	III	<b>Unit –III – Forms of Business Organizations</b> Sole Proprietorship – Meaning – Characteristics – Advantages and Disadvantages – Partnership - Meaning – Characteristics- Kinds of partners – Advantages and Disadvantages – Partnership Deed – Hindu-undivided Family – Cooperative Societies.
<b>SEP-2018</b>	IV	<b>Unit-IV- Joint Stock Company</b> Joint Stock Company – Meaning – Characteristics –Advantages – Kinds of Companies - Differences between Private Ltd and Public Ltd Companies.
<b>OCT-2018</b>	V	<b>Unit-V- Company Incorporation</b> Preparation of important Documents for incorporation of Company – Memorandum of Association – Articles of Association – Differences Between Memorandum of Association and Articles of Association - Prospectus and its contents.

SEMESTER – II

COURSE CODE: CACC -201G/C C

**CURRICULAR PLAN:**

**Title of the paper: Financial Accounting – II**

<b>MONTHS</b>	<b>Unit</b>	<b>Learning Units</b>
<b>NOV-18</b>	I	<b>Unit-I: Depreciation</b> Meaning of Depreciation - Methods of Depreciation: Straight line – Written down Value – Sum of the Years' Digits - Annuity and Depletion (Problems).
<b>DEC-18</b>	II	<b>Unit-II: Provisions and Reserves</b> Meaning – Provision vs. Reserve – Preparation of Bad debts Account – Provision for Bad and doubtful debts – Provision for Discount on Debtors – Provision for discount on creditors -Repairs and Renewals Reserve A/c (Problems).
<b>JAN-2019</b>	III	<b>Unit-III: Bills of Exchange</b> Meaning of Bill –Features of bill – Parties in the Bill – Discounting of Bill – Renewal of Bill – Entries in the books of Drawer and Drawee (Problems).
<b>FEB-2019</b>	IV	<b>Unit-IV: Consignment Accounts</b> Consignment - Features - Proforma invoice - Account sales – Del-credre Commission - Accounting treatment in the books of consigner and consignee - Valuation of closing stock - Normal and Abnormal losses (Problems).
<b>MAR-2019</b>	V	<b>Unit-V: Joint Venture Accounts</b> Joint venture - Features - Differences between Joint-venture and consignment – Accounting procedure - Methods of keeping records (Problems).

SEMESTER – II

COURSE CODE: CBEN -202G C

CURRICULAR PLAN:

**Title of the paper: Business Environment**

MONTHS	Unit	Learning Units
NOV-18	I	<b>Unit-I</b> <b>Overview of Business Environment</b> Business Environment – Meaning – Macro and Micro Dimensions of Business Environment – Economic – Political – Social – Technological – Legal – Ecological – Cultural – Demographic – Changing Scenario and implications – Indian Perspective – Global perspective. .
DEC-18	II	<b>Unit-II</b> <b>Economic Growth</b> Meaning of Economic growth – Factors Influencing Development – Balanced Regional Development.
JAN-2019	III	<b>Unit-III</b> <b>Development and Planning</b> Rostow’s stages of economic development - Meaning – Types of plans – Main objects of planning in India – NITI Ayog and National Development Council – Five year plans.
FEB-2019	IV	<b>Unit-IV</b> <b>Economic Policies</b> Economic Reforms and New Economic Policy – New Industrial Policy – Competition Law – Fiscal Policy – Objectives and Limitations – Union budget – Structure and importance of Union budget – Monetary policy and RBI.
MAR-2019	V	<b>Unit-V</b> <b>Social, Political and Legal Environment</b> Concept of Social Justice - Schemes - Political Stability - Leal Changes

SEMESTER –III

CURRICULAR PLAN:

COURSE CODE: CCA-301G/C C

Title of the paper: Corporate Accounting

MONTHS	Unit	Learning Units
JUN-18	I	<b>Unit -I:</b> <b>Accounting for Share Capital</b> - Issue, forfeiture and reissue of forfeited shares- concept & process of book building - Issue of rights and bonus shares - Buyback of shares (preparation of Journal and Ledger).
JULY-18	II	<b>Unit -II:</b> <b>Issue and Redemption of Debentures</b> - Employee Stock Options – Accounting Treatment for Convertible and Non-Convertible debentures (preparation of Journal and Ledger).
AUG-2018	III	<b>Unit –III:</b> <b>Valuation of Goodwill and Shares:</b> Need and methods - Normal Profit Method, Super Profits Method – Capitalization Method - Valuation of shares - Need for Valuation – Methods of Valuation - Net assets method, Yield basis method, Fair value method (including problems).
SEP-2018	IV	<b>UNIT – IV:</b> <b>Company Final Accounts:</b> Preparation of Final Accounts – Adjustments relating to preparation of final accounts – Profit and loss account and balance sheet – Preparation of final accounts using computers (including problems).
OCT-2018	V	<b>Unit –V</b> <b>Provisions of the Companies Act, 2013</b> relating to issues of shares and debentures - Book Building- Preparation of Balance Sheet and Profit and Loss Account – Schedule-III.

COURSE CODE: CBS-302G/C C

**Title of the paper: Business Statistics**

MONTHS	Unit	Learning Units
JUN-18	I	<b>Unit 1: Introduction to Statistics:</b> Definition, importance and limitations of statistics - Collection of data - Schedule and questionnaire – Frequency distribution – Tabulation - Diagrammatic and graphic presentation of data using Computers (Excel).
JULY-18	II	<b>Unit 2: Measures of Central Tendency:</b> Characteristics of measures of Central Tendency-Types of Averages – Arithmetic Mean, Geometric Mean, Harmonic Mean, Median, Mode, Deciles, Percentiles, Properties of averages and their applications.
AUG-2018	III	<b>Unit 3: Measures of dispersion and Skewness:</b> Properties of dispersion-Range-Quartile Deviation –Mean Deviation-Standard Deviation-Coefficient of Variation-Skewness definition-Karl Pearson’s and Bowley’s Measures of skewness-Normal Distribution.
SEP-2018	IV	<b>Unit 4: Measures of Relation:</b> Meaning and use of correlation – Types of correlation-Karl Pearson’s correlation coefficient –Spearman’s Rank correlation-probable error-Calculation of Correlation by Using Computers. Regression analysis comparison between correlation and Regression – Regression Equations-Interpretation of Regression Co-efficient.
OCT-2018	V	<b>Unit 5: Analysis of Time Series &amp; Index Numbers:</b> Components of Time series- Measurement of trend and Seasonal Variations – Index Numbers-Methods of Construction of Index Numbers – Price Index Numbers – Quantity Index Numbers –Tests of Adequacy of Index Numbers – Cost of Index Numbers-Limitations of Index Numbers –Use of Computer Software.

**SEMESTER –III**

**COURSE CODE: CBT-303G C**

**CURRICULAR PLAN:**

**Title of the paper: Banking Theory & Practice**

<b>MONTHS</b>	<b>Unit</b>	<b>Learning Units</b>
<b>JUN-18</b>	I	<b>Unit-I: Introduction</b> Meaning & Definition of Bank – Functions of Commercial Banks – Kinds of Banks -Central Banking Vs. Commercial Banking.
<b>JULY-18</b>	II	<b>Unit-II: Banking Systems</b> Unit Banking , Branch Banking, Investment Banking- Innovations in banking – e-banking - Online and Offshore Banking , Internet Banking - Anywhere Banking - ATMs- RTGS.
<b>AUG-2018</b>	III	<b>Unit-III: Banking Development</b> Indigenous Banking - Cooperative Banks, Regional Rural banks, SIDBI, NABARD -EXIM Bank.
<b>SEP-2018</b>	IV	<b>Unit-IV: Banker and Customer</b> Meaning and Definition of Banker and customer – Types of Customers - General Relationship and Special Relationship between Banker and Customer - KYC Norms.
<b>OCT-2018</b>	V	<b>Unit-V: Collecting Banker and Paying Banker</b> Concepts - Duties & Responsibilities of Collecting Banker – Holder for Value – Holder in Due Course – Statutory Protection to Collecting Banker - Responsibilities of Paying Banker - Payment Gateways.

**SEMESTER –IV**

**COURSE CODE: CASO-401G/C C**

**CURRICULAR PLAN:**

**Title of the paper: Accounting for Service Organizations**

<b>MONTHS</b>	<b>Unit</b>	<b>Learning Units</b>
<b>NOV-18</b>	I	<b>Unit-I: Non-Trading/ Service Organizations:</b> Concept - Types of Service Organizations – Section (8) and other Provisions of Companies Act,2013.
<b>DEC-18</b>	II	<b>Unit – II Electricity Supply Companies:</b> Accounts of Electricity supply companies: Double Accounting system – Revenue Account – Net Revenue Account – Capital Account – General Balance Sheet (including problems).
<b>JAN-2019</b>	III	<b>Unit – III - Bank Accounts</b> Bank Accounts – Books and Registers to be maintained by Banks – Banking Regulation Act, 1969 - Legal Provisions Relating to preparation of Final Accounts (including problems).
<b>FEB-2019</b>	IV	<b>Unit -IV: Insurance Companies</b> Life Insurance Companies –Preparation of Revenue Account, Profit and Loss Account, Balance Sheet (including problems) – LIC Act, 1956.
<b>MAR-2019</b>	V	<b>Unit – V: General Insurance</b> Principles – Preparation of final accounts – with special reference to fire and marine insurance (including problems) – GIC Act, 1972.



**SEMESTER –IV**

**CURRICULAR PLAN:**

**COURSE CODE: CBL-402G/C C**

**Title of the paper: Business Laws**

<b>MONTHS</b>	<b>Unit</b>	<b>Learning Units</b>
<b>NOV-18</b>	I	<b>Unit-1 Contract</b> Meaning and Definition of Contract-Essential elements of valid Contract -Valid, Void and Voidable Contracts - Indian Contract Act, 1872.
<b>DEC-18</b>	II	<b>Unit-2 Offer and Acceptance</b> Definition of Valid Offer, Acceptance and Consideration -Essential elements of a Valid Offer, Acceptance and Consideration.
<b>JAN-2019</b>	III	<b>Unit-3 Capacity of the Parties and Contingent Contract</b> Rules regarding to Minors contracts - Rules relating to contingent contracts – Different modes of discharge of contracts-Rules relating to remedies to breach of contract.
<b>FEB-2019</b>	IV	<b>Unit-4 Sale of Goods Act 1930</b> Contract of sale – Sale and agreement to sell – Implied conditions and warranties –Rights of unpaid vendor
<b>MAR-2019</b>	V	<b>Unit-5: Cyber Laws</b> Cyber Law and Contract Procedures - Digital Signature - Safety Mechanisms.

**SEMESTER –IV**

**COURSE CODE: CIT-403G C**

**CURRICULAR PLAN:**

**Title of the paper: Income Tax**

<b>MONTHS</b>	<b>Unit</b>	<b>Learning Units</b>
<b>NOV-18</b>	I	<b>Unit-I</b> <b>Introduction:</b> Income Tax Law – Basic concepts: Income, Person, Assesse, Assessment year, Agricultural Income, Capital and revenue, Residential status, Income exempt from tax (theory only).
<b>DEC-18</b>	II	<b>Unit-II</b> <b>Income from salary:</b> Allowances, perquisites, profits in lieu of salary, deductions from salary income, computation of salary income and qualified savings eligible for deduction u/s 80C(including problems).
<b>JAN-2019</b>	III	<b>Unit-III</b> <b>Income from House Property:</b> Annual value, let-out/self occupied/deemed to be let-out house, deductions from annual value - computation of income from house property (including problems).
<b>FEB-2019</b>	IV	<b>Unit-IV</b> <b>Income from Capital Gains – Income from other sources –</b> (from Individual point of view) -chargeability – and assessment (including problems).
<b>MAR-2019</b>	V	<b>Unit-V:</b> <b>Computation of total income of an individual –</b> Deductions under section - 80 (including problems).

**SEMESTER –V**  
**COURSE CODE: Com- C A-502**

**CURRICULAR PLAN:**

**Title of the paper: Cost Accounting**

<b>MONTHS</b>	<b>Unit</b>	<b>Learning Units</b>
<b>JUN-18</b>	I	<b>Unit-I:Introduction:</b> Distinguish between Financial Accounting, Cost Accounting and management accounting - Cost Concepts and Classification – Cost Centre and Cost Unit – Preparation of Cost Sheet.
<b>JULY-18</b>	II	<b>Unit-II: Elements of Cost:</b> Materials: Material control – Selective control, ABC technique – Methods of pricing issues – FIFO, LIFO, Weighted average, Base stock methods, choice of method(including problems).
<b>AUG-2018</b>	III	<b>Unit-III: Labour and Overheads:</b> Labour: Control of labor costs – time keeping and time booking – Idle time –Methods of remuneration – labour incentives schemes - Overheads: Allocation and apportionment of overheads – Machine hour rate.
<b>SEP-2018</b>	IV	<b>Unit-IV: Methods of Costing:</b> Job costing – Process costing - treatment of normal and abnormal process losses – preparation of process cost accounts – treatment of waste and scrap, joint products and by products (including problems).
<b>OCT-2018</b>	V	<b>Unit -V: Costing Techniques:</b> Marginal Costing – Standard costing – Variance Analysis (including problems).

**SEMESTER –V****COURSE CODE: Com-I T-503****CURRICULAR PLAN:****Title of the paper: Indirect Taxes**

<b>MONTHS</b>	<b>Unit</b>	<b>Learning Units</b>
<b>JUN-18</b>	I	<b>Unit –I: Central Sales Tax/G.S.T (Goods And Services Tax):</b> Objectives of CST Act, Dealer-Business-Sales-Goods-Declared goods, Turnover - Sale Price - Sales Exempt from Central Sales Tax, Interstate and Intra state sale, sales in the course of imports and exports, registration under CST Act.
<b>JULY-18</b>	II	<b>Unit- II: Customs Act:</b> Types of Custom Duties- Valuation for Customs Duty-Tariff Value- Customs Value- Methods of Valuation for Customs - Problems on Custom Duty Assessment.
<b>AUG-2018</b>	III	<b>Unit –III: Central Excise:</b> Procedures relating to Levy, Valuation and Collection of Duty, Types of Excise Duties- Cenvat Credit- Classification of Excisable Goods- Valuation of Excisable Goods-Central Excise Procedures (including problems).
<b>SEP-2018</b>	IV	<b>Unit –IV: Service Tax:</b> Features of Service Tax- Levy and Collection - Service Tax Administration-Exemptions from Service Tax - Taxable Services- Determination of Service Tax Liability (including problems)
<b>OCT-2018</b>	V	<b>Unit -V: VAT:</b> Concept and Principles - Calculation of VAT Liability including input Tax Credits, Small Dealers and Composition Scheme, VAT Procedures

**SEMESTER –V**

**COURSE CODE: Com-C G-504**

**CURRICULAR PLAN:**

**Title of the paper: Commercial Geography**

<b>MONTHS</b>	<b>Unit</b>	<b>Learning Units</b>
<b>JUN-18</b>	I	<b>Unit –I: The Earth:</b> Internal structure of the Earth – Latitude – Longitude – Realms of the Earth –Evolution of the Earth – Environmental pollution - Global Warming - Measures to be taken to protect the Earth.
<b>JULY-18</b>	II	<b>Unit -II: India – Agriculture:</b> Land Use - Soils - Major crops – Food and Non-food Crops – Importance of Agriculture – Problems in Agriculture – Agriculture Development.
<b>AUG-2018</b>	III	<b>Unit -III: India – Forestry:</b> Forests – Status of Forests in Andhra Pradesh – Forest (Conservation)Act, 1980 – Compensatory Afforestation Fund (CAF) Bill, 2015 - Forest Rights Act, 2006 and its Relevance – Need for protection of Forestry.
<b>SEP-2018</b>	IV	<b>Unit -IV: India – Minerals and Mining:</b> Minerals – Renewable and non Renewable – Use of Minerals – Mines – Coal, Barites, etc. – Singareni Coal mines and Mangampeta Barites – Districtwise Profile.
<b>OCT-2018</b>	V	<b>Unit-V: India – Water Resources – Rivers:</b> Water resources - Rationality and equitable use of water – Protection measures - Rivers - Perennial and peninsular Rivers - Interlinking of Rivers - Experience of India and Andhra Pradesh.

**SEMESTER –V**

**COURSE CODE: Com –C B 505(E)**

**CURRICULAR PLAN:**

**Title of the paper: Central Banking**

<b>MONTHS</b>	<b>Unit</b>	<b>Learning Units</b>
<b>JUN-18</b>	I	<b>Unit-I: Introduction:</b> Evolution and Functions of Central Bank - Development of Central Banks in Developed and Developing countries - Trends in Central Bank Functions.
<b>JULY-18</b>	II	<b>Unit-II: Central banking in India:</b> Reserve Bank of India - Constitution and Governance, Recent Developments, RBI Act. - Interface between RBI and Banks.
<b>AUG-2018</b>	III	<b>Unit-III: Monetary and Credit Policies:</b> Monetary policy statements of RBI - CRR - SLR – Repo Rates - Reverse Repo Rates - Currency in circulation - Credit control measures
<b>SEP-2018</b>	IV	<b>Unit-IV: Inflation and price control by RBI:</b> Intervention mechanisms - Exchange rate stability -Rupee value - Controlling measures
<b>OCT-2018</b>	V	<b>Unit-V: Supervision and Regulation:</b> Supervision of Banks - Basle Norms, Prudential Norms, Effect of liberalization and Globalization - Checking of money laundering and frauds.

**SEMESTER –V**COURSE CODE:**Com-R F C-506(E)****CURRICULAR PLAN:****Title of the paper: Rural and Farm Credit**

<b>MONTHS</b>	<b>Unit</b>	<b>Learning Units</b>
<b>JUN-18</b>	I	<b>Unit-I: Rural Credit:</b> Objectives and Significance of Rural credit - Classification of rural credit -General Credit Card (GCC) – Financial Inclusion - Rupay Card.
<b>JULY-18</b>	II	<b>Unit-II: Rural Credit Agencies:</b> Institutional and Non-institutional Agencies for financing agriculture and Rural development - Self-Help Groups (SHG) - Financing for Rural Industries.
<b>AUG-2018</b>	III	<b>Unit-III: Farm Credit:</b> Scope - Importance of farm credit - Principles of Farm Credit -Types- Cost of Credit - - problems and remedial measures - Kisan Credit Card (KCC) Scheme.
<b>SEP-2018</b>	IV	<b>Unit-IV: Sources of Farm Credit:</b> Cooperative Credit: PACS - APCOB - NABARD SLBC- Lead Bank Scheme - Role of Commercial and Regional Rural Banks - Problems of recovery and over dues.
<b>OCT-2018</b>	V	<b>Unit-V: Farm Credit Analysis:</b> Eligibility Conditions - Analysis of 3 R's (Return, Repayment Capacity and Risk-bearing Capacity) - Analysis of 3 C's of Credit (Character, Capacity and Capital) - Crop index reflecting use and farm credit - Rural Credit Survey Reports..

**SEMESTER –VI**

**COURSE CODE: Com- Tally -601(U)**

**CURRICULAR PLAN:**

**Title of the paper: Tally**

<b>MONTHS</b>	<b>Unit</b>	<b>Learning Units</b>
<b>JAN-2019</b>	<b>I</b>	<b>Unit-I: Fundamentals of Tally.ERP 9: Features</b> - Start Tally, Create and Alter a Company - Creating Single Group/Multiple Groups, Display, Deleting Groups - Ledger: Creating Single Ledger / Multiple Ledgers.
<b>FEB-2019</b>	<b>II</b>	<b>Unit-II: Create Accounting Masters in Tally.ERP 9</b> - Chart of Accounts - Creating Single and Multiple charts, Displaying and Altering charts – Walkthrough for creating Chart of Accounts – Back-up of data and Restoring - Tally Audit Features
<b>MAR-2019</b>	<b>III</b>	<b>Unit-III: Creating Inventory Master:</b> Creating Stock Groups, Displaying, Deleting, Altering - Creating Stock Unit of Measure, Displaying and Deleting Unit Measures - Creating, Altering, Displaying, Deleting Stock items - Generating Reports.



**SEMESTER –VI**

**COURSE CODE:CEM -601G/C**

**CURRICULAR PLAN:**

**Title of the paper: Event Management**

<b>MONTHS</b>	<b>Unit</b>	<b>Learning Units</b>
<b>JAN-2019</b>	I	<b>Unit-I: Event Concept:</b> Corporate Events and Customer’s needs - Types of Events - Corporate hospitality – Exhibitions – Trade Fairs – Conferences – Business and Government Meets - Corporate event packages - Menu Selection - Customization.
<b>FEB-2019</b>	II	<b>Unit-II: Outdoor Events:</b> Logistics, Types of Outdoor events, Risk management - Health and safety, Marketing and sponsorship, HR Management, Programming and Entertainment.
<b>MAR-2019</b>	III	<b>Unit-III: Celebrity Events:</b> Launches, Fashion shows, National festivals and high-profile charity events - Liaison with agents, Contract Negotiations, Client briefings, Celebrity wish lists and expectations - Liaisoning with Govt. Departments.

**SEMESTER –VI**  
**COURSE CODE: CM 602GE G/C**

**CURRICULAR PLAN:**

**Title of the paper: Marketing**

<b>MONTHS</b>	<b>Unit</b>	<b>Learning Units</b>
<b>NOV-18</b>	I	<b>Unit-I: Introduction:</b> Concepts of Marketing: Product Concept – Selling Concept - Societal Marketing Concept – Marketing Mix - 4 P’s of Marketing – Marketing Environment.
<b>DEC-18</b>	II	<b>Unit-II: Consumer Markets and Buyer Behaviour:</b> Buying Decision Process – Stages – Buying Behaviour – Market Segmentation – Selecting Segments – Advantages of Segmentation.
<b>JAN-2019</b>	III	<b>Unit-III: Product Management:</b> Product Life Cycle - New products, Product mix and Product line decisions - Design, Branding, Packaging and Labeling.
<b>FEB-2019</b>	IV	<b>Unit-IV: Pricing Decision:</b> Factors influencing price determination, Pricing strategies: Skimming and Penetration pricing
<b>MAR-2019</b>	V	<b>Unit-V: Promotion and Distribution:</b> Promotion Mix - Advertising - Publicity – Public relations - Personal selling and Direct marketing - Distribution Channels – Online marketing- Global marketing.

**SEMESTER –VI**

**CURRICULAR PLAN:**

**COURSE CODE: CAU-603GE G/C**

**Title of the paper: Auditing**

<b>MONTHS</b>	<b>Unit</b>	<b>Learning Units</b>
<b>NOV-18</b>	I	<b>Unit-I: Auditing:</b> Meaning – Objectives – Importance of Auditing – Auditing as a Vigil Mechanism – Role of Auditor in checking corporate frauds.
<b>DEC-18</b>	II	<b>Unit-II: Types of Audit:</b> Based on Ownership and time - Independent, Financial, Internal, Cost, Tax, Government, Secretarial audits.
<b>JAN-2019</b>	III	<b>Unit-III: Planning of Audit:</b> Steps to be taken at the commencement of a new audit - Audit programme - Audit note book - Internal check, internal audit and internal control.
<b>FEB-2019</b>	IV	<b>Unit-IV: Vouching and Investigation:</b> Vouching of cash and trading transactions - Investigation, Auditing vs. Investigation
<b>MAR-2019</b>	V	<b>Unit-V: Company Audit and Auditors Report:</b> Auditor's Qualifications – Appointment and Reappointment – Rights, duties, liabilities and disqualifications - Audit report: Contents – Preparation - Relevant Provisions of Companies Act, 2013.

**SEMESTER –VI**

**COURSE CODE: CMA 604GE G/C**

**CURRICULAR PLAN:**

**Title of the paper: Management Accounting**

<b>MONTHS</b>	<b>Unit</b>	<b>Learning Units</b>
<b>NOV-18</b>	I	<b>Unit–I: Management Accounting:</b> Interface with Financial Accounting and Cost Accounting - Financial Statement analysis and interpretation: Comparative analysis – Common size analysis and trend analysis (including problems).
<b>DEC-18</b>	II	<b>Unit–II: Ratio Analysis:</b> Classification, Importance and limitations - Analysis and interpretation of Accounting ratios - Liquidity, profitability, activity and solvency ratios (including problems).
<b>JAN-2019</b>	III	<b>Unit–III: Fund Flow Statement:</b> Concept of fund: Preparation of funds flow statement. Uses and limitations of funds flow analysis (including problems).
<b>FEB-2019</b>	IV	<b>Unit–IV: Cash Flow Statement:</b> Concept of cash flow – Preparation of cash flow statement – Uses and limitations of cash flow analysis (including problems).
<b>MAR-2019</b>	V	<b>Unit–V: Break-Even Analysis and Decision Making:</b> Calculation of Break-even point - Uses and limitations - Margin of safety – Make/Buy Decision - Lease/own Decision (including Problems).

**SEMESTER –VI**  
**COURSE CODE: CFS 605 CE G**

**CURRICULAR PLAN:**

**Title of the paper: Financial Services**

<b>MONTHS</b>	<b>Unit</b>	<b>Learning Units</b>
<b>NOV-18</b>	I	<b>Unit-I: Financial Services:</b> Role of Financial Services - Banking and Non Banking Companies – Activities of Non Banking Finance Companies- Fund Based Activities - Fee Based Activities .
<b>DEC-18</b>	II	<b>Unit-II: Merchant Banking Services:</b> Scope and importance of merchant banking services - Venture Capital - Securitization - Demat services - Commercial Papers – Treasury bills
<b>JAN-2019</b>	III	<b>Unit-III: Leasing and Hire-Purchase:</b> Types of Lease, Documentation and Legal aspects – Fixation of Rentals and Evaluation - Hire Purchasing- Securitization of debts - House Finance.
<b>FEB-2019</b>	IV	<b>Unit-IV: Credit Rating:</b> Purpose – Types – Credit Rating Symbols – Agencies: CRISIL and CARE – Equity Assessment vs. Grading – Mutual funds.
<b>MAR-2019</b>	V	<b>Unit-V: Other Financial Services:</b> Factoring and Forfaeiting - Procedural and financial aspects – Installment System - Credit Cards - Central Depository Systems: NSDL, CSDL.

**SEMESTER –VI**

**COURSE CODE:CFMS 606 CE G**

**CURRICULAR PLAN:**

**Title of the paper: Marketing of Financial Services**

<b>MONTHS</b>	<b>Unit</b>	<b>Learning Units</b>
<b>NOV-18</b>	I	<b>Unit-I: Difference between Goods and Services:</b> Managing Service Counters – Integrated Service Management – Service Elements.
<b>DEC-18</b>	II	<b>Unit-II: Constructing Service Environment</b> – Managing People for service Advantage – Service Quality and Productivity – Customer Loyalty.
<b>JAN-2019</b>	III	<b>Unit-III: Pricing and Promotion Strategies:</b> Pricing strategies – Promotion strategies – B2B Marketing – Marketing Planning and Control for services.
<b>FEB-2019</b>	IV	<b>Unit-IV: Distributing Services:</b> Cost and Revenue Management – Approaches for providing services - Channels for Service provision – Designing and managing Service Processes.
<b>MAR-2019</b>	V	<b>Unit-V: Retail Financial Services</b> - Investment services – Insurance services - Credit Services - Institutional Financial Services - Marketing practices in select Financial Service Firms

**Teaching Plan**  
**Academic Year-2018-19**

**Semester - I**

Paper Title : Differential Equations

Class: I B.Sc

Course Code: MAT – 101

Month	Planned (Unit No. & Chapter Title)	Remarks
Jun-18	Unit III: Higher Order L.D.Equations-I, Solution of Homogeneous L.D.Equations & Non Homogeneous L.D.Equations with constant coefficients (Method I & II).	
Jul-18	Unit IV: Higher Order L.D.Equations -II,Solution of Non Homogeneous L.D.Equations with constant coefficients (Method III,IV & V).	
Aug-18	Unit V: Higher Order L.D.Equations - III, M. V. P Method,The Cauchy-Euler Equation.	
Sep-18	Unit I: Differential Equations Of First Order & First Degree, L.D.Equations, D.E reducible to Linear form ,Exact D.E.,Integrating factors,Change of Variables.	
Oct-18	Unit II: Differential Equations of the First Order butnot of the First Degree, Orthogonal Trajectories, Equations Solvable for p,y & x,Equations of the First Degree In x & y-Clairaut's Equation.	

**Semester - III**

Paper Title : Abstract Algebra and Real Analysis -I

Class - II B,Sc

Course code - MAT-301C

Month	Planned (Unit No. & Chapter Title)	Remarks
Jun-18	Unit-I:Groups:Binary operation,Semi group,group defination and elementary properties,finite and infinite groups-examples order of a group,composition tables with examples	
Jul-18	Unit-II:Subgroups:multiplication of two subgrupus,union and intersection of two subgroups,Lagrange's theorem.	
Aug-18	Unit-III: Normal Subgroups, proper and improper normal subgroups, intersection of two normal sub groups,subgroup of index 2 is a normal subgroup,quotient group.	
Sep-18	Unit-IV:Real Numbers,Real Sequencesbounded sequences,the cauchy's criterion,bolzano-weierstrass theorem,cauchey'sgeneral principle of convergence theorem	
Oct-18	Unit-V:Infinite Series:p-test,cauchy's nth Root test,D'Alembert's Ratio test ,Leibnitz test	

**Semester-V**

Paper Title : Ring Theory And Vector Calculus

Class: III B.SC

Course Code: MAT-501

Month	Planned (Unit No. & Chapter Title)	Remarks
Jun-18	Unit-I:Rings-I: Ring, Boolean ring, Characteristic of a ring, Integral domain, Field, Ideals	
Jul-18	Unit-II-Rings-II: Homomorphism, Kernel of homomorphism, Fundamental theorem of homomorphism	
Aug-18	Unit-III: Vector Differentiation : Gradient, Divergent, Curl Operators of Vectors	
Sep-18	Unit-IV: Vector Integration: Line Integral, Surface Integral, Volume Integral with examples	
Oct-18	Unit-V: Vector Integration Applications: Theorems of Gauss and Stokes, Green's theorem in plane and applications of these theorems	

**Semester -V**

Paper Title : Linear Algebra

Class: III B.Sc

Course Code: MAT - 502

Month	Planned (Unit No. & Chapter Title)	Remarks
Jun-18	Unit IV: Matrices, Linear System of Equations	
Jul-18	Unit IV: Characteristic roots and vectors of a square matrices. Unit V: Inner Product Spaces.	
Aug-18	Unit I: Vector Space I, Vector Subspaces, LD and LID Unit II: Vector Space II,	
Sep-18	Unit II: Vector Space II, Basis and Dimensions Unit III: Linear Transformations	
Oct-18	Unit III: Linear Transformations, Rank Nullity theorem	



**Semester-II**

Paper Title :

Solid Geometry

Class: I B.Sc

Course Code: MAT - 201

Month	Planned (Unit No. & Chapter Title)	Remarks
Nov-18	Unit - I : The Plane, Equation of Plane in terms its Intercepts on the Axis , Equation of the Plane through the Given Points, Bisectors of angles between Two Points, Pair of Planes.	
Dec-18	Unit - II : The Line, Equation of a Line ,Angle Between a Line & a Plane ,Image Point, Image Line, Shortest Distance Between Two Lines.	
Jan-19	Unit - III : The Sphere , Definition & Equation of the Sphere ,Equation of the Sphere through four given points, Intersection of two Sphere, Equation of a Circle ,Sphere through a given Circle, Intersection of a Sphere & a Line ,Tangent Plane, Plane of a contact, Polar plane ,pole of a plane, Conjugate Points, Conjugate Planes.	
Feb-19	Unit - IV : The Sphere & Cones, Angle of Intersection of two Spheres, Coaxial System of Spheres, Definition of a Cone , Vertex, Guiding Curve, Generators, Equation of a cone with a given vertex & Guiding Curve, Enveloping Cone of a Sphere, Condition that a cone may have three mutually perpendicular generators.	
Mar-19	Unit - V : Cones & Cylinders, Reciprocal Cones, Right Circular Cone, Definition & Equation of a Cylinder, Enveloping Cylinder, Right Circular Cylinder.	

**Semester-IV**

Paper Title : Abstract Algebra and Real Analysis-II

Class: II.BSC

Course Code: MAT-401C

Month	Planned (Unit No. & Chapter Title)	Remarks
Nov-18	Unit-I: Homomorphism, Kernel of Homomorphism, fundamental theorem on Homomorphism.	
Dec-18	Unit-II: Permutations And Cyclic Group, Inverse of a permutation, even & odd permutations, Cayley's theorem.	
Jan-19	Unit III: Infinite Series: p-test, Cauchy's nth Root test, D'Alembert's Ratio test ,Leibnitz test	
Feb-19	Unit-IV: Differentiation And Mean Value Theorem, Rolle's Theorem, Cauchy's Mean Value Theorem.	
Mar-19	Unit-V: Riemann Integration, Darboux Theorem, Fundamental Theorem of integral calculus.	

**Semester :VI**

Paper Title : Numerical Analysis

Class: III B.Sc

Course Code: MAT - 601

Month	Planned (Unit No. & Chapter Title)	Remarks
Nov-18	Unit - I : Errors and their accuracy	
Dec-18	Unit - II : Applications of Algebraic and Transcendental equations, Regula - Falsi and Newton - Raphson Methods	
Jan-19	Unit - III : Finite Differences and Interpolation with equal intervals	
Feb-19	Unit - IV : Central difference interpolation with Gauss's, Stirling's, Bessel's and Everett's formulae	
Mar-19	Unit - IV : Interpolation with Unequal intervals, Newtons, Lagrange's interpolation Formulae	

**Semester-VI**

Paper Title : Integral Transforms

Class : III B.Sc

Course Code: MAT - 602

Month	Planned (Unit No. & Chapter Title)	Remarks
Nov-18	Unit - I : Applications of Laplace Transforms of D.E with Constant coefficients	
Dec-18	Unit - I : Applications of Laplace Transforms of solutions D.E with variable coefficients Unit - II Applications of Laplace Transforms of solutions D.E - II	
Jan-19	Unit - II Applications of Laplace Transforms of solutions D.E - II Unit - III : Applications of Laplace Transforms to Integral Equations	
Feb-19	Unit - IV : Fourier Series - I	
Mar-19	Unit - IV : Fourier Series - II	

Name of the Lecturer :

Paper

Title :

ADVANCED NUMERICAL ANALYSIS

IV  
III.BSC  
MAT-  
603CE

Month	Planned (Unit No. & Chapter Title)	Remarks
Nov-18	Unit-IV: Gaussian Elimination method, Gauss Jordan method, Iterative method.	
Dec-18	Unit-V: Numerical solution of ordinary differential equation, Euler's method, Runge-Kutta method.	
Jan-19	Unit-I: Curve Fitting, Polynomial fitting, Curve fitting by a power function and exponential function.	
Feb-19	Unit-II: Numerical Differentiation, Newton's forward difference formula, Derivatives using central difference formula	
Mar-19	Unit-III: Numerical Integration, Trapezoidal rule, Boole's rule and Weddle's rule.	

**DEPARTMENT OF PHYSICS**

**SEMESTER – I**

**2018-2019**

**Teaching Plan**

Subject Code : **PHY 101C**

Title: **Mechanics & properties of matter**

Month	Unit No.	Topic to be covered
June-'18	I	<b>1. Vector analysis :-</b> scalar and vector fields, gradient of a scalar field and its physical significance .divergence and curl of vector field with derivations, gauss theorem,stokes theorem
July-'18	II	<b>Mechanics of Particles</b> Review of Newton's Laws of Motion, Motion of variable mass system, Motion of a rocket, Multistage rocket, Concept of impact parameter, scattering cross-section.
Aug-'18	III	<b>4. Mechanics of Rigid bodies</b> Def of Rigid body, rotational kinematic relations, Equation of motion for a rotating body, Angular momentum and Moment of inertia tensor, Euler equations, Precession of a spinning top, Gyroscope, Precession of the equinoxes .
Sept-'18	IV	<b>Central forces :-</b> Def and examples, conservative nature of central forces, conservative force as negative gradient of potential energy, keplers laws, derivation, motion of satellites .
Oct-'18	V	<b>Special theory of relativity :-</b> Galilean relativity, absolute frames, michelson morely expt, posulates of special theory of relativity, lorentz transformations, length contraction, mass energy relation .

## SEMESTER – II

2018-2019

### Teaching Plan

Subject Code : **PHY 201C**

Title: **WAVES AND OSCILLATIONS**

Month	Unit No.	Topic to be covered
Nov -'18	I	<b>SIMPLE HARMONIC MOTION</b> :SHM and solution of differential equation, characteristics of shm, torsional pendulum, measurement of rigidity modulus, combination of two mutually perpendicular shm vibrations of same frequency, lissajous figures .
Dec-'18	II	<b>Damped and forced oscillations</b> : damped harmonic oscillator, solution of differential equation of oscillator, energy considerations, logarithmic decrement, quality factor, amplitude resonance, velocity resonance .
Jan-'19	III	<b>Complex vibrations</b> :- fourier theorem, forier coefficients, sqaure wave, triangular wave, saw tooth wave .
Feb-'19	IV	<b>Vibrating strings</b> :- transverse nature of propagation along a stretched string, solution of wave euation, modes of vibration of stretched string, overtones, tranverse impedence .
Mar-'19	V	<b>Ultrasonics</b> :- properties of ultrasonics, piezoelectric method, magnetostriction method, wavelength of ultra sonics, applications of ultrasonicss .



		Applications of holography
Oct-'18		

## SEMESTER – IV

2018-2019

### TEACHING PLAN

Subject Code: **PHY-401C**

Title: **Thermodynamics & Radiation physics**

Month	Unit No.	Topic to be covered
Nov -'18	I	<p><b>1.Kinetic theory of gases</b></p> <p>Introduction –Deduction of Maxwell’s law of distribution of molecular speeds, Transport phenomena-Viscosity of gases-thermal conductivity-diffusion of gases.</p>
Dec-'18	II	<p><b>2. Thermodynamics</b></p> <p>Introduction- Isothermal and adiabatic process-Reversible and irreversible processes-Carnot’s engine and its efficiency-Carnot’s theorem-Second law of thermodynamics. Kelvin’s and Clausius statements-Entropy, physical significance –Change in entropy in reversible and irreversible processes-Entropy and disorder-Entropy of Universe-Temperature-Entropy (T-S) diagram-Change of entropy of a perfect gas-change of entropy when ice changes into steam.</p>
Jan-'19	III	<p><b>3. Thermodynamic potentials and Maxwell’s equations</b></p> <p>Thermodynamic potentials-Derivation of Maxwell’s thermodynamic relations-Clausius-Clayperon’s equation-Derivation for ratio of specific heats-Derivation for difference of two specific heats for perfect gas. Joule Kelvin effect-expression for Joule Kelvin coefficient for perfect.</p>

Feb-'19	IV	<p><b>4. Low temperature Physics</b></p> <p>Introduction-Joule Kelvin effect-liquefaction of gas using porous plug experiment Joule expansion-Distinction between adiabatic and Joule Thomson expansion-Expression for Joule Thomson cooling-Liquefaction of helium, Kapitza's method-Adiabatic demagnetization, Production of low temperatures -applications of substances at low-temperature-effects of chloro and fluoro carbons on ozone layer.</p>
Mar-'19	V	<p><b>5. Quantum theory of radiation</b></p> <p>Blackbody-Ferry's black body-distribution of energy in the spectrum of black body-Wein's displacement law, Wein's law, Rayleigh-Jean's law-Quantum theory of radiation-Planck's law-Measurement of radiation-Types of pyrometers –Angstrom pyroheliometer-determination of solar constant, Temperature of Sun.</p>

## SEMESTER – V

**2018-2019**

### Teaching plan

Subject Code : **PHY 501C**

Title : **Electricity, Magnetism and Electronics**

June-'18	I	<p><b>1.Electrostatics</b> Gauss's law Statement and its proof-Electric field intensity due to (1) Uniformly charged sphere and (2) an infinite conducting sheet of charge. Electric potential- Equipotential surface –potential due to i) a point charge ii) charged spherical shell .</p> <p><b>2.Dielectrics</b> Electric dipole moment and molecular polarizability- Electric displacement D, electric polarization P – relation between D, E, and P- Dielectric constant, susceptibility .</p>

July-'18	II	<p><b>3. Electric and magnetic field</b> Biot – Savart's law and calculation of B due to long straight wire, a circular current loop and solenoid. Hall effect-determination of Hall coefficient and applications.</p> <p><b>4. Electromagnetic induction</b> Faraday's law – Lenz's law self and mutual inductance, coefficient of coupling, calculation of self inductance of a long solenoid, energy stored in magnetic field. Transformer- energy losses and efficiency.</p>
Aug-'18	III	<p><b>5. Alternating current and electro magnetic waves</b> Alternating current –Relation between current and voltage in LR and CR circuits, vector diagrams, LCR series and parallel resonant circuit , Q- factor, power in AC circuits.</p> <p><b>6. Maxwell's equations</b> Idea of displacement current- Maxwell's equations (integral and differential forms ) (no derivation) Maxwell's wave equation(with derivation), Transverse nature of electromagnetic wave. Pointing Vector (statement and proof) production of electromagnetic wave Hertz experiment.</p>
Sept-'18	IV	<p><b>7. Basic electronics:</b> PN junction diode Zener diode ,I-V characteristics, PNP and NPN Transistors, CB,CE and CC configuration Relation between <math>\alpha</math> <math>\beta</math> and <math>\Gamma</math> transistors (CE) characteristics, Transistor as an amplifier.</p>
Oct-'18	V	<p><b>Digital electronics:</b> Number systems-conversion of binary to decimal system and vice versa. Binary addition and subtraction (1's and 2's complement methods) laws of Boolean algebra-De Morgan's laws- statement and proof basic logic gates, NAND and NOR as universal gates Half adder and FULL adder.</p>



## SEMESTER – V

### 2018-2019 TEACHING PLAN

Subject Code: PHY- 502C

Title : MODERN PHYSICS

June-'18	I	<p><b>1. Atomic and molecular physics</b> Introduction – Drawbacks of Bohr's atomic model – Sommerfeld's elliptical orbits- relativistic correction (no derivation). Vector atom model and Stern &amp; Gerlach experiment - quantum numbers associated with it. L-S and j-j coupling schemes. Zeeman Effect and its experimental study. Raman effect, stokes and Anti stokes lines . Quantum theory of Raman effect. Experimental arrangement – Applications of Raman effect.</p>
July-'18	II	<p><b>2. Matter waves &amp; Uncertainty Principle</b> Matter waves, de Broglie's hypothesis – wavelength of matter waves, Properties of matter waves – Davisson and Germer experiment, uses of electron diffraction-Phase velocity and Group velocity (definitions only)- relation between phase velocity and Group velocity–Heisenberg's uncertainty principle for position and momentum (x and p) &amp; energy and time (E and t). Experiment verification.</p>
Aug-'18	III	<p><b>3. Quantum (wave) mechanics</b> Basic postulates of quantum mechanics – Schrodinger time independent and time dependent wave equation – derivations. Physical interpretation of wave function. Applications of Schrodinger wave equation to particle in one dimensional infinite box. Harmonic oscillator.</p>
Sept-'18	IV	<p><b>4. General properties of Nuclei</b> Basic ideas of nucleus – size, mass, charge density (matter energy), binding energy, angular momentum, parity, magnetic moment, electric quadrupole moments. Liquid drop model and shell model (qualitative aspects only)- Magic numbers.</p> <p><b>5. Radioactivity decay</b> Alpha decay : basis of <math>\alpha</math> – decay processes. Range of <math>\alpha</math>-particles , Geiger's Law, Geiger- Nuttal law. <math>\beta</math> – decay, <math>\beta</math> ray continuous and discrete spectrum, neutrino hypothesis.</p>

Oct-'18	V	<p><b>6. Crystal structure</b> Amorphous and crystalline materials, unit cell, Miller indices, reciprocal lattice, types of lattices, diffraction of X- rays by crystals, Bragg's law, experimental techniques, Laue's method and powder diffraction method.</p> <p><b>7. Superconductivity:</b> Introduction – experimental facts, critical temperature – critical field – Meissner effect – isotope effect – Type I and Type II superconductors – BCS theory (elementary ideas only) – applications of superconductors.</p>
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## SEMESTER – VI

### 2018-2019 TEACHING PLAN

Subject Code: **PHY 601 GE(c)** Title : **ANALOG AND DIGITAL ELECTRONICS**

Nov -'18	I	<p><b>1. FET</b> Construction ,Working ,Characteristics and uses; MOSEFT-enhancement MOSEFT,Depletion MOSEFT, Construction and Working, drain Characteristics of MOSEFT, applications of MOSEFT.</p> <p><b>2. Photo electric devices:</b> structure and operation, Characteristics and applications of LED and LCD.</p>
Dec-'18	II	<p><b>3.Operational amplifier:</b> Characteristics of ideal and practical OP-amp (IC-741),Basic differential OP-amp supply voltage, IC identification, internal blocks of OP-amp, its parameter off set voltages and currents, CMRR, slew rate, Concept of Virtual ground.</p>
Jan-'19	III	<p><b>4.Applications of OP-amp:</b> OP-amp as voltage amplifier, inverting amplifier, Non- inverting amplifier, Voltage follower, summing amplifier, difference amplifier, comparator, Integrator, Differentiator.</p>
Feb-'19	IV	<p><b>5. Data processing circuits:</b> Multiplexers, De – Multiplexers, encoders, decoders, Characteristics</p> <p><b>6. For Digital IC's –RTL, DTL,TTL, CMOS</b></p>

		(NAND&NOR Gates
Mar-'19	V	<b>7 .Sequential digital circuits:</b> Flip-flops, RS, clocked SR, JK, D, T, Master-Slave Flip-flops . <b>8. Counters:</b> Asynchronous counters-modulo 4counter-modulo 16 ripple counter, Decade counter, Synchronous counter.

## SEMESTER – VI

### 2018-2019 TEACHING PLAN

Subject Code: **PHY 602 CE(1)**

Title : **INTRODUCTION TO MICROPROCESSOR AND MICROCONTROLLER**

Nov -'18	I	<b>MICROPROCESSOR:</b> General architecture of microprocessor, architecture of 8085 microprocessor, 8085 pin diagram, Concept of data bus, address bus, and control bus, 8085 programming instruction classification.
Dec-'18	II	<b>8085 Interfacing Memory</b> Introduction-Memory structure and its requirements-basic concepts in memory interfacing. Address Decoding-Interfacing circuit. Port-mapped I/O or Direct I/O interface (8-bit Addressing)-Memory Indirect I/O mapped Interfaces (16-bit Addressing)-Port mapped versus Memory mapped I/O. I/O Device Interfacing.
Jan-'19	III	<b>8085 Microprocessor Applications</b> Introduction-Programmed data transfer scheme. Direct Memory Access (DMA) –Types. 8255A PPI-Block diagram. 8259A PIC-Pin diagram and functional description. 8257 Programmable DMA controller-Block diagram and Pin description.
Feb-'19	IV	<b>8051 Architecture-I:</b> Types of microcontrollers- microcontroller architecture, CISC, RISC, operation of microcontroller, basic building blocks of microcontroller, comparison of microcontroller and microprocessor- block diagram of 8051-I/o pins and ports. Microcontroller Resources.

Mar-'19	V	<b>8051 Architecture-II:</b> 8051 Flag bits and PSW register and DPTR register- Memory Organization- Special function registers- PSW register-Counters and Timers-Serial I/O-8051 Microcontroller Interrupts.
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## SEMESTER – VI

### 2018-2019 TEACHING PLAN

Subject Code: **PHY 603C**

Title: **Computational Methods and Programming**

Nov -'18	I	<p>1. Fundamentals of C language: C character set – Identifiers and keywords – structure of c program. Constants- variables- Data types- Declarations of variables – Declaration of storage class – Defining symbolic constants – Assignment statement.</p> <p>2.Operators : Arithmetic operators- Relational operators – Logic operators – Assignment operators – Increment and decrement operators – Conditional operators</p>
Dec-'18	II	<p>3.Expressions and I/O statements : Arithmetic expressions – precedence of arithmetic operators – Type converters in expressions – Mathematical ( Library) functions – Data input and output – The getchar and putchar functions – Scanf – Printf simple programs.</p> <p>4.Control statements: IF – ELSE statements – Switch statements – The operators – GO TO-while, DO-While, FOR statements – BREAK and CONTINUE statements.</p>
Jan-'19	III	<p>5.Arrays: One dimensional and two dimensional arrays – Initialization –Type declaration – Inputting and outputting of data for arrays – Programs of matrices addition, subtraction and multiplication.</p> <p>6.User defined functions: The form of C functions – Return values and their types – Calling a function – Category of functions. Nesting of functions. Recursion. ANSI C functions – Function declaration. Scope and life of variables in functions.</p>
Feb-'19		

	IV	7.Linear and Non-Linear equations: Solution of Algebra and transcendental equations – Bisection, Falsi position and Newton – Rhapsom methods – Basic principles – Formulae – algorithms. 8.Simultaneous equations: Solutions of simultaneous linear equations – Guass elimination and Gauss seidel iterative methods – Basic principles – Formulae- Algorithms
Mar-'19	V	Interpolations : Concept of linear interpolation – Finite differences – Newton's and Lagrange's interpolation formulae – principles and Algorithms. 9.Numerical differentiation and integration : Numerical differentiation – algorithm for evaluation of first order derivatives using formulae based on Taylor's series – Numerical integration – Trapezodal and Simpson's 1/3 rule – Algorithms.

## SEMESTER – VI

### 2018-2019 TEACHING PLAN

Subject Code: **PHY 604 CE**

Title : **Electronic Instrumentation**

Nov -'18	I	1. Basic of measurements: Instruments accuracy, precision, sensitivity- errors in measurements- Basic meter movement- PMMC (Permanent Magnetic Moving Coil). 2. Measurement of dc current: DC ammeter-multi range ammeters-the ARYTON Shunt or universal Shunt. 3. Measurement of dc voltage: DC Voltmeter – Multi Range Voltmeter- Voltmeter sensitivity.
Dec-'18	II	<b>4.Analog Multimeter:</b> Multimeter - as dc ammeter-as dc voltmeter-as ac voltmeter- as ohm meter-Multimeter operating instructions. 5.Digital instruments: Principle and working of digital instruments, characteristics of a digital meter, working principle of digital voltmeter.
Jan-'19	III	6.CRO: Block diagram of basic CRO, construction of CRT, electron gun, electrostatic focusing and acceleration (only explanation), time base operation, synchronization, front panel controls, specifications of CRO and their

		<p>significance.</p> <p>7.Applications CRO: Measurement of voltage-dc and ac, frequency, time period. Special features of dual trace CRO. Digital storage oscilloscope: block diagram and principle of working.</p>
Feb-'19	IV	<p>8.Diode as Rectifier – Half wave rectifier, Full wave rectifier – construction, working and efficiency. (no derivation)</p> <p>9.Feedback in Electronic circuits – Positive and Negative feedback, expressions for gains, advantages of negative feedback, Oscillators, Barkhausen criteria, RC phase shift oscillator (no derivation)</p>
Mar-'19	V	<p>10.Signal Generators: Block diagram, working and specifications of low frequency signal generators, pulse generator, function generator .</p> <p>11.Bridges: Measurement of resistance by Wheat stone's Bridge- Sensitivity of Wheat stone's Bridge- Applications of Wheat stone's Bridge- Limitations of Wheat stone's Bridge.</p>

**A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**  
**DEPARTMENT OF ENGLISH**  
**SEMESTER – I**  
**2018-19 CURRICULAR PLAN**

Subject Code: **CHE101**      Title: Inorganic and Organic chemistry

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
June -18	I	P- block elements-I
July-18	II	P- block elements-II& Organo metallic chemistry
Aug-18	III	Structural theory in organic chemistry
Sep-18	IV	Acyclic hydrocarbons & Alicyclic hydrocarbons
Oct-18	V	Benzene and its reactivity

**SEMESTER – II**  
**2018-19 CURRICULAR PLAN**

Subject Code: **CHE -201**      Title: **Physical and General chemistry**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Nov-18	I	Solid state
Dec-18	II	Gaseous state & Liquid state
Jan-19	III	Sollutions
Feb- '19	IV	Surface chemistry & Chemical bonding
Mar-19	V	Stereochemistry

### SEMESTER – III

#### 2018-19 CURRICULAR PLAN

Subject Code: **CHE -301**

Title :Inorganic and organic chemistry

Month	Unit No.	Topic to be covered
June -18	I	d-block elements & Theories of bonding in metals
July-18	II	Metal carbonyls & f-block elements
Aug-18	III	Halogen and Hydroxy compounds
Sep-18	IV	Carbonyl compounds
Oct-18	V	Carboxylic acids and derivatives

### SEMESTER – IV

#### 2018-19 CURRICULAR PLAN

Subject Code: **CHE- 401**

Title : Spectroscopy and Physical chemistry

Month	Unit No.	Topic to be covered
Nov-18	I	Spectrophotometry and Electronic spectroscopy
Dec-18	II	Infrared spectroscopy and NMR spectroscopy
Jan-19	III	Dilute solutions
Feb-19	IV	Electro chemistry-I
Mar-19	V	Electro chemistry-II and Phase rule

### SEMESTER – V(501)

#### 2018-19 CURRICULAR PLAN

Subject Code: CHE-501

Title :Inorganic, Organic & Physical Chemistry



Month	Unit No.	Topic to be covered
June -18	I	Co -ordination chemistry
July-18	II	Spectral and magnetic properties of metal complexess
Aug-18	III	Nitro hydro carbons
Sep-18	IV	Nitrogen compounds
Oct-18	V	thermodynamics

### SEMESTER – V(502)

#### 2018-19 CURRICULAR PLAN

Subject Code: CHE-502      Title :Inorganic, Organic & Physical Chemistry

Month	Unit No.	Topic to be covered
June -18	I	Reactivity of metal complexes and Bio-inorganic chemistry
July-18	II	Heterocyclic compounds
Aug-18	III	Carbohydrates
Sep-18	IV	Amino acids and proteins
Oct-18	V	Chemical kinetics and photo chemistry

### SEMESTER – VI(GE)

#### 2018-19 CURRICULAR PLAN

Subject Code: CHE-601      Title :Analytical methods in Chemistry

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Nov-18	I	Quantitative analysis
Dec-18	II	Treatment of Analytical data
Jan-19	III	Separation techniques in chemical analysis
Feb-'19	IV	Paper chromatography
Mar-18	V	TLC, Column chromatography

**SEMESTER – VI(CHE-602CE)**

**2018-19 CURRICULAR PLAN**

Subject Code: CHE-602CE Title :Organic spectroscopic techniques

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Nov-18	I	NMR spectroscopy
Dec-18	II	NMR spectroscopy
Jan-19	III	Electronic spectra of poly atomic molecules
Feb-19	IV	UV& Visible spectroscopy
Mar-19	V	Electron spin resonance spectroscopy

**SEMESTER – VI(CHE-603CE)**

**2018-19 CURRICULAR PLAN**

Subject Code: CHE-603 Title :Advanced organic reactions

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Nov-18	I	Organic photo chemistry
Dec-18	II	Organic photo chemistry
Jan-19	III	Protecting groups and organic reactions
Feb-19	IV	Synthetic reactions
Mar-19	V	New synthetic reactions

**SEMESTER – VI(CHE-604CE)**

**2018-19 CURRICULAR PLAN**

Subject Code: CHE-604 Title :Pharmaceutical and Medicinal chemistry

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Nov-18	I	Pharmaceutical terminology
Dec-18	II	Nomenclature
Jan-19	III	Synthesis and therapeutic activity of drugs
Feb-'19	IV	Pharmacodynamic drugs
Mar-19	V	HIV-AIDS

**A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYURU**

**DEPARTMENT OF computer science**

**YEAR:2018-19**

**SEMESTER – I**

**CURRICULAR PLAN/TEACHING PLAN**

**Subject Code: CSC-101C Title: Computer Fundamentals & Photoshop YEAR: 2018-19**

**Class: B.Sc.(MPCs)**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
JUNE-2018	I	Introduction to computers, characteristics and limitations of computer, Block diagram of computer, types of computers, uses of computers, computer generations. Number systems: binary, hexa and octal numbering system.
JULY - 2018	II	Input and output devices: Keyboard and mouse, inputting data in other ways, Types of Software: system software, Application software, commercial, open source, domain and freeware software, Memories: primary, secondary and cache memory. Windows basics: desktop, start menu, icons.
AGU-2018	III	Introduction to Adobe Photoshop, Getting started with Photoshop, creating and saving a document in Photoshop, page layout and back ground, Photoshop program window-title bar, menu bar ,option bar ,image window ,image title bar ,status bar, ruler, paletts, tool box ,screen modes ,saving files ,reverting files ,closing files.
SEP-2018	IV	<b>Images:</b> working with images, image size and resolution, image editing, colour modes and adjustments, Zooming & Panning an Image, Rulers, Guides & Grids- Cropping & Straightening an Image, image backgrounds, making selections. <b>Working with tool box:</b> working with pen tool, save and load selection-working with erasers-working with text and brushes- Colour manipulations: colour modes- Levels Curves - Seeing Colour accurately - Patch tool – Cropping-Reading your palettes - Dust and scratches- Advanced Retouching- smoothing skin.
OCT 2018	V	<b>Layers:</b> Working with layers- layer styles- opacity-adjustment layers <b>Filters:</b> The filter menu, Working with filters- Editing your photo shoot, presentation –how to create adds , artstic filter, blur filter, brush store filter, distort filters, noice filters, pixelate filters, light effects, difference clouds, sharpen filters, printing.

## SEMESTER-I

**Subject Code: CCSC-103C Title: Computer Fundamentals & Photoshop YEAR: 2018-19**  
**Class:B.Com.(C.A)**

Month	Unit No.	Topic to be covered
JUNE-2018	I	Introduction to computers, characteristics and limitations of computer, Block diagram of computer, types of computers, uses of computers, computer generations. Number systems: binary, hexa and octal numbering system.
JULY - 2018	II	Input and output devices: Keyboard and mouse, inputting data in other ways, Types of Software: system software, Application software, commercial, open source, domain and freeware software, Memories: primary, secondary and cache memory. Windows basics: desktop, start menu, icons.
AGU-2018	III	Introduction to Adobe Photoshop, Getting started with Photoshop, creating and saving a document in Photoshop, page layout and back ground, Photoshop program window-title bar, menu bar ,option bar ,image window ,image title bar ,status bar, ruler ,paletts, tool box ,screen modes ,saving files ,reverting files ,closing files.
SEP-2018	IV	<b>Images:</b> working with images, image size and resolution, image editing, colour modes and adjustments, Zooming & Panning an Image, Rulers, Guides & Grids- Cropping & Straightening an Image, image backgrounds, making selections. <b>Working with tool box:</b> working with pen tool, save and load selection-working with erasers-working with text and brushes- Colour manipulations: colour modes- Levels Curves - Seeing Colour accurately - Patch tool – Cropping-Reading your palettes - Dust and scratches- Advanced Retouching- smoothing skin.
OCT 2018	V	<b>Layers:</b> Working with layers- layer styles- opacity-adjustment layers <b>Filters:</b> The filter menu, Working with filters- Editing your photo shoot, presentation –how to create adds , artstic filter, blur filter, brush store filter, distort filters, noice filters, pixelate filters, light effects, difference clouds, sharpen filters, printing.

## SEMESTER:II

Subject Code: CSC-201C

Title: PROGRAMMING IN C

YEAR: 2018-'19

Class:B.Sc.(MPC'S)

Month	Unit No.	Topic to be covered
NOV-2018	I	<b>Introduction to Algorithms and Programming Languages:</b> Algorithm – Key features of Algorithms -Some more Algorithms – Flow Charts – Pseudo code – Programming Languages – Generation of Programming Languages – Structured Programming Language. <b>Introduction to C:</b> Introduction – Structure of C Program – Writing the first C Program –File used in C Program – Compiling and Executing C Programs – Using Comments –Keywords – Identifiers – Basic Data Types in C – Variables – Constants – I/O Statements in C- Operators in C- Programming Examples – Type Conversion and Type Casting
DEC - 2018	II	<b>Decision Control and Looping Statements:</b> Introduction to Decision Control Statements –Conditional Branching Statements – Iterative Statements – Nested Loops – Break andContinue Statement – Goto Statement <b>Functions:</b> Introduction – using functions – Function declaration/ prototype – Functiondefinition – function call – return statement – Passing parameters – Scope of variables –Storage Classes Recursive functions – Type of recursion – Towers of Hanoi – Recursion vsIteration
JAN-2019	III IV	<b>Arrays:</b> Introduction – Declaration of Arrays – Accessing elements of the Array – StoringValues in Array – Calculating the length of the Array – Operations on Array – onedimensional array for inter-function communication – Two dimensional Arrays –Operationson Two Dimensional Arrays - Two Dimensional Arrays for inter-function communication –Multidimensional Arrays – SparseMatrices <b>Strings:</b> Introduction –Suppressive Input – String Taxonomy – String Operations –Miscellaneous String and Character functions <b>Pointers:</b> Understanding Computer Memory – Introduction to Pointers – declaring PointerVariables – Pointer Expressions and Pointer Arithmetic – Null Pointers – Generic Pointers -Passing Arguments to Functions using Pointer
FEB-2019	IV	Pointer and Arrays – Passing Array toFunction – Difference between Array Name and Pointer – Pointers and Strings – Array ofpointers – Memory Allocation in C Programs – MemoryUsage – Dynamic Memory Allocation – Drawbacks of Pointers <b>Structure, Union, and Enumerated Data Types:</b> Introduction – Nested Structures – Arraysof Structures – Structures and Functions – Self referential Structures – Union – Arrays ofUnions Variables – Unions inside Structures – Enumerated Data Types
MAR-2019	V	<b>Files:</b> Introduction to Files – Using Files in C – Reading Data from Files – Writing Data from Files – Detecting the End-of-file – Error Handling during File Operations – AcceptingCommand Line Arguments – Functions for Selecting a Record Randomly - Remove() –Renaming a File – Creating a Temporary File

## SEMESTER:II

Subject Code: CCSC-203C Title: ENTERPRISE RESOURCE PLANNING

YEAR: 2018-'19

Class:B.Com.(C.A)

Month	Unit No.	Topic to be covered
NOV-2018	I	<b>Introduction:</b> Overview of enterprise systems – Evolution - Risks and benefits - Fundamental technology - Issues to be consider in planning design and implementation of cross functional integrated ERP systems.
DEC - 2018	II	<b>ERP Solutions and Functional Modules:</b> Overview of ERP software solutions- Small, medium and large enterprise vendor solutions, BPR and best business practices - Business process Management, Functional modules.
JAN-2019	III	<b>ERP Implementation:</b> Planning Evaluation and selection of ERP systems -Implementation life cycle - ERP implementation, Methodology and Frame work- Training – Data Migration - People Organization in implementation-Consultants, Vendors and employees.
FEB-2019	IV	<b>Post Implementation:</b> Maintenance of ERP- Organizational and Industrial impact; Success and Failure factors of ERP Implementation.
MAR-2019	V	<b>Emerging Trends on ERP:</b> Extended ERP systems and ERP add-ons -CRM, SCM, Business analytics - Future trends in ERP systems-web enabled, Wireless technologies, cloud computing.

## SEMESTER:II

Subject Code: **ICT-I-201**

Title: **Computer Fundamentals & Office Tools**

**YEAR: 2018-'19**

**Class:B.A, B.Com, B.Sc.**

Month	Unit No.	Topic to be covered
NOV-2018	I	<b>Basics of Computers</b> Definition of a Computer - Characteristics and Applications of Computers – Block Diagram of a Digital Computer – Classification of Computers based on size and working Central Processing Unit – Input, Output and I/O Devices
DEC - 2018	II	<b>Memory Devices &amp; Operating Systems</b> :Primary, Auxiliary and Cache Memory – Memory Devices – Software, Hardware, Firmware and People ware –Definition and Types of Operating System – Functions of an Operating System – MS-DOS MS-Windows – Desktop, Computer, Documents, Pictures, Music, Videos, Recycle Bin, Task Bar – Control Pane
JAN-2019	III  IV	<b>MS-Word</b> Features of MS-Word – MS-Word Window Components – Creating, Editing, Formatting and Printing of Documents – Headers and Footers – Insert/Draw Tables, Table Auto format – Page Borders and Shading – Inserting Symbols, Shapes, Word Art, Page Numbers, Equations – Spelling and Grammar – Thesaurus – Mail Merge <b>MS-PowerPoint</b> Features of PowerPoint – Creating a Blank Presentation - Creating a Presentation using a Template - Inserting and Deleting Slides in a Presentation
FEB-2019	IV	Adding Clip Art/Pictures -Inserting Other Objects, Audio, Video - Resizing and Scaling of an Object – Slide Transition – Custom Animation
MAR-2019	V	<b>Emerging Trends on ERP</b> : Extended ERP systems and ERP add-ons -CRM, SCM, Business analytics - Future trends in ERP systems-web enabled, Wireless technologies, cloud computing.



**SEMESTER -III****Subject Code:**CSC-301C**Title:** Object Oriented Programming using Java**YEAR:** 2018-'19**Class:** B.SC (MPC'S)

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
JUNE-2018	I II	Electron microscopic structure of cell Plasma membrane - Fluid mosaic model, Transport functions of plasma membrane (Active & Passive) Structure and functions of Endoplasmic reticulum. Structure and functions of Golgi body. Structure and functions of Ribosome's. Structure and functions of Lysosomes.
JULY -2018	II III	Structure and functions of Mitochondria. Chromosomes - Structure, types & functions Mendel's Laws of Inheritance. Incomplete dominance and co-dominance
AGU-2018	III IV	Lethal alleles, Epistasis Linkage and crossing over Sex determination (Male hetero & female homogametic, female hetero & male, homogametic type, Haplo – Diploid, Genic Balance Theory, Barr bodies. Sex linked inheritance (X – linked, Y – linked & XY – linked inheritance. Sex – limited and Sex influenced inheritance.) Extra chromosomal inheritance (Kappa particles in Paramecium)
SEP-2018	V	Origin of life. Hardy – Weinberg Equilibrium. Lamarckism, Darwinism, Neo – Darwinism. Isolation. Speciation (Allopatric and Sympatric).

### SEMESTER -III

**Subject Code:** CCSC-303C

**Title:** Office Automation Tools

**Year:**2018-2019

**Class:** B.COM(CA)

Month	Unit No.	Topic to be covered
JUNE-2018	I	MS-Excel: features of Ms-Excel, Parts of MS-Excel window, entering and editing data in worksheet, number formatting in excel, different cell references, how to enter and edit formula in excel, auto fill and custom fill, printing options.
JULY -2018	II	<b>options:</b> Different formatting options, change row height, formulae and Functions, <b>Functions:</b> Meaning and advantages of functions, different types of functions available in Excel. <b>Charts:</b> Different types of charts, Parts of chart, chart creation using wizard, chart operations, data maps, graphs, data sorting, filtering. Excel sub totals, scenarios, what-if analysis.
AGU-2018	III IV	<b>Macro:</b> Meaning and advantages of Macros, creation, editing and deletion of macros - Creating a macro, how to run, how to delete a macro. <b>MS Access: Creating a Simple Database and Tables:</b> Features of Ms-Access, Creating a Database, Parts of Access. <b>Tables:</b> table creation using design view, table wizard, data sheet view, import table, link table. <b>Forms:</b> The Form Wizard, design view, columnar, tabular, data sheet, chart wizard.
SEP-2018	V	<b>Finding, Sorting and Displaying Data:</b> Queries and Dynasts, Creating and using select queries, Returning to the Query Design, Multi-level sorts, Finding incomplete matches, showing All records after a Query, saving queries - Crosstab Queries. <b>Printing Reports:</b> Form and Database Printing.

### SEMESTER -III

Subject Code: ICT-II-301C

Title: Internet Fundamentals & Web tools

YEAR:2018-2019

Class: B.COM(CA)

Month	Unit No.	Topic to be covered
JUNE-2018	I II	<b>Fundamentals of Internet :</b> Networking Concepts, Data Communication – Types of Networking, Internet and its Services, Internet Addressing – Internet Applications – Computer Viruses and its types – Browser –Types of Browsers. <b>Internet applications:</b> Using Internet Explorer, Standard Internet Explorer Buttons, Entering a Web Site Address, Searching the
JULY -2018	II III	Internet – Introduction to Social Networking: twitter, tumbler, LinkedIn, face book, flicker, Skype, yelp, vimeo, yahoo, Google+, YouTube, WhatsApp, etc. <b>E-mail :</b> Definition of E-mail - Advantages and Disadvantages – User-Ids, Passwords, Email Addresses, Domain Names, Mailers,
AGU-2018	III IV	<b>E-Mail:</b> Message Components, Message Composition, Mail Management, Email Inner Workings. <b>WWW-</b> Web Applications, Web Terminologies, Web Browsers, URL – Components of URL, Searching WWW – Search Engines and Examples
SEP-2018	V	<b>Basic HTML:</b> Basic HTML – Web Terminology – Structure of a HTML Document – HTML, Head and Body tags – Semantic and Syntactic Tags – HR, Heading, Font, Image and Anchor Tags – Different types of Lists using tags – Table Tags, Image formats – Creation of simple HTML Documents.

## SEMESTER -IV

**Subject Code:** CSC-401C

**Title:** Data Structures

**YEAR:**2018-19

**Class:** B.SC (MPC'S)

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
NOV-2018	I	<b>Concept of Abstract Data Types (ADTs)-</b> Data Types, Data Structures, Storage Structures, and File Structures, Primitive and Non-primitive Data Structures, Linear and Non-linear Structures. <b>Linear Lists</b> - ADT, Array and Linked representations, Pointers. <b>Arrays</b> - ADT, Mappings, Representations, Sparse Matrices, Sets - ADT, Operations <b>Linked Lists:</b> Single Linked List, Double Linked List, Circular Linked List, applications
DEC -2018	II	<b>Stacks:</b> Definition, ADT, Array and Linked representations, Implementations and Applications <b>Queues:</b> Definition, ADT, Array and Linked representations, Circular Queues, De-queues, Priority Queues, Implementations and Applications.
JAN-2019	III	<b>Trees:</b> Binary Tree, Definition, Properties, ADT, Array and Linked representations, Implementations and Applications. Binary Search Trees (BST) - Definition, ADT, Operations and Implementations, BST Applications. Threaded Binary Trees, Heap trees
FEB-2019	IV	<b>Graphs</b> – Graph and its Representation, Graph Traversals, Connected Components, Basic Searching Techniques, Minimal Spanning Trees
MAR-2019	V	<b>Sorting and Searching:</b> Selection, Insertion, Bubble, Merge, Quick, Heap sort, Sequential And Binary Searching.

**SEMESTER -IV****Subject Code:** CCSC-403C**Title:** Business Analytics**YEAR:**2018-19**Class:** B.COM (CA)

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
NOV-2018	I	Introduction - Business Analytics Life Cycle - Business Analytics Process - Data concepts - Data exploration & visualization - Business Analytics as Solution for Business Challenges .
DEC -2018	II	Automated Data Analysis: Tabulation and Cross Tabulation of Data: Univariate, Bivariate and Multivariate Data Analysis – ANOVA.
JAN-2019	III	Hypothesis Testing: Type 1 & 2 errors - T-test, ANOVA, Chi-Square and correlation- Linear Regression Analysis - Logistic Regression - Cluster Analysis - Market Basket Analysis.
FEB-2019	IV	Business Data Management: Master Data Management: Data Warehousing and kinds of Architecture – Data Extraction – Transformation and Up-loading of Data –
MAR-2019	IV	Data Mining – Meta Data – Data Marts – Creating Data Marts – Data Integration – OLTP and OLAP.
	V	SPSS Packages – Applications and Case Studies.

**SEMESTER -V****Subject Code:** CSC-501C **Title:** Data Base Management System **YEAR:** 2018-2019**CLASS:**B.SC (MPC'S)

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
JUNE-2018	I	Database Systems: Introducing the database and DBMS, Why the database is important, Historical Roots: Files and File Systems, Problems with File System, Data Management, Database Systems. Data Models: The importance of Data models, Data Model Basic Building Blocks, The evaluation of Data Models, Degree of Data Abstraction
JULY - 2018	II	The Relational Database Model: A logical view of Data, Keys, Integrity Rules, Relational Set Operators, The Data Dictionary and the system Catalog, Indexes, Codd's relational database rules. Entity Relationship Model: The ER Model <b>Advanced Data Modelling:</b> The Extended Entity Relationship Model, Entity clustering, Entity integrity.
AGU-2018	III	Normalization of database tables: Data base Tables and Normalization, The need for Normalization, The Normalization Process, High level Normal Forms, Normalization and database design, de normalization. Database Design: The Information System, The Systems Development Life Cycle, The Database Life Cycle, Centralized Vs Decentralized design.
SEP-2018	IV	Introduction to SQL: Data Definition Commands, Data Manipulation Commands, Select queries, Advanced Data Definition Commands, Advanced Select queries, Virtual Tables, SQL Join Operators, Sub queries and correlated queries, SQL Functions
OCT 2018	V	Introduction to PL/SQL: Triggers, Stored Procedures, PL/ SQL Stored Functions

**SEMESTER -V****Subject Code:**CSC-502C  
**YEAR:**2018-19**Title:** Software Engineering  
**CLASS:**B.SC (MPC'S)

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
JUNE-2018	I	The Evolving Role of Software– Software - The Changing Nature of Software, Software Myths, Legacy Software. Process: Software Engineering-A Layered Technology - A Process Framework - The Capability Maturity Model Integration (CMMI) - Process Patterns, Process Assessments - Personal And Team Process Models: Personal Software Process(PSP), Team Software Process (TSP).
JULY -2018	II	The Waterfall Models - Increment Process Models: The Increment Model, The RAD Model - Evolutionary Process Models: Prototyping, The Spiral Model, The Concurrent Development Model - The Unified Process: Phases of The United Process, Unified Process Work Products
AGU-2018	III	Requirements Engineering Tasks - Initiating The Requirements Engineering Process - Eliciting Requirements: Collaborative Requirements Gathering, Quality Function Deployment, User Scenarios, Elicitation Work Products - Negotiating Requirements - Validating Requirements.
SEP-2018	IV	Requirements Analysis -Analysis Modelling Approaches - Data Modelling Concepts - Object-Oriented Analysis - Scenario-based Modelling - Flow-Oriented Modelling - Class-Based Modelling - Creating a Behavioural Model: Identifying Events with the Use-Case, State Representations.
OCT 2018	V	Design Process And Design Quality - Design Concepts - The Design Model: Data Design Elements, Architectural Design Elements, Interface Design Elements, Component-Level Design Elements, Deployment -Level Design Elements.

**SEMESTER -V****Subject Code:** CCSC-505C    **Title:** Programming in C    **YEAR:**2018-19**CLASS:** BCOM(CA)

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
JUNE-2018	I	<b>Introduction to Algorithms and Programming Languages:</b> Algorithm – Key features of Algorithms – Some more Algorithms – Flow Charts. Introduction to C: Structure of C Program – Writing the first C Program – File used in C Program – Compiling and Executing C Programs Using Comments – Keywords – Identifiers – Basic Data Types in C – Variables Constants – I/O Statements in C- Operators in C- Programming Examples – Type Conversion and Type Casting.
JULY -2018	II	<b>Decision Control and Looping Statements</b> :Introduction to Decision Control Statements – Conditional Branching Statements – Iterative Statements – Nested Loops – Break and Continue Statement – Go to Statement
AGU-2018	III	<b>Function:</b> Introduction – using functions – Function declaration/prototype – Function definition – function call – return statement – Passing parameters – Scope of variables – Storage Classes – Recursive function.
SEP-2018	IV	<b>Array</b> :Introduction – Declaration of Arrays – Accessing elements of the Array – Storing Values in Array Calculating the length of the Array – Operations on Array – one dimensional array for inter-function communication – Two dimensional Arrays –Operations on Two Dimensional Arrays <b>Strings:</b> Introduction String and Character functions
OCT 2018	V	<b>Pointers</b> :Understanding Computer Memory – Introduction to Pointers – declaring Pointer Variables Passing Arguments to Functions using Pointer. Structure, Union, and Enumerated Data Types: Introduction – Nested Structures – Unions – Enumerated Data Types.



**SEMESTER -V****Subject Code:** CCSC-506C **Title:** Data Base Management System **YEAR:**2018-19**CLASS:** BCOM(CA)

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
JUNE-2018	I	<b>Database Systems Introduction</b> Data base Systems: Introducing the database and DBMS, Why the database is important, Historical Roots: Files and File Systems, Problems with File System, Data Management, Database Systems. Data Models: The importance of Data models, Data Model Basic Building Blocks, The evaluation of Data Models.
JULY -2018	II	<b>Relational Database &amp; Data Modeling</b> The Relational Database Model: A logical view of Data, Keys, Integrity Rules, Relational Set Operators, Indexes, Codd's relational database rules. Entity Relationship Model: The ER Model Advanced Data Modeling: The Extended Entity Relationship Model, Entity clustering.
AGU-2018	III	<b>Normalization and Database Design</b> Normalization of database tables: Database Tables and Normalization, The need for Normalization, The Normalization Process, High level Normal Forms, Normalization and database design, de normalization
SEP-2018	IV	<b>Structured Query Language</b> Introduction to SQL: Data Definition Commands, Data Manipulation Commands, Select queries, Advanced Data Definition Commands, Advanced Select queries, Virtual Tables, SQL Join Operators,
OCT 2018	V	<b>Procedural SQL</b> Introduction to PL/SQL : Triggers, Stored Procedures, Pl/ SQL Stored Functions

**SEMESTER -VI****Subject Code:** CSC-601(GE) **Title:** WEB TECHNOLOGIES **YEAR:**2018-19**CLASS:** BSC(MPC'S)

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
NOV-2018	I	<b>Introduction to XHTML:</b> Introduction to HTML, Basic html, Document body text, Hyper links, Adding more formatting Lists, Tables, Images, Multimedia Objects, Frames, Forms and XHTML.
DEC -2018	II	<b>CSS:</b> Cascading Style Sheets: Introduction, Defining your own styles, properties and values in styles, Formatting blocks of information, Layers. Java Script: java Script, the basics, Variables, String Manipulations, Mathematical functions, Statements, Operators, Arrays, Functions.
JAN-2019	III	<b>Objects in Java Script &amp; Dynamic HTML with Java Script</b> Objects in Java Script: Data and objects in java script, Regular expressions, Exception Handling, Built in objects, Events. Dynamic HTML with Java Script: Data validation, Opening a new window, Messages and Confirmations, The status bar, Writing to a different frame, Rollover buttons, Moving images, Multiple pages in a single download, A text-only menu system, Floating logos.
FEB-2019	IV V	<b>XML Defining Data for Web Applications</b> XML: Introduction to XML, Basic XML, document type definition, XML Schema, Document object model, presenting XML, Using XML parser. JSP: JSP Lifecycle, Basic Syntax, EL (Expression Language), EL Syntax, Using EL Variables

**SEMESTER -VI****Subject Code: CSC-602CE Title: PHP, MySQL & Word Press Year:2018-19****CLASS: BSC(MPC'S)**

Month	Unit No.	Topic to be covered
NOV-2018	I	<b>Installing and Configuring MySQL:</b> Current and Future Versions of MySQL, How to Get MySQL, Installing MySQL on Windows, Trouble Shooting your Installation, Basic Security Guidelines, Introducing MySQL Privilege System, Working with User Privileges. Installing and Configuring Apache: Current and future versions of Apache, Choosing the Appropriate Installation Method, Installing Apache on Windows, Apache Configuration File Structure, Apache Log Files, Apache Related Commands, Trouble Shooting. Installing and Configuring PHP: Building PHP with Apache on Windows, php.ini.Basics, The Basics of PHP scripts. The Building blocks of PHP: Variables, Data Types, Operators and Expressions, Constants. Flow Control Functions in PHP: Switching Flow, Loops, Code Blocks and Browser Output
DEC - 2018	II	<b>Working with Functions:</b> What is function?, Calling functions, Defining Functions, Returning the values from User-Defined Functions, Variable Scope, Saving state between Function calls with the static statement, more about arguments. Working with Arrays: What are Arrays? Creating Arrays, Some Array-Related Functions. Working with Objects: Creating Objects, Object Instance Working with Strings, Dates and Time: Formatting strings with PHP, Investigating Strings with PHP, Manipulating Strings with PHP, Using Date and Time Functions in PHP.
JAN-2019	III	<b>Working with Forms:</b> Creating Forms, Accessing Form Input with User defined Arrays, Combining HTML and PHP code on a single Page, Using Hidden Fields to save state, Redirecting the user, Sending Mail on Form Submission, Working with File Uploads. Working with Cookies and User Sessions: Introducing Cookies, Setting a Cookie with PHP, Session Function Overview, Starting a Session, Working with session variables, passing session IDs in the Query String, Destroying Sessions and Unsetting Variables, Using Sessions in an Environment with Registered Users. Working with Files and Directories: Including Files with include(), Validating Files, Creating and Deleting Files, Opening a File for Writing, Reading or Appending, Reading from Files, Writing or Appending to a File, Working with Directories.
FEB-2019	IV	<b>Introduction to MySQL</b> Introduction to My SQL and Interfacing with Databases through PHP Understanding the database design process: The Importance of Good Database Design, Types of Table Relationships, Understanding Normalization. Learning basic SQL Commands: Learning the MySQL Data types, Learning the Table Creation Syntax, Using Insert Command, Using SELECT Command, Using WHERE in your Queries, Selecting from Multiple Tables, Using the UPDATE command to modify records, Using REPLACE Command, Using the DELETE Command, Frequently used string functions in MySQL, Using Date and Time Functions in MySQL. Interacting with MySQL using PHP: MySQL Versus MySQLi Functions, Connecting to MySQL with PHP, Working with MySQL Data
MAR-2019	V	<b>Word press</b> Word press: Introduction to word press, servers like wamp, bitnami e.tc, installing and configuring word press, understanding admin panel, working with posts and pages, using editor, text formatting with shortcuts, working with media-Adding, editing, deleting media elements, working with widgets, menus. Working with themes-parent and child themes, using featured images, configuring settings.

## SEMESTER -VI

Subject Code: CSC-603CE Title: Advanced java Script: JQUERY/AJAX/JSON/ANGULAR JS YEAR: 2018-19

CLASS: B.SC(MPC'S)

Month	Unit No.	Topic to be covered
NOV-2018	I	<b>JQuery – Basics:</b> String, Numbers, Boolean, Objects, Arrays, Functions, Arguments, Scope, Built-in Functions. jQuerySelectors: CSS Element Selector, CSS Element ID Selector, CSS Element Class Selector, CSS Universal Selector, Multiple Elements E, F, G Selector, Callback Functions. jQuery – DOM Attributes: Get Attribute Value, Set Attribute Value. jQuery – DOM Traversing : Find Elements by index, Filtering out Elements, Locating Descendent Elements, JQuery DOM Traversing Methods.
DEC -2018	II	<b>jQuery – CSS Methods :</b> Apply CSS Properties, Apply Multiple CSS Properties, Setting Element Width & Height, JQuery CSS Methods. jQuery – DOM Manipulation Methods: Content Manipulation, DOM Element Replacement, Removing DOM Elements, Inserting DOM elements, DOM Manipulation Methods. jQuery – Events Handling: Binding event handlers, Removing event handlers, Event Types, The Event Object, The Event Attributes. jQuery – Effects: JQuery Effect Methods, jQuery Hide and Show, jQuery Toggle, jQuery Slide – slideDown, slideUp, slideToggle, jQuery Fade – fadeIn, fadeOut, fadeTo, jQuery Custom Animations
JAN-2019	III IV	<b>Intro to jQuery UI</b> Need of jQuery UI in real web sites, Downloading jQuery UI, Importing jQuery UI, Draggable, Droppable, Resizable, Selectable, Sortable, Accordion, Auto Complete, Button Set, Date Picker, Dialog, Menu, Progress Bar, Slider, Spinner, Tabs, Tooltip, Color Animation, Easing Effects, addClass, removeClass, Effects, jQuery UI themes, Customizing jQuery UI widgets / plug-ins, jQuery UI with CDN, Consuming jQuery Plug-ins from 3rd party web sites jQuery Validations, Intro to jQuery validation plug-in, Using jQuery validation plug-in, Regular expressions.
FEB-2019	IV	<b>Intro to AJAX</b> Need of AJAX in real web sites, Getting database data using jQueryAJAX, Inserting, Updating, Deleting database data using jQuery-AJAX Grid Development using jQuery-AJAX Intro to JSON JSON syntax, Need of JSON in real web sites.
MAR-2019	V	<b>Intro to AngularJS</b> Need of AngularJS in real web sites, Downloading AngularJS, AngularJS first example, AngularJS built-in directives, AngularJS expressions, AngularJS modules, AngularJS controllers, AngularJS scope AngularJS dependency injection AngularJS, bootstrapping AngularJS data bindings, AngularJS \$watch, AngularJS filters, AngularJS events, AngularJS AJAX, Ng-repeat, AngularJS with json arrays, AngularJS registration form and login form, AngularJS CRUD operations, AngularJS Animations, AngularJS validations AngularJS \$q, AngularJS custom values, AngularJS custom factories, AngularJS custom services, AngularJS custom directives, AngularJS custom providers, AngularJS Routing, AngularUI Routing.

**SEMESTER -VI****Subject Code:** COM-CSC-605**Title:** TALLY**YEAR:**2018-19**CLASS:** B.COM(CA)

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
NOV-2018	I	<b>Introduction to Tally:</b> Introduction, Software versions of Tally, Terminology related to Accounts credit & Debit, Journal, Ledger, Voucher, Group etc. Difference between Manual Accounting and Accounting Packages. Features and advantages of Tally.
DEC -2018	II	<b>Introduction of Tally Software</b> Introduction of Tally Software Creation of a company, Gateway of Tally, Accounts Information, Groups, pre defined Groups, Creation of New Groups, Creation of sub Group.
JAN-2019	III	<b>Ledgers</b> Ledger Creation Single and multiple Ledgers, Displaying & altering Ledgers, configure Ledger, Stock Ledger, Ledgers and their Group Allocation.
FEB-2019	IV	<b>Vouchers</b> Types of vouchers – recording of vouchers – entry of payment voucher, Receipt voucher, sales voucher, purchase voucher, Journal Voucher, Contra Voucher, Debit & Credit Note. Creating New Voucher types, customizing the Existing voucher types, Alternation of Voucher, Deletion of Voucher
MAR-2019	V	<b>Final Accounts</b> Customizing the final accounts – Profit and Loss Account, Balance Sheet. Key board shortcuts in Tally. Generating the Reports from Tally, Trial Balance, Account Books, Sales, Purchase, Journal Registers, Statement of Accounts, Day Book, List of Accounts.

**SEMESTER -VI****Subject Code:** COM-CSC-606    **Title:** E-COMMERCE    **YEAR:**2018-19**CLASS:** BCOM(CA)

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
NOV-2018	I	<b>Introduction to E-Commerce</b> Scope, Definition, e-Commerce and the Trade Cycle, Electronic Markets, Electronic Data Interchange, Internet Commerce. Business Strategy in an Electronic Age: Supply Chains, Porter's Value Chain Model, Inter Organizational Value Chains, Competitive Strategy, First Mover Advantage – Sustainable Competitive Advantage, Competitive Advantage using E-Commerce – Business Strategy
DEC -2018	II	<b>Business-to-Business Electronic Commerce</b> Characteristics of B2B EC, Models of B2B EC, Procurement Management by using the Buyer's Internal Market place, Just in Time Delivery, Other B2B Models, Auctions and Services from traditional to Internet Based EDI, Integration with Back-end Information System, Role of Software Agents for B2B EC, Electronic marketing in B2B, Solutions of B2B EC, Managerial Issues, Electronic Data Interchange (EDI), EDI: Nuts and Bolts EDI and Business.
JAN-2019	III	<b>Internet and Extranet</b> Automotive Network Exchange, Largest Extranet, Architecture of the Internet, Intranet and Extranet, Intranet software, Applications of Intranets, intranet Application Case Studies, Considerations in Intranet Deployment, Extranets, Structures of Extranets, Extranet products and services, Applications of Extranets, Business Models of Extranet Applications, Managerial Issues. Electronic Payment Systems: Issues and Challenges .
FEB-2019	IV	<b>Public Policy:</b> From Legal Issues to Privacy : Legal Incidents, Ethical and Other public Policy Issues, Protecting Privacy, Protecting Intellectual Property, Free speech, Internet Indecency and Censorship, Taxation and Encryption Policies, Other Legal Issues: Contracts, Gambling and More, Consumer and Seller Protection in EC.
MAR-2019	V	<b>Infrastructure For EC</b> Network of Networks, Internet Protocols, Web- Based client/Server, Internet Security, Selling on the Web, Chatting on the Web, Multimedia delivery, Analyzing Web Visits, Managerial Issues, Equipment required for establishing EC Sites – problems in Operation – Future of EC.

**SEMESTER -VI****Subject Code:** CCSC-607CE**Title:** PHP& MY SQL**YEAR:**2018-19**CLASS:** BCOM(CA)

Month	Unit No.	Topic to be covered
NOV-2018	I	<b>Building blocks of PHP:</b> Variables, Data Types, Operators and Expressions, Constants. Flow Control Functions in PHP: Switching Flow, Loops, Code Blocks and Browser Output. Working with Functions: Defining Functions, Calling functions, returning the values from UserDefined Functions, Variable Scope, Saving State between Function calls with the Static statement, more about arguments.
DEC -2018	II	<b>Working with Arrays:</b> Arrays, Creating Arrays, Some Array-Related Functions. Working with Objects: Creating Objects, Object Instance. Working with Strings, Dates and Time: Formatting Strings with PHP, Investigating Strings with PHP, Manipulating Strings with PHP, Using Date and Time Functions in PHP.
JAN-2019	III	<b>Working with Forms:</b> Creating Forms, Accessing Form – Input with User defined Arrays, Combining HTML and PHP code on a single Page, Using Hidden Fields to save state, Redirecting the user, Sending Mail on Form Submission, Working with File Uploads. Working with Cookies and User Sessions: Introducing Cookies, Setting a Cookie with PHP, Session Function Overview, Starting a Session, Working with session variables, passing session Ids in the Query String, Destroying Sessions and Unsetting Variables, Using Sessions in an Environment with Registered Users.
FEB-2019	IV	<b>Working with Files and Directories:</b> Including Files with include(), Validating Files, Creating and Deleting Files, Opening a File for Writing, Reading or Appending, Reading from Files, Writing or Appending to a File, Working with Directories, Open Pipes to and from Process Using popen (), Running Commands with exec(), Running Commands with system ( ) or passthru ( ). Working with Images: Understanding the Image-Creation Process, Necessary Modifications to PHP, Drawing a New Image, Getting Fancy with Pie Charts, Modifying Existing Images, Image Creation from User Input.
MAR-2019	V	<b>Interacting with MySQL using PHP:</b> MySQL Versus MySQLi Functions, Connecting to MySQL with PHP, Working with MySQL Data. Creating an Online Address Book: Planning and Creating Database Tables, Creating Menu, Creating Record Addition Mechanism, Viewing Records, Creating the Record Deletion Mechanism, Adding Sub-entities to a Record.

**A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**

**DEPARTMENT OF BOTANY**

**2018 CURRICULAR PLAN (2018-19)**

**SEMESTER – I**

**Paper II: TITLE OF THE PAPER: *Microbial Diversity, Algae and Fungi***

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
JUNE-2018	I	<b>Origin and Evolution of Life, Microbial diversity</b> 1. Origin of life –theories introduction; Lamarckism, Darwinism and Neo Darwinism. 2. Geological time scale 3. Microbial diversity-Mycoplasma – Chlamydia -Archaeobacteria – Actinomycetes
JULY -2018	II	<b>VIRUSES AND BACTERIA</b> 1. Viruses: General account of Viruses, structure, replication and transmission of plant diseases caused by Viruses. 2. Bacteria: Structure, nutrition, reproduction and economic importance. Outlines of plant diseases of important crop plants caused by Bacteria (Citrus canker, leaf blight of rice, Angular leaf spot of Cotton) and their control.
AGU-2018	III	<b>CYANOBACTERIA AND LICHENS</b> 1. Cyanobacteria: General account of cell structure, thallus organization and their uses as Biofertilizers. 2. Structure, reproduction and life history of <i>Nostoc</i> and <i>Scytonema</i> . 3. Lichens – Morphology –Anatomy –Reproduction –Economic importance.
SEP-2018	IV	<b>Algae</b> 1. General account, Fritsch classification of Algae and economic importance. 2. Structure, reproduction, life history of <i>Oedogonium</i> , <i>Vaucheria</i> and <i>Ectocarpus</i> .
OCT 2018	V	<b>FUNGI</b> 1. General characters, classification (Alexopolous) and economic importance. 2. Structure, reproduction and life history of <i>Albugo</i> , <i>Penicillium</i> , <i>Puccinia</i> . 3. General account of plant diseases caused by Fungi (Late blight of potato, Red rot of Sugarcane and Paddy blast) and their control.



Month	Unit No.	Topic to be covered
NOV-2018	I	<p><b>BRYOPHYTA</b></p> <p><b>1. Bryophyta:</b> General characters and classification (up to classes only).</p> <p>2. Structure, reproduction and Life history of <i>Marchantia</i> and <i>Polytrichum</i>.</p> <p>3. Evolution of Sporophyte in Bryophytes</p>
DEC - 2018	II	<p><b>PTERIDOPHYTA</b></p> <p><b>1. Pteridophyta:</b> General characters and Classification (up to classes only).</p> <p>2. Structure, reproduction and life history of <i>Lycopodium</i> and <i>Marsilea</i>.</p> <p>3. Heterospory and seed habit</p> <p>4. Stelar Evolution in Pteridophytes</p>
JAN-2019	III	<p><b>GYMNOSPERMS</b></p> <p><b>1. Gymnosperms:</b> General characters and classification (up to classes only).</p> <p>2. Morphology, Anatomy, reproduction and life history of <i>Pinus</i> and <i>Gnetum</i>.</p>
FEB-2019	IV	<p><b>Tissues and Tissue systems</b></p> <p>1. Tissues: Meristematic and permanent tissues (Simple and Complex).</p> <p>2. Shoot apical meristems and its histological organization.</p> <p>3. Root apical meristems and its histological organization.</p> <p><b>Secondary growth.</b></p> <p>1. Anomalous secondary growth in <i>Dracaena</i>, <i>Boerhaavia</i> and <i>Bignonia</i>.</p>
MAR-2019	V	<p>2. Wood structure- general account, Study of local timbers Teak, Rosewood, Red sanders and <i>Terminalia tomentosa</i>.</p>

**Paper III: Plant Taxonomy and Plant Physiology SEMESTER - III**

Month	Unit No.	Topic to be covered
JUNE-2018	I  II	<p><b>Introduction to Plant Taxonomy</b></p> <ol style="list-style-type: none"> <li>1. Fundamental components of taxonomy (identification, nomenclature, classification types and phylogeny)</li> <li>2. Salient features and comparative account of Bentham &amp; Hooker and Engler &amp; Prantl's Classification.</li> <li>3. Role of chemotaxonomy, cytotaxonomy and taxometrics in relation to Taxonomy</li> </ol> <p><b>Systematic Taxonomy</b></p> <ol style="list-style-type: none"> <li>1. Nomenclature and Taxonomic resources: An introduction to International Code of Botanical Nomenclature; Principles, Rules and Recommendations.</li> </ol>
JULY - 2018	II  III	<ol style="list-style-type: none"> <li>2. Systematic study and economic importance of plants belonging to the following families: Annonaceae, Capparidaceae, Rutaceae, Cucurbitaceae and Apiaceae.</li> </ol>
AGU-2018	III  IV	<p><b>Systematic Taxonomy</b></p> <ol style="list-style-type: none"> <li>1. Systematic study and economic importance of plants belonging to the following families: Asteraceae, Asclepiadaceae, Lamiaceae, Euphorbiaceae, Orchidaceae and Poaceae.</li> </ol> <p><b>Plant – Water relations</b></p> <ol style="list-style-type: none"> <li>1. Importance of water to plant life, physical properties of water,</li> <li>2. Diffusion, Imbibition and osmosis; water potential, osmotic potential and pressure potential.</li> <li>3. Absorption, transport of water, ascent of sap.</li> <li>4. Transpiration – types, stomata structure, movements and significance.</li> </ol>
SEP-2018	V	<p><b>Mineral nutrition and Fertilizers</b></p> <ol style="list-style-type: none"> <li>1. Mineral Nutrition: Essential macro and micro mineral nutrients and their role, mineral uptake (active and passive), deficiency symptoms.</li> <li>2. Nitrogen cycle- biological nitrogen fixation.</li> <li>3. Enzymes: Nomenclature, characteristics, mechanism and regulation of enzyme action, enzyme kinetics, factors regulating enzyme action.</li> </ol>

Month	Unit No.	Topic to be covered
NOV-2018	I	<p><b>EMBRYOLOGY</b></p> <ol style="list-style-type: none"> <li>1. Introduction: History and Importance of Embryology.</li> <li>2. Anther structure, Microsporogenesis and development of male gametophyte.</li> <li>3. Ovule structure and types; Megasporogenesis; Monosporic; Bisporic and Tetrasporic types of female gametophyte / embryosac development.</li> <li>4. Pollination -Types, Fertilization.</li> </ol> <p><b>EMBRYOLOGY AND PALYNOLOGY</b></p> <ol style="list-style-type: none"> <li>1. Endosperm Development and types.</li> <li>2. Embryo - development and types.</li> </ol>
DEC -2018	II	<ol style="list-style-type: none"> <li>3. Polyembryony and Apomixis - an outline.</li> <li>4. Palynology: Principles and applications.</li> </ol> <p><b>PLANT METABOLISM- I</b></p> <ol style="list-style-type: none"> <li>1. Photosynthesis: Electromagnetic spectrum, absorption and action spectra; Red drop and Emerson enhancement effect, concept of Z scheme in photosystems,</li> </ol>
JAN-2019	III	<p>Photosynthetic pigments, mechanism of photosynthetic electron transport and evolution of oxygen, photo phosphorylation, carbon assimilation pathways: C<sub>3</sub>, C<sub>4</sub> &amp; CAM and Photorespiration.</p> <ol style="list-style-type: none"> <li>2. Translocation of organic substances: Mechanism of phloem transport, source-sink relationships.</li> </ol> <p><b>PLANT METABOLISM- II</b></p> <ol style="list-style-type: none"> <li>1. Respiration: Aerobic and Anaerobic, Glycolysis, Krebs cycle, electron transport system, mechanism of oxidative phosphorylation, pentose phosphate pathway.</li> <li>2. Lipid Metabolism: Structure and functions of lipids, conversion of lipids to carbohydrates, Beta-oxidation.</li> </ol>
FEB-2019	IV	<p><b>GROWTH AND DEVELOPMENT</b></p> <ol style="list-style-type: none"> <li>1. Growth and development: Definition, phases and kinetics of growth, Physiological effects of phytohormones - auxins, gibberellins, cytokinins, ABA and ethylene</li> <li>2. Physiology of flowering and photoperiodism, role of phytochrome in flowering.</li> <li>3. Stress Physiology: Concept and plant responses to water, salt and temperature stresses.</li> </ol>

## SEMESTER – V CELL BIOLOGY, GENETICS AND PLANT BREEDING

Month	Unit No.	Topic to be covered
JUNE-2018	I	<p><b>Cell Biology</b></p> <ol style="list-style-type: none"> <li>1. Cell, Ultra Structure and functions of cell wall.</li> <li>2. Molecular Organization of cell membranes.</li> <li>3. Chromosomes; morphology, organization of DNA in a chromosome (Nucleosome model) Euchromatin and Heterochromatin.</li> </ol> <p><b>Genetic Material</b></p> <ol style="list-style-type: none"> <li>1. DNA as the Genetic Material: Griffith's and Avery's Transformation Experiment. Hershey - Chase Bacteriophage experiment.</li> </ol>
JULY - 2018	II	<ol style="list-style-type: none"> <li>2. DNA Structure (Watson &amp; crick model) and replication of DNA (Semi Conservative).</li> <li>3. Types of RNA (mRNA, tRNA, rRNA), their structure and function.</li> </ol> <p><b>Mendelian Inheritance</b></p> <ol style="list-style-type: none"> <li>1. Mendelian Inheritance (Mono – Di-hybrid Crosses), Back cross and Text cross.</li> </ol>
AGU-2018	III	<ol style="list-style-type: none"> <li>2. Linkage: concept, complete and In-complete Linkage, Coupling and Repulsion; Linkage. Maps Based on Two and Three Point cross.</li> <li>3. Crossing over concept and significance.</li> </ol> <p><b>Gene Expression</b></p> <ol style="list-style-type: none"> <li>1. Organization of gene, Transcription and Translation.</li> <li>2. Mechanism and regulation of Gene Expression in Prokaryotes (Lac operas).</li> </ol>
SEP-2018	IV	<ol style="list-style-type: none"> <li>3. Mutations: Chromosomal Aberrations, Gene Mutations and Transposable Elements.</li> </ol> <p><b>Plant Breeding</b></p> <ol style="list-style-type: none"> <li>1. Introduction and objectives of Plant Breeding.</li> <li>2. Methods of Crop Improvement: Procedure, Advantages and limitations of Introduction,</li> </ol>
OCT 2018	V	Selection and Hybridization (Out lines only).

Month	Unit No.	Topic to be covered
JUNE-2018	I	<b>ELEMENTS OF ECOLOGY</b> 1. Ecology: Definition, branches and significance of ecology. 2. Claimatic factors: Light, Temperature. 3. Edaphic factor: Origin, formation, composition and soil profile. 4. Biotic factor, Ecological adaptations of Plants.
JULY - 2018	II	<b>Ecosystem Ecology</b> 1. Ecosystem: concept and components, energy flow, food chain, food web, Ecological Pyramids. 2. Productivity of ecosystem-Primary, Secondary and Net productivity. 3. Biogeochemical cycles- Carbon, Nitrogen and Phosphorous.
AGU-2018	III	<b>Population &amp; Community ecology.</b> 1. Population-defination, characteristics and importance (Density,Natality, Mortality, Growth Curves) outlines-ecotypes. 2. Plant communities- characters of a community, outlines – Frequency, density, cover, life forms, Biological Spectrum. 3. Ecological Succession: Hydrosere and Xerosere
SEP-2018	IV	<b>Phytogeography</b> 1.Principles of Phytogeography, Distribution (Wides, Endemic, Discontinuous species. 2. Phytogeographic regions of India. 3. Endemism – types and Causes.
OCT 2018	V	<b>Plant Biodiversity and its Importance</b> 1. Definition, Levels of Biodiversity – genetic, species and ecosystem. 2. Biodiversity and Hot-spots of India: North Eastern, Himalayas and Western Ghats. 3. Loss of Biodiversity-causes and Conservation (In-situ and Ex-Situ Methods).

**PAPER – VII – ELECTIVE-C**  
**Plant tissue culture and its biotechnological applications**

Month	Unit No.	Topic to be covered
NOV-2018	I	<p align="center"><b>PLANT TISSUE CULTURE – 1</b></p> <p>1. History of plant tissue culture research - basic principles of plant tissue callus culture, meristems culture, organ culture, Totipotency of cells.</p> <p>2. Methodology - sterilization (physical and chemical methods), culture media, Murashige and Skoog's (MS medium), phytohormones, medium for micro-propagation/clonal propagation of ornamental and horticulturally important plants.</p> <p>3. Callus subculture maintenance, growth measurements, morphogenesis in callus culture – Organogenesis, somatic embryogenesis.</p>
DEC -2018	II	<p align="center"><b>Plant Tissue culture-2</b></p> <p>1. Endosperm culture – Embryo culture -culture requirements – applications, embryo rescue technique.</p> <p>2. Production of secondary metabolites.</p> <p>3. Cryopreservation; Germ plasm conservation.</p>
JAN-2019	III	<p align="center"><b>Recombinant DNA technology</b></p> <p>1. Restriction Endonucleases (history, types I-IV, biological role and application); concepts of restriction mapping.</p> <p>2. Cloning Vectors: Prokaryotic (pUC 18, pBR322, Ti plasmid and Lambda phage, Eukaryotic Vectors (YAC and briefly PAC)</p> <p>3. Gene cloning (Bacterial Transformation and selection of Recombinant clones, PCR Mediated gene cloning)</p> <p>4. Construction of genomic and cDNA libraries, screening DNA libraries to obtain gene interest by complementation technique, colony hybridization.</p> <p align="center"><b>Methods of gene transfer</b></p> <p>1. Methods of gene transfer- Agrobacterium-mediated, direct gene transfer by Electroporation, Microinjection, Micro projectile bombardment.</p>
FEB-2019	IV	<p>2. Selection of transgenics– selectable marker and reporter genes (Luciferase, GUS, GFP).</p> <p align="center"><b>Applications of Biotechnology</b></p> <p>1. Applications of Plant Genetic Engineering – crop improvement, herbicide resistance, insect resistance, virus resistance.</p> <p>2. Genetic modification – transgenic plants for pest resistant (Bt-cotton); herbicide resistance (Round Up Ready soybean);</p>
MAR-2019	V	<p>improved agronomic traits flavrSavr tomato, Golden rice); Improved horticultural varieties (Moon dust carnations).</p>

**Paper – VIII-A-1 PLANT DIVERSITY AND HUMAN WELFARE BOT-602 (CE)**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
NOV-2018	I	<p><b>Plant diversity and its scope:</b></p> <ol style="list-style-type: none"> <li>1. Genetic diversity, Species diversity, Plant diversity at the ecosystem level,</li> <li>2. Agro biodiversity and Vavilov Crop centers.</li> <li>3. Values and uses of biodiversity: Ethical and aesthetic values, Uses of Plants.</li> </ol>
DEC -2018	II	<p><b>Loss of biodiversity:</b></p> <ol style="list-style-type: none"> <li>1. Loss of genetic diversity, Loss of species diversity, Loss of ecosystem diversity, Loss of agro biodiversity, projected scenario for biodiversity loss.</li> <li>2. Management of plant biodiversity: Organizations associated with Biodiversity. Management-Methodology for execution-IUCN, UNEP, UNESCO, WWF, NBPGR; Biodiversity legislation and conservations, Biodiversity information management and Communication.</li> </ol>
JAN-2019	III	<p><b>Contemporary practices in resource management:</b></p> <ol style="list-style-type: none"> <li>1. Environmental Impact Assessment (EIA), Geographical Information System GIS,</li> <li>2. Solid and liquid waste management.</li> </ol> <p><b>Conservation of biodiversity</b></p> <ol style="list-style-type: none"> <li>1. Conservation of genetic diversity, species. diversity</li> </ol>
FEB-2019	IV	<p>2.Social approaches to conservation, Biodiversity awareness , Programmes, Sustainable development.</p> <p><b>Role of plants in relation to Human Welfare</b></p> <ol style="list-style-type: none"> <li>1.Importance of forestry, their utilization and commercial aspects- a) Avenue trees, b) ornamental plants of India. c) Alcoholic beverages Through ages</li> </ol>
MAR-2019	V	<ol style="list-style-type: none"> <li>2 Fruits and nuts: Important fruit crops their commercial importance. Wood, fiber and their uses.</li> </ol>

**Paper – VIII-A-2 Ethnobotany AND MEDICINAL BOTANY BOT-603 (CE)**

Month	Unit No.	Topic to be covered
NOV-2018	I	<b>Ethnobotany</b> 1. Introduction, concept, scope and objectives 2. Major and minor ethnic groups or Tribals of India, and their lifestyles. 3. Plants used by the tribal populations: a) Food plants, b) intoxicants and beverages, c) Resins and oils and miscellaneous uses.
DEC -2018	II	<b>Role of ethnobotany in modern Medicine</b> (12hrs) 1. Role of Ethnobotany in modern medicine with special example; <i>Rauwolfiaserpentina</i> , <i>Artemisia annua</i> , <i>Withaniasomnifera</i> . 2. Significance of the following plants in ethno botanical practices (along with their habitat And morphology) a) <i>Azadirachtaindica</i> , b) <i>Vitexnegundo</i> , c) <i>Ocimum sanctum</i> , d) <i>phyllanthus niruri</i> 3. Role of ethnic groups in the conservation of plant genetic resources.
JAN-2019	III	<b>Ethno botany as a tool to protect interests of ethnic groups</b> 1. Sharing of wealth concept with few examples from India. 2. Biopiracy, Intellectual Property Rights and Traditional Knowledge
FEB-2019	IV	<b>History, Scope and Importance of Medicinal Plants. Indigenous Medicinal Sciences</b> 1. Definition and Scope-Ayurveda: History, origin, panchamahabhutas, saptadhatu and tridosha concepts, Rasayana, plants used in ayurvedic treatments. 2 Homeopathy: Origin of Homeopathy medicinal systems, Basis of Homeopathy, plants used in Homeopathy medicine.
MAR-2019	V	<b>Conservation of endangered and endemic medicinal plants</b> 1. Definition: endemic and endangered medicinal plants, 2. Red list criteria 3. <i>In situ</i> conservation: sacred groves, National Parks 4. <i>Ex situ</i> conservation: Botanical Gardens.



**Paper – VIII-A-3 Pharmacognosy and Phytochemistry**

Month	Unit No.	Topic to be covered
NOV-2018	I	<p><b>Pharmacognosy</b></p> <ol style="list-style-type: none"> <li>1. Definition, Importance</li> <li>2. Classification of drugs - Chemical and Pharmacological</li> <li>3. Drug evaluation methods.</li> </ol> <p><b>Organoleptic and microscopic studies: (12hrs)</b></p> <ol style="list-style-type: none"> <li>1. Organoleptic and microscopic studies with reference to nature of active principles and common adulterants of</li> </ol>
DEC -2018	II	<ol style="list-style-type: none"> <li>2. a) <i>Adhatoda vasica</i>(leaf) b) <i>Strychnosnuxvomica</i> (seed), c)<i>Rauwolfia serpentina</i>(root) d)<i>Zinziberofficinalis</i> e)<i>Catharanthusroseus</i>.</li> </ol>
JAN-2019	III	<p><b>Secondary Metabolites:</b></p> <ol style="list-style-type: none"> <li>1. Definition of primary and secondary metabolites and their differences, Major types terpenes, Phenolics, alkaloids, terpenoids, steroids.</li> <li>2. A brief idea about extraction of alkaloids. Origin of secondary metabolites–detailed account of Mevalonate pathway, Shikimate pathway.</li> </ol>
FEB-2019	IV	<p><b>Phytochemistry</b></p> <p>ˆBiosynthesis and sources of drugs:</p> <ol style="list-style-type: none"> <li>1. Structural type biosynthesis importance of simple Phenolic compounds, coumarins, Flavonoids.</li> <li>2. Steroids, sterols: Biosynthesis, commercial importance.</li> <li>3. Alkaloids: Different groups, biosynthesis, bioactivity.</li> <li>4. Volatile oils, aromatherapy.</li> </ol>
MAR-2019	V	<p><b>Enzymes, proteins and amino acids as drugs</b></p> <ol style="list-style-type: none"> <li>1. Vaccines, toxins and toxoids, immune globulins, antiserums,</li> <li>2. Vitamins, Antibiotics – chemical nature, mode of action.</li> <li>3. Pharmacological action of plant drugs – tumor inhibitors, PAF antagonists, antioxidants, phytoestrogens and others.</li> </ol>

**DEPARTMENT OF ZOOLOGY**  
**2018-19**  
**CURRICULAR PLAN/TEACHING PLAN**  
**SEMESTER – I**

**Subject Code: Zoo-101 Title: Biology of Non – Chordates**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
JUNE-2018	I	Significance of Diversity of Invertebrates. <b>Phylum - Protozoa:</b> Type study: Elphidium. <b>Phylum - Porifera:</b> Type study: Sycon - Morphology, histology, spicules. Canal system in Sponges.
JULY - 2018	II	<b>Phylum - Coelenterate:</b> Type study :Obelia - Morphology, Structure of Polyp & Medusa. Polymorphism in Coelenterates. Coral& Coral reef formation <b>Phylum- Platyhelminthes:</b> Type study: Fasciola hepatica – Morphology, Excretory system, Reproductive system, Life history & Pathogenicity. <b>Phylum - Nematelminthes:</b> Type study: Ancylostomaduodenale - Morphology & Life history
AGU-2018	III	<b>Phylum - Annelida:</b> Type study: Hirudinaria granulose – Morphology, Digestive system, excretory system & Reproductive system. Coelomoducts. Vermiculture: Scope, Significance of Vermiculture, Earthworms Sps, Processing of Vermiculture, Vermicompost, and Economic Importance of Vermicompost.
SEP-2018	IV	<b>Phylum - Arthropoda:</b> Type study: Prawn – External characters [Except appendages], Respiratory system & Circulatory system. Peripatus : Structure & affinities. <b>Phylum – Mollusca:</b> Pearl Formation in Pelecypoda. Torsion in Gastropoda.
OCT 2018	V	<b>Phylum - Echinodermata:</b> Water vascular system of Star Fish. <b>Hemichordata :</b> Balanoglossus : Structure , Affinities. <b>Invertebrates Larval forms:</b> Amphiblastula, Ephyra, Trochophore, Nauplius, Glochidium, Bipinnaria, Tornaria.

## SEMESTER -II

Subject Code: Zoo-201 Title: Biology of Chordates YEAR:2018-19

Month	Unit No.	Topic to be covered
NOV-2018	I	. Prochordata. Structure of <i>Branchiostoma</i> Affinities of Cephalochordata Structure and Life History of <i>Herdmania</i> Significance of Retrogressive metamorphosis
DEC -2018	II	.Cyclostomata Differences between Petromyzonand <i>Myxine</i> . Pisces. <i>Scoliodon</i> - External features, Digestive System, Respiratory System, Heart, Brain. Migration in Fishes Dipnoi
JAN-2019	III	Amphibia. <i>Rana hexadactyla</i> - External features, Digestive System, Respiratory System, Heart, Brain. Parental care in Amphibians ReptiliaCalotes - External features, Digestive System, Respiratory System, Heart, Brain
FEB-2019	IV	Aves : <i>Columbalivia</i> - Exoskeleton, Digestive System, Respiratory System, Heart, Brain Migration in Birds Flight adaptations in Birds
MAR-2019	V	.Mammalia . Differences between Prototheria & Metatheria Dentition in Mammals.

**SEMESTER -III****Subject Code: ZOO301****Title: Cytology, Genetics and Evolution**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
JUNE-2018	I II	Electron microscopic structure of cell Plasma membrane - Fluid mosaic model, Transport functions of plasma membrane (Active &Passive) Stricture and functions of Endoplasmic reticulum. Stricture and functions of Golgi body. . Stricture and functions of Ribosome's. . Stricture and functions of Lysosomes.
JULY -2018	II III	Stricture and functions of Mitochondria. Chromosomes - Structure, types & functions Mendel's Laws of Inheritance. Incomplete dominance and co-dominance
AGU-2018	III IV	Lethal alleles, Epistasis Linkage and crossing over . Sex determination (Male hetero & female homogametic, female hetero & male, homogametic type, Haplo – Diploid, Genic Balance Theory, Barr bodies. IV .Sex linked inheritance (X – linked, Y – linked & XY – linked inheritance. Sex – limited and Sex influenced inheritance.) Extra chromosomal inheritance (Kappa particles in Paramecium)
SEP-2018	V	Origin of life. Hardy – Weinberg Equilibrium. . Lamarckism, Darwinism, Neo – Darwinism. Isolation. . Speciation (Allopatric and Sympatric).

## SEMESTER -IV

Subject Code: ZOO401 Title: Embryology, Physiology and Ecology YEAR: 2018-19

Month	Unit No.	Topic to be covered
NOV-2018	I	<b>Developmental Biology and Embryology</b> Gametogenesis (Spermatogenesis, Oogenesis in mammals) Fertilization Types of eggs Types of cleavages <b>Fetal membranes in Chick</b> <b>Development - types and functions of Placenta in mammals.</b>
DEC -2018	II	Elementary study of digestive process. Absorption of digested food. <b>Respiration</b> – Structure of mammalian Lung & Mechanism of respiration, transport of oxygen and carbon dioxide <b>Circulation</b> - Structure and functioning of mammalian heart, Cardiac cycle. <b>Excretion</b> - Structure of nephron, urine formation, counter current mechanism.
JAN-2019	III	Structure & functional properties of Nerve Cell; Production & propagation of nerve Impulse. Synaptic transmission. Muscle contraction - Ultra structure of muscle fibre, molecular and chemical basis of muscle Contraction. Endocrine glands - Structure, secretions and the functions (of hormones) of Pituitary Thyroid, parathyroid, adrenal glands and pancreas. Hormonal control of reproduction in Mammals.
FEB-2019	IV	Abiotic factors of Ecosystem – Temperature & Light. Nutrient cycles - Nitrogen, Carbon and Phosphorus. Energy flow in ecosystem.
MAR-2019	V	Community interactions - Mutualism, commensalism, parasitism.. Ecological succession. <b>Zoogeography</b> .Study of physical and faunal peculiarities of Oriental, Australian and Ethiopian regions.

**SEMESTER -V**

Subject Code: ZOO501 Title: Animal Biotechnology YEAR:2018-19

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
JUNE-2018	I	<p><b>Tools of Recombinant DNA technology - Enzymes and Vectors</b>  <b>Restriction modification systems</b> : : Types I, II and III- Nomenclature, Mode of action.                      Applications of Type II restriction enzymes in genetic engineering  <b>DNA modifying enzymes and their applications:</b>                      DNA polymerases, Terminal deoxynucleotidyl transferase, kinases and phosphatases, and DNA ligases  <b>Cloning Vectors:</b>                      Properties of Cloning Vectors                      Plasmid vectors: pBR and pUC 18, Bacteriophage lambda and M13 based vectors, Cosmids.                      Artificial Chromosome Vectors: BACs, YACs,</p>
JULY -2018	II	<p>Procedure of gene cloning Use of linkers and adaptors  <b>Gene delivery:</b> :Microinjection, electroporation, biolistic method (gene gun), Calcium method.  <b>PCR::</b>Basics of PCR: Definition, Principle and Procedure of PCR.  <b>DNA Sequencing:</b> Sanger's method of DNA sequencing- traditional and automated sequencing: DNA finger printing.  <b>Hybridization techniques:</b> Southern, Northern and Western blotting. <b>Genomic and cDNA libraries:</b>                      : Preparation and uses</p>
AGU-2018	III	<p><b>Cell culture media:</b> :Natural and Synthetic  <b>Types Cell cultures:</b> primary culture, secondary culture, Protocols for Primary Cell Culture Continuous cell lines , Established Cell lines (common examples such as MRC, HeLa, CHO, BHK, Vero)                      Cryopreservation of cultures. <b>Hybridoma Technology:</b>                      Cell fusion, Production of Monoclonal antibodies (mAb)                      Applications of mAb <b>Stem cells:</b> :Types of stem cells- Embryonic and Adult Stem Cell: Applications of Stem Cell Technology in Cell based therapy- Diabetes and Parkinson's diseases</p>
SEP-2018	IV	<p><b>: Reproductive Technologies &amp; Transgenic Animals</b>  <b>Manipulation of reproduction in animals::</b>Artificial Insemination, <i>In vitro</i> fertilization .: super ovulation, Embryo transfer, Embryo cloning  <b>Transgenic Animals:</b>Production of Transgenic Animals- sheep, fish</p>
OCT 2018	V	<p><b>Applied Biotechnology</b>  <b>Industry:</b> Fermentation: Different types of Fermentation. Submerged &amp; Solid state, batch, Fed batch &amp; Continuous (Short notes only)                      Downstream processing - Filtration, centrifugation, extraction, chromatography, spray drying and lyophilization Fisheries                      Polyploidy in fishes</p>

**SEMESTER -V**

Subject Code: ZOO502

Title: Animal Husbandry

YEAR:2018-19

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
JUNE-2018	I	General introduction to poultry farming. Principles of poultry housing. Poultry houses. Systemsof poultry farming. Management of chicks, growers, layers, and Broilers.
JULY -2018	II	Poultry feed management – Principles of feeding. Nutrient requirements for different stages of layers and broilers. Methods of feeding- Whole grain feeding system, Grain and mash method, All mash method, Pellet feeding. Poultry diseases – viral, bacterial, fungal and parasitic (two each); symptoms, control and management.
AGU-2018	III	Selection, care and handling of hatching eggs. Egg testing. Methods of hatching. Brooding and rearing. Sexing of chicks
SEP-2018	IV	Breeds of Dairy Cattle and Buffaloes – Definition of breed; Classification of Indian Cattlebreeds,exotic breeds and Indian buffalo breeds. Systems of inbreeding and crossbreeding. Housing of dairy animals – Selection of site for dairy farm; systems of housing – loose, housing system.Conventional dairy barn
OCT 2018	V	Care and management of dairy animals - Care and management of calf, heifer, milk animal, dry and pregnant animal, bulls and bullocks. Cleaning and sanitation of programme. Records to be maintained in a dairy farm.

## SEMESTER -VI

Subject Code: ZOO601 Title: Immunology YEAR: 2018-19

Month	Unit No.	Topic to be covered
NOV-2018	I	<b>Overview of Immune system</b> Introduction to basic concepts in Immunology. Innate and adaptive immunity <b>Cells and organs of Immune system</b> Cells of immune system Organs of immune system
DEC -2018	II	<b>Antigens:</b> Basic properties of antigens B and T cell epitopes, haptens and adjuvants Factors influencing immunogenicity
JAN-2019	III	<b>Antibodies:</b> Structure of an antibody Classes and functions of antibodies Antigen and antibody interactions. Monoclonal antibodies and their production
FEB-2019	IV	<b>Working of an Immune system:</b> Structure and functions of major histocompatibility complexes Exogenous and Endogenous pathways of antigen presentation and processing Basic properties and functions of mediator molecules. (cytokines, interferons and complement proteins). Mechanisms of humoral and cell mediated immunities
MAR-2019	V	<b>Immune system in health and disease:</b> Classification and brief description of various types of hyper sensitivities Introduction to concepts of autoimmunity and immunodeficiency <b>Vaccines:</b> General introduction to vaccines Types of vaccines



## SEMESTER -VI

Subject Code: ZOO602

Title: Principles of Aquaculture Year:2018-19

Month	Unit No.	Topic to be covered
NOV-2018	I	Introduction / Basics of Aquaculture:- Definition, Significance and History of Aquaculture Present status of Aquaculture – Global and National scenario Major cultivable species for aquaculture: freshwater, brackish water and marine. Criteria for the selection of species for culture
DEC -2018	II	<b>Types of Aquaculture :-</b> Freshwater, Brackishwater and Marine Concept of Monoculture, Polyculture, Composite culture, Monosex culture and Integrated fish farming <b>Culture systems :-</b> Ponds, Raceways, Cages, Pens, Rafts and water recirculating systems <b>Culture practices :-</b> Traditional, extensive, modified extensive, semi-intensive and intensive cultures of Fish and shrimp
JAN-2019	III	<b>Design and construction of aqua farms :-</b> Criteria for the selection of site for freshwater and brackish water pond farms, Design and construction of fish and shrimp farms <b>Seed resources :-</b> Natural seed resources and Procurement of seed for stocking: Carp and shrimp <b>Nutrition and feeds :-</b> Nutritional requirements of a cultivable fish and shellfish Natural food and Artificial feeds and their importance in fish and shrimp culture
FEB-2019	IV	<b>Management of carp culture ponds:-</b> Culture of Indian major carps: Pre-stocking management – Dewatering, drying, Predators, weeds and algal blooms and their control, Liming and Fertilization; Stocking management – Stocking density and stocking; Post-stocking Management – Feeding, water quality, growth and health care; and harvesting of ponds <b>Culture of giant freshwater prawn, <i>Macrobrachium rosenbergii</i></b>
MAR-2019	V	<b>Culture of shrimp (<i>Penaeus monodon</i> or <i>Litopenaeus vannamei</i>)</b> <b>Culture of pearl oysters</b> <b>Culture of seaweeds-</b> species cultured, culture techniques, important by-products, prospects <b>Culture of ornamental fishes –</b> Setting up and maintenance of aquarium; and breeding.

**SEMESTER -VI**

**Subject Code: ZOO603 Title: Aquaculture Management YEAR:2018-19**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
NOV-2018	I	<p><b>Breeding and Hatchery Management:-</b> Bundh Breeding and Induced breeding of carp by Hypophysation; and Use of synthetic hormones.</p> <p>Types of fish hatcheries; Hatchery management of Indian major carps</p> <p>Breeding and Hatchery management of <i>Penaeus monodon</i>/ <i>Litopenaeus vannamei</i></p> <p>Breeding and Hatchery management of giant freshwater prawn.</p>
DEC -2018	II	<p><b>Water quality Management:-</b>Water quality and soil characteristics suitable for fish and shrimp culture</p> <p>Identification of oxygen depletion problems and control mechanisms in culture ponds</p> <p>Liming materials, Organic manures and Inorganic fertilizers commonly used and Their implications in fish ponds</p>
JAN-2019	III	<p><b>Feed Management :-</b> Live Foods and their role in shrimp larval nutrition.</p> <p>Supplementary feeds: Principal foods in artificial diets; Types of feeds; Feed additives and Preservatives; role of probiotics. Feed formulation and manufacturing; Feed storage</p> <p>Feeding strategies: Feeding devices, feeding schedules and ration size; Feed evaluation- feed conversion efficiencies and ratios</p>
FEB-2019	IV	<p><b>Disease Management :-</b> Principles of disease diagnosis and health management;</p> <p>Prophylaxis, Hygiene and Therapy of fish diseases</p> <p>Specific and non-specific defense systems in fish; Fish immunization and Vaccination</p> <p>Etiology, Symptoms, prophylaxis and therapy of common fish diseases in fish ponds</p> <p>Etiology, Symptoms, prophylaxis and therapy of common shrimp diseases in shrimp ponds</p>
MAR-2019	V	<p><b>Economics and Marketing :-</b> Principles of aquaculture economics – variable costs, cost-benefit analysis , Fish marketing methods in India; Basic concepts in demand and price analysis.</p> <p><b>5.2 Fisheries Extension :</b>Fisheries Training and Education in India; Role of extension in communitydevelopment.</p> <p><b>5.3 Fish Genetics</b> Genetic improvement of fish stocks – Hybridization of fish. Gynogenesis,Androgenesis, Polyploidy, Transgenic fish, Cryopreservation of gametes,</p>

**SEMESTER -VI**

Subject Code: ZOO604 Title: Postharvest Technology Year: 2018-19

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
NOV-2018	I	<b>Handling and Principles of fish Preservation :-</b> Handling of fresh fish, storage and transport of fresh fish, post mortem changes (Rigor mortis and spoilage), spoilage in marine fish and freshwater fish. Principles of preservation– cleaning, lowering of temperature, rising of temperature, use of salt, use of fish preservatives, exposure to low radiation
DEC -2018	II	<b>Methods of fish Preservation :-</b> Traditional methods - sun drying, salt curing, pickling and smoking. Advanced methods – chilling or icing, refrigerated sea water, freezing, canning, Irradiation and Accelerated Freeze drying (AFD).
JAN-2019	III	<b>Processing and preservation of fish and fish by-products :-</b> Fish products – fish minced meat, fish meal, fish oil, fish liquid (ensilage), fishprotein concentrate, fish chowder, fish cake, fish sauce, fish salads, fish powder, petfood from trash fish, fish manure. Fish by-products – fish glue, ising glass, chitosan, pearl essence, shark fins, fishleather and fish maws. <b>Seaweed Products :-</b> Preparation of agar, algin and carrageen. Use of seaweeds as food for human consumption.
FEB-2019	IV	<b>Sanitation and Quality control :-</b> Sanitation in processing plants - Environmental hygiene and Personal hygiene inprocessing plants. Quality Control of fish and fishery products – pre-processing control, control duringprocessing and control after processing. Regulatory affairs in industries
MAR-2019	V	<b>Quality Assurance, Management and Certification :-</b> Seafood Quality Assurance and Systems: Good Manufacturing Practices (GMPs); GoodLaboratory Practices (GLPs); Standard Operating Procedures (SOPs); Concept ofHazard Analysis and Critical Control Points (HACCP) in seafood safety. National and International standards – ISO 9000: 2000 Series of Quality Assurance System.

**A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYURU**  
**DEPARTMENT OF TELUGU**  
**SEMESTER – I**  
**2019-2020 CURRICULAR PLAN**

Subject Code: **TEL – 101C** Title: **GENERAL TELUGU**

Month	Unit No.	Topic to be covered
Jun – '19	I	గంగా శంతనుల కథ
Jul – '19	II	గంగా శంతనుల కథ, కన్యక
Aug – '19	III	ద్రౌపది పరిదేవనం, దేశ చరిత్రలు, సంస్కృత సందులు
Sep – '19	IV	చింతలతొప్పు సావుకూడు తెలుగు సందులు, సమాసాలు
Oct – '19	V	దోషసవరణలు, పున:శ్చరణ

**SEMESTER – III**

**2019-2020 CURRICULAR PLAN**

Subject Code: **TEL – 301C** Title: **GENERAL TELUGU**

Month	Unit No.	Topic to be covered
Jun – '19	I	వామనావతారము
Jul – '19	II	హరిజన శతకము థెలుగు భాష
Aug – '19	III	శాలివాహన విజయము మనిషి
Sep – '19	IV	వ్యక్తిత్వ వికాసము ఛందస్సు, అలంకారములు
Oct – '19	V	పున:శ్చరణ

**SEMESTER – II**  
**2019-20 CURRICULAR PLAN**

Subject Code: **TEL - 201C**

Title: **GENERAL TELUGU**

Month	Unit No.	Topic to be covered
Nov – '19	I	నీతి పద్యాలు సాయుజ్యం
Dec- '19	II	ఆకలి ముసాఫరులు నమ్ముకున్న నేల
Jan -20	III	సుభద్రా పరిణయం మేఘదూతము
Feb -20	IV	బతుకాట నవల
Mar - 20	V	పున:శ్చరణ

**SEMESTER – IV**  
**2019 -2020 CURRICULAR PLAN**

Subject Code: **LEP - 401C**

Title: **LEADER SHIP EDUCATION**

Month	Unit No.	Topic to be covered
Nov – 17	I	వ్యవస్థ నాయకత్వం
Dec- 17	II	నిర్వహణ వ్యక్తిత్వ వికాసం, ప్రేరణ
Jan -18	III	సమాచార వ్యవస్థ వ్యక్తుల పరస్పర సంబంధాలు
Feb -18	IV	గ్రూపు నిర్ణయాకరణ సంఘర్షణ
Mar - 18	V	జట్టు, వివిధ రకాల జట్లు పున:శ్చరణ

**ACADEMIC YEAR 2019-2020**  
**SEMESTER – I**  
**CURRICULAR PLAN FOR ODD SEMESTER**

Subject Code: HIN 101C

Title: GENERAL HINDI – I

Month	Unit No.	Topic to be covered
June-'19	I IV	5. साहित्यकीमहत्ता 6. व्याकरण
July-'19	I II III	2.सच्चीवीरता 1.मुक्तिधन अनुवाद
Aug-'19	II	2.गूदडसाई 3.उसनेकहाथा
Sept-'19	I IV	मित्रता व्याकरण
Oct-'19	V	पत्रलेखन

**SEMESTER – III**  
**CURRICULAR PLAN FOR ODD SEMESTER**

Subject Code: HIN 301C

Title : GENERAL HINDI – III

Month	Unit No.	Topic to be covered
June-'19	I IV	साखी बालवर्णन मातृभूमि अनुवाद
July-'19	I II	तोडतीपत्थर हिन्दीसाहित्यकाइतिहास भक्तिकाल: ज्ञानज्ञानाश्रयीशाखा
Aug-'19	I III	मातृभाषा के प्रति सामान्य निबंध: सामाचारपत्र, कंप्यूटर, पर्यावरण और प्रदूषण
Sept-'19	II IV	भक्तिकाल: प्रेमाश्रयीशाखा अनुवाद
Oct-'19	III V	बेकारीकीसमस्या परिपत्र ज्ञापन राष्ट्रभाषाहिन्दी

**ACADEMIC YEAR 2019-2020**  
**CURRICULAR PLAN FOR EVEN SEMESTER**  
**Subject Code: HIN 201C**                      **Title: GENERAL HINDI-II**

Month	Unit No.	Topic to be covered
Nov -'19	I II IV	संकृति और साहित्य का परस्पर संबंध जरिया संधिविच्छेद
Dec-'19	I II III	भारतएकहै भूखहड़ताल अनुवाद
Jan-'20	I II III	एचआईवी/एड्स परमात्माकाकुत्ता अनुवाद
Feb-'20	IV V	वाक्यप्रयोग पत्रलेखन
Mar-'20	Revision to all units	

# DEPARTMENT OF ENGLISH

ACADEMIC YEAR 2019-2020

SEMESTER – I

## CURRICULAR PLAN

Subject Code: ENG 101C

Title: GENERAL ENGLISH – I

Month	Unit No.	Topic to be covered
June-‘19	II	The Road Not Taken
	V	Phonetic Transcription, Problematic Sounds in English, Pronunciation (Sound)
July-‘19	I	The Language of African Literature
	IV	The Merchant of Venice
	V	Exercises in Articles and Prepositions
Aug-‘19	I	The Knowledge Society
	II	Night of the Scorpion
	III	Two Children
	V	Exercises in Tenses
Sept-‘19	III	What Men Live By
	V	Vocabulary(spelling), Sense (meaning)and Syntax
Oct-‘19	V	Exercises in Tenses
		Revision

## SEMESTER – III

## CURRICULAR PLAN

Subject Code: ENG 301C

Title : GENERAL ENGLISH – II

Month	Unit No.	Topic to be covered
June-‘19	I	Shyness My Shield
	II	Once Upon A Time
	V	Expansion of an idea/a saying/a proverb
July-‘19	I	Aurangzeb’s Letter To His Teacher
	II	Our Casuarina Tree
	V	JAM Sessions, Information Transfer
Aug-‘19	I	A Letter from Abraham Lincoln To His Son’s Teacher
	III	The Open Window
	V	Note Taking. Brain Storming the topic through Diagram
Sept-‘19	III	The Beloved Charioteer
	IV	Kanyasulkam
	V	Reporting for the Media
Oct-‘19	V	Note Making, Writing for the Media Describing a Picture
		Revision

## SEMESTER – III

## CURRICULAR PLAN

Subject Code: CSS 301C

Title : COMMUNICATION AND SOFT SKILLS – II

Month	Unit No.	Topic to be covered
June-‘19	I	Pronunciation – 1 : The Sounds of English
	II	Pronunciation – 2 : Word Accent
July-‘19	II	Pronunciation - 2 : Intonation
	III	Speaking Skills – 1: Conversation Skills
		Interview Skills
		Presentation Skills
Aug-‘19	IV	Speaking Skills – 2 : Role Play
		Debate
		Group Discussion
Sept-‘19	V	Writing Skills : Spelling
		Punctuation
		Report Writing
Oct-‘19		Revision



**ACADEMIC YEAR 2019-2020****II SEMESTER****CURRICULAR PLAN****Subject Code: ENG 201C****Title: GENERAL ENGLISH – I**

Month	Unit No.	Topic to be covered
Nov -'19	I	My Struggle for an Education
	II	Ode to Autumn
	III	The Boy Who Broke the Bank
	IV	Question Tags
Dec-'19	I	The Scientific Point of View
	II	I am Not That Woman
	IV	The Proposal
	V	Transformation of Sentences – Voice, Speech, Degrees of Comparison
Jan-'20	I	Pride, awkwardness and a dangerous accident in Chalisgaon (An Excerpt from his Autobiographical life story 'Waiting for a Visa')
	III	Half A Rupee Worth
	V	Transformation of Sentences – Simple, Compound & Complex, Dialogue Practice(oral), Listening Comprehension
	V	Practice(oral), Listening Comprehension
Feb-'20	V	Guided Composition
	V	Dialogue Writing
	V	Reading Comprehension
Mar-'20	Revision to all units	

**Subject Code: CSS-201C****TITLE : COMMUNICATION AND SOFT SKILLS - I**

Month	Unit No.	Topic to be covered
Nov -'19	I	Vocabulary Building – Prefixes & Suffixes, One-Word Substitutes, Synonyms & Antonyms
	IV	The Importance of Listening
Dec-'19	I	Conversion, Compounding, Words often confused
	II	Subject-Verb Agreement
	III	Meanings of Modals
	IV	Types of Listening, Barriers to Effective Listening
Jan-'20	I	Analogy, Phrasal Verbs
	III	Common Errors
	V	Reading Skills - Skimming & Scanning
Feb-'20	IV	Strategies for Effective Listening
	V	Intensive Reading & Extensive Reading, Comprehension (Reading)
Mar-'20	Revision to all units	

**Subject Code: CSS 401C****Title : COMMUNICATION AND SOFT SKILLS – III**

Month	Unit No.	Topic to be covered
Nov -'19	I	Soft Skills – Positive Attitude, Body Language
	IV	Letter Writing
	V	Resume & Curriculum Vitae
Dec-'19	I	Emotional Intelligence, SWOT/C Analysis
	II	Paragraph Writing – Paragraph Structure, Development of Ideas, Matching Para Jumbles
Jan-'20	I	Emotional Intelligence, Netiquette
	III	Paraphrasing – Elements of Effective Paraphrasing, Techniques for Paraphrasing
Feb-'20	III	Summarizing – What makes a good summary? Stages of Summarizing
	IV	E-Correspondence
	V	Dialogue Writing
Mar-'20	Revision to all units	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**  
**DEPARTMENT OF HISTORY**  
**SEMESTER – I**

**CURRICULAR PLAN**

Subject Code: HIST11B Title: Ancient Indian history and culture (From Indus valley Civil  
to 13 century(A.D))

Month	Unit No.	Topic to be covered	Remarks
<b>JUN-19</b>	<b>I</b>	Ancient Indian Civilization (from Circa 3000 BC to 6 <sup>th</sup> BC):	
<b>JULY-19</b>	<b>II</b>	Ancient Indian History & Culture (6 <sup>th</sup> Century BC to 2 <sup>nd</sup> Century AD):	
<b>AUG-2019</b>	<b>III</b>	History & Culture of South India (2nd Century BC to 8 <sup>th</sup> Century AD):	
<b>SEP-2019</b>	<b>IV</b>	India from 3 <sup>rd</sup> century AD to 8 <sup>th</sup> century AD:	
<b>OCT-2019</b>	<b>V</b>	History and Culture of South India (9 <sup>th</sup> century AD to 13 <sup>th</sup> century AD):	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**  
**DEPARTMENT OF HISTORY**  
**SEMESTER – III**  
**CURRICULAR PLAN**

Subject Code: HIS301C Title : MODERN INDIAN HISTORY & CULTURE (1764-1947 A. D)

Month	Unit No.	Topic to be covered	Remarks
<b>JUN-19</b>	<b>I</b>	Policies of Expansion	
<b>JULY-19</b>	<b>II</b>	Social, Religious & Self-Respect Movements	
<b>AUG-2019</b>	<b>III</b>	Causes for the growth of Nationalism	
<b>SEP-2019</b>	<b>IV</b>	Freedom Struggle from 1920 to 1947:	
<b>OCT-2019</b>	<b>V</b>	Muslim League & the Growth of Communalism	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU  
DEPARTMENT OF HISTORY**

**SEMESTER – V**

**CURRICULAR PLAN**

Subject Code: HIS501C Titles: Age of Rationalism and Humanism –The World Between  
15th& 18th Century

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>JUN-19</b>	<b>I</b>	Feudalism -Geographical Discoveries:	
<b>JULY-19</b>	<b>II</b>	The Renaissance Movement	
<b>AUG-2019</b>	<b>III</b>	Emergence of Nation States	
<b>SEP-2019</b>	<b>IV</b>	Age of Revolutions AMERICA Revolution	
<b>OCT-2019</b>	<b>V</b>	Age of Revolutions: The French Revolution	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU  
DEPARTMENT OF HISTORY**

**SEMESTER – V**

**CURRICULAR PLAN**

Subject Code: HIS502C Titles: History & Culture of Andhra Desa (from 12th to 19th  
Century A.D)

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>JUN-19</b>	<b>I</b>	Andhra during 12th& 13th Centuries A.D	
<b>JULY-19</b>	<b>II</b>	Andhra between 14th & 16th Centuries A.D	
<b>AUG-2019</b>	<b>III</b>	Andhra through 16th& 17th Centuries A.D	
<b>SEP-2019</b>	<b>IV</b>	The 18th& 19th Centuries in Andhra	
<b>OCT-2019</b>	<b>V</b>	Impact of Company Rule on Andhra	

**DEPARTMENT OF HISTORY**

**SEMESTER – II  
CURRICULAR PLAN**

Subject Code: HIST21 Title: Medieval Indian history and Culture(1206 A.D to 1764 A.D)

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>NOV-19</b>	<b>I</b>	Impact of Turkish Invasions	
<b>DEC-19</b>	<b>II</b>	Impact of Islam on Indian Society and Culture	
<b>JAN-2020</b>	<b>III</b>	Emergence of Mughal Empire	
<b>FEB-2020</b>	<b>IV</b>	Administration, Economy, Society	
<b>MAR-2020</b>	<b>V</b>	India under Colonial Hegemony	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE,  
VUYYURU**

**DEPARTMENT OF HISTORY**

**SEMESTER – IV  
CURRICULAR PLAN**

Subject Code: HIST401 Title: HISTORY & CULTURE OF ANDHRA (FROM 1512 TO 1956 AD)

<b>MONTH</b>	<b>UNIT NO.</b>	<b>TOPIC TO BE COVERED</b>	<b>REMARKS</b>
<b>NOV-19</b>	<b>I</b>	1.1-Andhra through 16th& 19th Centuries AD:	
<b>DEC-19</b>	<b>II</b>	Andhra under British rule: Administration	
<b>JAN-2020</b>	<b>III IV</b>	Social Reform & New Literary Movements Freedom Movement in Andhra (1885-1947):	
<b>FEB-2020</b>	<b>V</b>	Movement for separate Andhra State	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE,  
VUYYURU  
DEPARTMENT OF HISTORY  
SEMESTER – IV  
CURRICULAR PLAN**

**Subject Code: HIS401C Title: HISTORY OF MODERN WORLD (From 15th Cent. AD to 1945 AD)**

<b>MONTH</b>	<b>UNIT NO.</b>	<b>TOPIC TO BE COVERED</b>	<b>REMARKS</b>
<b>NOV-19</b>	<b>I</b>	Transformation from Medieval to Modern Era	
<b>DEC-19</b>	<b>II</b>	American Revolution (1776); French Revolution (1789)	
<b>JAN-2020</b>	<b>III IV</b>	Unification of Italy; Unification of Germany Communist Revolution in Russia	
<b>FEB-2020</b>	<b>V</b>	World War II: Causes Fascism & Nazism	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE,  
VUYYURU  
DEPARTMENT OF HISTORY  
SEMESTER – VI  
CURRICULAR PLAN**

**Subject Code: HIS601GE Title: History of Modern Europe (from 19th Century to 1945 A.D)**

<b>MONTH</b>	<b>UNIT NO.</b>	<b>TOPIC TO BE COVERED</b>	<b>REMARKS</b>
<b>NOV-19</b>	<b>I</b>	Industrial Revolution: Origin, Nature and Impact	
<b>DEC-19</b>	<b>II</b>	Unification Movements in Italy & Germany and their Impact.	
<b>JAN-2020</b>	<b>III IV</b>	Communist Revolution in Russia World War I:	
<b>FEB-2020</b>	<b>V</b>	World War II	

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE (AUTONOMOUS)  
VUYYURU - 521 165 - (2019 - 2020)**

**SEMESTER - I  
DSC 3A -Business Economics-I**

**IB.COM GENERAL**

**No. of Hours per week: 5**

**No. of Credits: 4**

Max.Marks:100

<b>Unit</b>	<b>Learning Units</b>	<b>MONTHS</b>
I	<b>Introduction</b> Meaning and Definitions of Business Economics - Nature and scope of Business Economics- Micro and Macro Economics and their differences.	<b>JUN-19</b>
II	<b>Demand Analysis</b> Meaning and Definition of Demand - Determinants of Demand -- Demand function – Law of demand- Demand Curve - Exceptions to Law of Demand.	<b>JULY-19</b>
III	<b>Elasticity of Demand</b> Meaning and Definition of Elasticity of Demand – Types of Elasticity of Demand – Measurements of Price elasticity of demand – Total outlay Method – Point Method – Arc Method.	<b>AUG-2019</b>
IV	<b>Cost and Revenue Analysis</b> Classification of Costs – Total - Average – Marginal and Cost function – Long-run – Short-run – Total Revenue - Average revenue – Marginal Revenue.	<b>SEP-2019</b>
V	<b>Break-Even Analysis</b> Type of Costs – Fixed Cost – Semi-variable Cost – Variable Cost– Cost behaviour - Breakeven Analysis - Its Uses and limitations.	<b>OCT-2019</b>

**A.G & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE (AUTONOMOUS)**  
**VUYYURU – 521 165**

**I BA PROGRAMME - ECONOMICS SYLLABUS FOR THE YEAR**  
**(CBCS PATTERN)**  
**FIRST YEAR BA – FIRST SEMESTER (CORE PAPER)**

**TITLE: MICRO ECONOMICS -1**

No. of hours per week: 5

Credits: 4

<b>Unit</b>	<b>Learning Units</b>	<b>MONTHS</b>
I	Nature, Definition and Scope of economics –Wealth, welfare, Scarcity and modern definitions	<b>JUN-19</b>
II	Methodology in economics-Micro and Macro, Static and Dynamic analysis; Normative and Positive science, Inductive and Deductive methods ; Partial and General Equilibrium	<b>JULY-19</b>
III	Utility analysis :- Cardinal approach –The Law of Diminishing marginal utility-the Law of Equi-marginal utility-concept of consumer's surplus	<b>AUG-2019</b>
IV	Demand analysis – Law of Demand – Elasticity of Demand – Measurement of elasticity of demand-Price, Income and Cross elasticities of Demand	<b>SEP-2019</b>
V	Ordinal approaches; Indifference curve analysis – Properties of Indifference curves – Price or Budget line - Equilibrium of the consumer with the help of Indifference curves - samuelson's revealed preference theory.	<b>OCT-2019</b>

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS), VUYYURU**

**B. A. ECONOMICS**

**II Year B. A. Programme (UG) Courses – Under**

**CBCS Semester – III**

**Paper – III (Core Paper) (5Hours)**

**Macro Economics - National Income, Employment and Money**

<b>Unit</b>	<b>Learning Units</b>	<b>MONTHS</b>
I	Meaning, definition of Macro Economics - Importance of Macro Economics- Difference  between Micro and Macro Economics - Paradox of Macro Economics - Limitations	<b>JUN-19</b>
II	National Income - Definitions, Concepts of National Income - Measurement of  National Income- Circular flow of Income in Two, Three and Four Sector  Economy.	<b>JULY-19</b>
III	Classical theory of Employment - Say's Law of Markets.	<b>AUG-2019</b>
IV	Keynesian Theory of Employment - Consumption function – Investment Function -  Marginal Efficiency of Capital (MEC)- Concepts of multiplier and accelerator	<b>SEP-2019</b>
V	Meaning and Functions of Money - Classification of money - Gresham's Law - RBI  classification of Money. Theories of Money - Fisher's Quantity theory of Money  Cambridge approach (Marshall, Pigou, Robertson & Keynes).	<b>OCT-2019</b>



**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS), VUYYURU**

**Final year BA Economics Syllabus Semester Paper – V**

**ECONOMIC DEVELOPMENT AND INDIAN ECONOMY – Semester –V**

**Weekly 5 Hours,**

**Credits - 4**

**PAPER CODE: ECO-501**

<b>Unit</b>	<b>Learning Units</b>	<b>MONTHS</b>
I	Concept of Economic Growth - Distinction between economic growth and development - Measurement of economic development -Theories of Economic Growth: Adam Smith, Rostow, Karl Marx and Harrod&Domar Models.	<b>JUN-19</b>
II	Sustainable development - Balanced and unbalanced growth-choice of techniques Labour intensive and capital intensive methods.	<b>JULY-19</b>
III	. Basic features of the Indian Economy - Natural Resources - Important Demographic features- Concept of Population Dividend - Population Policy.	<b>AUG-2019</b>
IV	National Income in India - trends and composition-poverty, inequalities and Unemployment - Measures taken by the Government. - MGNREGS	<b>SEP-2019</b>
V	Economic reforms - liberalization, privatization and globalisation - concept of inclusive growth.	<b>OCT-2019</b>

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS), VUYYURU**

**Final year BA Economics Syllabus Paper – V**

**INDIAN AND ANDHRAPRADESH ECONOMY – Semester –V**

**Weekly 5 Hours,**

**Paper Code : ECO-502**

**Credits - 4**

**Semester-5**

**Indian and Andhra Pradesh Economy**

**Syllabus**

<b>Unit</b>	<b>Learning Units</b>	<b>MONTHS</b>
I	Indian Agriculture - Importance of Agriculture in India - Agrarian structure and relations- Factors determining Productivity- Agricultural Infrastructure - Rural credit - Micro Finance - Self Help Groups (SHGs) - Agricultural Price policy- concept of Crop Insurance - Food Security.	<b>JUN-19</b>
II	Structure and growth of Indian Industry - Industrial policies of 1956 & 1991 Meaning of Micro small and Medium Enterprises (MSMEs)- Problems and Prospects of small scale Industries in India.	<b>JULY-19</b>
III	Disinvestment in India - FEMA - Foreign direct investment - Services Sector in India – Reforms in Banking and Insurance -, IT, Education and Health.	<b>AUG-2019</b>
IV	Planning in India Economy - Objectives of Five year plans - Review of Five year Plans - Current Five year plan- NITI Aayog	<b>SEP-2019</b>
V	Andhra Pradesh Economy - Population - GSDP - Sector Contribution and trends - IT – Small Scale Industry - SEZs.	<b>OCT-2019</b>

EVEN

Accredited with “A” Grade by NAAC, Bengaluru

I Year B. A. Programme (UG) Courses – Under CBCS

Semester – II. HOURS: 5 CREDITS: 4

Paper – II (Core Paper) **Micro Economics - Production and Price Theory**

<b>Unit</b>	<b>Learning Units</b>	<b>MONTHS</b>
I	Production function-Concept of homogeneous production function-Cobb- Douglas Production function- Law of variable proportions-Law of Returns to Scale - Different Concepts of Costs – Explicit & Implicit, Opportunity, Total – fixed and Variable Costs, Marginal & Average Costs & its Relationship. Concept of Revenue – Total, Marginal & Average Revenue and Break – Even Point	<b>NOV-19</b>
II	Analyse different types of Market structures - Perfect Competition - Price determination and equilibrium of firm and industry under perfect competition - Monopoly - Price determination - Price discrimination.	<b>DEC-19</b>
III	Monopolistic competition - price determination - Oligopoly - Kinked demand curve approach.	<b>JAN-2020</b>
IV	Marginal Productivity theory of distribution - Theories of wage determination Subsistence theory of wages, Standard of living theory of wages, Modern theory of wages Wages and collective bargaining - concept of minimum wage.	<b>FEB-2020</b>
V	Theory of Rent: Ricardian theory of rent - Quasi rent concept of Alfred Marshall. Theories of Interest - Classical, Neo-classical and Keynes Liquidity Preference theory - Profit - dynamic, innovations, Risk and Uncertainty theories	<b>MAR-2020</b>

A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE

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IB.COM GENERAL ----- SEMESTER - II

DSC 3 B - Business Economics –II----- (CBE 203G)

No. of Hours per week: 5

Max.Marks:100

No. of Credits: 4

<b>Unit</b>	<b>Learning Units</b>	<b>MONTHS</b>
I	<u>Production and Costs</u> : Techniques of Maximization of output, Minimization of costs and Maximization of profit - Scale of production - Economies and Dis-economies of Scale - Costs of Production – Cobb-Douglas Production Function.	<b>NOV-19</b>
II	<u>Market Structure-I</u> : Concept of Market - Market structure - Characteristics - Perfect competition -characteristics equilibrium price - profit maximizing output in the short and long run Monopoly-characteristics - Profit maximizing out-put in the short and long run - Defects of Monopoly – Distinction between Perfect competition and Monopoly.	<b>DEC-19</b>
III	<u>Market Structure-II</u> : Monopolistic Competition - Characteristics – Product differentiation - Profit maximization - Price and output in the short and long - run – Oligopoly - characteristics - Price rigidity - Kinked Demand Curve - Distribution - Concepts - Marginal Productivity - Theory of Distribution.	<b>JAN-2020</b>
IV	<u>National Income And Economic Systems</u> : National Income - Definition Measurement - GDP - Meaning Fiscal deficit - Economic systems - Socialism - Mixed Economic System - Free Market economy	<b>FEB-2020</b>
V	<u>Structural Reforms</u> : Concepts of Economic liberalization, Privatization, Globalization - WTO Objectives Agreements - Functions - Trade cycles - Meaning - Phases - Benefits of International Trade - Balance of Trade and Balance of payments.	<b>MAR-2020</b>

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**

**( AUTONOMOUS), VUYURU – 521165 -**

**Accredited with “A” Grade by NAAC, Bengaluru**

**DSC 2 B -Business Economics**

**I B.Com (Computers) ---- II SEMESTER (2018 – 2019)**

**w.e.f. 2015-16 (Revised in April, 2016)**

**No. of Hours per week: 5**

**Max.Marks:100**

**No. of Credits: 4**

<b>Unit</b>	<b>Learning Units</b>	<b>MONTHS</b>
<b>I</b>	Meaning and Definitions of Business Economics - Nature and scope of Business Economics- Micro and Macro Economics and their Interface.	<b>NOV-19</b>
<b>II</b>	<b>Demand Analysis:</b> Definition - Determinants of Demand -- Demand function – Law of demand- Demand Curve - Exceptions to Law of Demand - Elasticity of Demand – Types of Elasticity of Demand – Measurements of Price elasticity of Demand :	<b>DEC-19</b>
<b>III</b>	<b>Demand Analysis:</b> Definition - Determinants of Demand -- Demand function – Law of demand- Demand Curve - Exceptions to Law of Demand - Elasticity of Demand – Types of Elasticity of Demand – Measurements of Price elasticity of Demand :	<b>JAN-2020</b>
<b>IV</b>	<b>Market Structure:</b> Concept of Market - Market structure - Perfect competition - characteristics - equilibrium price - Monopoly- characteristics - Defects of Monopoly – Distinction between Perfect competition and Monopoly - Monopolistic Competition – Characteristics-Product differentiation - Oligopoly - characteristics - Price rigidity.	<b>FEB-2020</b>
<b>V</b>	<b>National Income And Economic Systems:</b> National Income - Measurement - GDP -Growth Rates - Problems in Assessment - Economic Systems - Socialism - Mixed Economic System - Free Market Economy -	<b>MAR-2020</b>

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**

**( AUTONOMOUS), VUYYURU – 521165 -**

**Accredited with “A” Grade by NAAC, Bengaluru**

**B. A. ECONOMICS**

**II Year B. A. Programme (UG) Courses – Under CBCS**

**Semester – IV**

**Paper – IV (Core Paper)**

**Banking and International Trade**

<b>Unit</b>	<b>Learning Units</b>	<b>MONTHS</b>
<b>I</b>	Trade Cycles - meaning and definition - Phases of a Trade Cycle - Inflation - definition - types of inflation - causes and effects of inflation measures to control inflation.	<b>NOV-19</b>
<b>II</b>	Banking: Meaning and definition -Functions of Commercial Banks - Concept of Credit creation-Functions of RBI - Recent developments in banking sectors.	<b>DEC-19</b>
<b>III</b>	Non-Bank Financial Institutions – Types of NBFIs - Factors contributing to the Growth of NBFIs –Money market – Defects of Indian money market	<b>JAN-2020</b>
<b>IV</b>	Concepts of Shares-Debentures - Stock Market - Functions - Primary and Secondary Markets -SEBI - - Insurance - Life Insurance and General Insurance.	<b>FEB-2020</b>
<b>V</b>	Macro Economic Policy - Fiscal, Monetary and Exchange rate policies  Objectives and Significance - Importance of International Trade - Regional and International Trade – Defining Balance of Trade and Balance of Payment.	<b>MAR-2020</b>

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE (AUTONOMOUS),**

**VUYYURU**

**B. A. ECONOMICS**

**III Year B. A. Programme (UG) Courses – Under CBCS**

**Semester – VI**

**Paper – VII-(A) (Elective Paper VII-(A))**

**AGRICULTURAL ECONOMICS**

<b>Unit</b>	<b>Learning Units</b>	<b>MONTHS</b>
<b>I</b>	Nature and Scope of Agricultural Economics. Factors affecting agricultural development: technological, institutional and general. Interdependence between agriculture and industry.	<b>NOV-19</b>
<b>II</b>	Concept of production function : input-output and product relationship in farm production.	<b>DEC-19</b>
<b>III</b>	Growth and productivity trends in Indian agriculture with special reference to Andhra Pradesh. Agrarian reforms and their role in economic development.	<b>JAN-2020</b>
<b>IV</b>	Systems of farming, farm size and productivity relationship in Indian agriculture with special reference to Andhra Pradesh- New agriculture strategy and Green revolution : and its Impact	<b>FEB-2020</b>
<b>V</b>	Emerging trends in production, processing, marketing and exports; policy controls and regulations relating to industrial sector with specific reference to agro-industries in agribusiness enterprises	<b>MAR-2020</b>

**AG & SG Siddhartha Degree College of Arts & Science,  
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Krishna Dt., A.P. (An Autonomous College in the Jurisdiction of Krishna University)

**Semester wise Academic Plan & Fulfilment Record**

NAME OF DEPARTMENT : POLITICAL SCIENCE

Academic Year : 2019-20

Name of lecturer :

Dr. G.Veeraraju

Semester: I

Class : I B.A

Paper Title :

Basic Concepts of Political Science

Paper Code : POL – 101C

Month	Planned (Unit No. & Chapter Title)	Fulfilled (Unit No. & Chapter Title)	Remarks
<b>Jun-17</b>	Unit-I - Nature scope and significance of Political science Unit-II- Social contract theories-Hobbs, lock and Rousseau, evolution divine theories of origin of the state	Fulfilled	
<b>Jul-17</b>	Unit-III - Sovereignty meaning, definition, features, kinds and characters. Austrian Pluralistic theories	Fulfilled	
<b>Aug-17</b>	Unit-IV- Law ,Liberty, equality meaning definitions features, kinds, sources, of concepts	Fulfilled	
<b>Sep-17</b>	Unit-V - Rights and classification of rights, theories of rights, legal and natural rights.	Fulfilled	
<b>Oct-17</b>	Unit-V- Civil rights, Political rights fundamental rights	Fulfilled	



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Krishna Dt., A.P. (An Autonomous College in the Jurisdiction of Krishna University)

**Semester wise Academic Plan & Fulfilment Record**

NAME OF THE DEPARTMENT: POLITICAL SCIENCE

Academic

Year :

2019-20

SEMESTER

III

:

Name of  
the

Class:

II B.A

Lecturer : Dr.G.Veeraraju

Paper

INDIAN CONSTITUTION

Paper Code:

POL-  
301C

Title :

Month	Planned (Unit No. & Chapter Title)	Fulfilled (Unit No. & Chapter Title)	Remarks
Jun-17	Unit-I- constitutional assembly-composition Indian constitution features	Fulfilled	
Jul-17	Unit-II- Preamble fundamental rights ,Fundamental duties, Directive principles of state policy, differences between fundamental rights and DPSP	Fulfilled	
Aug-17	Unit-III- Union Executive- President election method , P.m. powers and functions, Parliament powers and functions, Union council of ministers, Parliamentary commits	Fulfilled	
Sep-17	Unit-IV- Unitary and federal system , central and state relation Unit-V- Supreme court of India, powers functions, judicial review	Fulfilled	
Oct-17	Revision	Fulfilled	

**AG & SG Siddhartha Degree College of Arts & Science,  
(Autonomous) Vuyyuru - 521 165.**

Krishna Dt., A.P. (An Autonomous College in the Jurisdiction of Krishna University)

Semester wise Academic Plan & fulfilment Record

NAME OF THE DEPARTMENT: POLITICAL SCIENCE

Academic

Year :

2019-20

Name of  
the

Dr.G.Veeraraju

Lecturer :

Paper

Title :

INDIAN POLITICAL THOUGHT

SEMESTER

V

Class: III B.A

Paper Code: POL-501C

Month	Planned (Unit No. & Chapter Title)	Fulfilled (Unit No. & Chapter Title)	Remarks
<b>Jun-17</b>	Unit-I- Manu Varna system, Manu Dharma Veda -four Vedas	Fulfilled	
<b>Jul-17</b>	Unit-II- koutilya theory of Saptanga, mandala katheories, Koutilya political ideas of state kingship, Gandhi non-violence satya graha theory of trusteeship	Fulfilled	
<b>Aug-17</b>	Unit-III- Joythirao phule social ideas, Nehru democratic socialism, Ambedkar social movements	Fulfilled	
<b>Sep-17</b>	Unit-IV- M.N.Roy radical humanism, Jayaprakash Narayana revolution, sarvodaya	Fulfilled	
<b>Oct-17</b>	Revision	Fulfilled	

**AG & SG Siddhartha Degree College of Arts & Science,  
(Autonomous) Vuyyuru - 521 165.**

Krishna Dt., A.P. (An Autonomous College in the Jurisdiction of Krishna University)

Semester wise Academic Plan & fulfilment Record

NAME OF THE DEPARTMENT: POLITICAL SCIENCE

Academic

Year :

2019-20

Name of  
the

Dr.G.Veeraraju

Lecturer :

Paper

Title :

WESTERN POLITICAL THOUGHT

SEMESTER

V

Class: III B.A

Paper Code:

POL-  
502C

Month	Planned (Unit No. & Chapter Title)	Fulfilled (Unit No. & Chapter Title)	Remarks
<b>Jun-17</b>	Unit-I- plato-Ideal state, theory of justice, educational system, philosophers of kings, communism	Fulfilled	
<b>Jul-17</b>	Unit-II- Aristotle- ideal state, theory of revolutions classification of governments, slaves system	Fulfilled	
<b>Aug-17</b>	Unit-III-Machiavelli-Advice to the prince, political ideas, hobbies, social contract theory , political ideas	Fulfilled	
<b>Sep-17</b>	Unit-III- John lock-social contract theory, political ideas , natural rights, Rousseau, social contract theory general wing, popular sovereignty	Fulfilled	
<b>Oct-17</b>	Unit-IV- Hegel civil society state Karl marks theory of communism	Fulfilled	

**AG & SG Siddhartha Degree College of Arts & Science,  
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Krishna Dt., A.P. (An Autonomous College in the Jurisdiction of Krishna University)

**Semester wise Academic Plan & fulfilment Record**

NAME OF THE DEPARTMENT: POLITICAL SCIENCE

Academic

Year :

2019-20

Name of  
the

Dr.G.Veeraraju

Lecturer :

Paper

Title :

CONCEPTS OF THEORIES AND INSTITUTIONS

SEMESTER

II

Class:

I B.A

Paper Code:

POL-  
201C

<b>Month</b>	<b>Planned (Unit No. &amp; Chapter Title)</b>	<b>Fulfilled (Unit No. &amp; Chapter Title)</b>	<b>Remarks</b>
<b>Nov-17</b>	Unit-I-Democracy forms, characteristics , merits & demerits of democracy Unit-II- Individualism, fascism, Marxism and Gandhi's, Montesquieu's theory of separation of powers	Fulfilled	
<b>Dec-17</b>	Unit-III- Powers and functions of legislature committee system	Fulfilled	
<b>Jan-18</b>	Unit-III- Presidential judiciary-Powers and functions	Fulfilled	
<b>Feb-18</b>	Unit-IV- Executive-types, powers and functions, judicial review	Fulfilled	
<b>Mar-18</b>	Unit-V- Human rights, welfare state popular control	Fulfilled	

**AG & SG Siddhartha Degree College of Arts & Science,  
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Krishna Dt., A.P. (An Autonomous College in the Jurisdiction of Krishna University)

**Semester wise Academic Plan & fulfilment Record**

NAME OF THE DEPARTMENT: POLITICAL SCIENCE

Academic

Year :

2019-20

Name of  
the

Dr.G.Veeraraju

Lecturer :

Paper

Title :

INDIAN POLITICAL PROCESS

SEMESTER

: IV

Class: II B.A

Paper Code: POL-401C

Month	Planned (Unit No. & Chapter Title)	Fulfilled (Unit No. & Chapter Title)	Remarks
<b>Nov-17</b>	Unit-I- Definition and role of political parties , characteristics of Indian political parties classification of Indian political parties	Fulfilled	
<b>Dec-17</b>	Unit-II- Election commission-structure , powers and functions, reforms	Fulfilled	
<b>Jan-18</b>	Unit-III- Indian national congress BJP,CPM(1), CPM, TDP , TRS, Akalidal, DMK, ADMK	Fulfilled	
<b>Feb-18</b>	Unit-IV- voting behaviour, caste, class & gender, religion politics	Fulfilled	
<b>Mar-18</b>	Unit-V- Coalition politics, national integration, social movements	Fulfilled	

**AG & SG Siddhartha Degree College of Arts & Science,  
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Krishna Dt., A.P. (An Autonomous College in the Jurisdiction of Krishna University)

Semester wise Academic Plan & fulfilment Record

NAME OF THE DEPARTMENT: POLITICAL SCIENCE

Academic

Year :

2019-20

Name of

the

Dr.G.Veeraraju

Lecturer :

Paper

LOCAL SELF GOVERNMENTS IN ANDHRA

Title :

PRADESH

SEMESTER

VI

:

Class:

III B.A

Paper Code:

POL-  
601GE

<b>Month</b>	<b>Planned (Unit No. &amp; Chapter Title)</b>	<b>Fulfilled (Unit No. &amp; Chapter Title)</b>	<b>Remarks</b>
<b>Nov-17</b>	Unit-I- 1. Court provisions of local self governments 2. Recommendations of Balwanth Roy and ashokmehtha committees	Fulfilled	
<b>Dec-17</b>	Unit-II- 1. 73rd constitution, Amendment act 2. 74th constitution Amendment act	Fulfilled	
<b>Jan-18</b>	Unit-III- 1. Gram panchayat structure and function 2. Mandal perished and jilla perished	Fulfilled	
<b>Feb-18</b>	Unit-IV- 1. Nagar panchayats structure 2. Municipalities structure and functions	Fulfilled	
<b>Mar-18</b>	Unit-V- 1. Emerging patterns of leadership 2. problems of authority	Fulfilled	

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Krishna Dt., A.P. (An Autonomous College in the Jurisdiction of Krishna University)

Semester wise Academic Plan & fulfilment Record

NAME OF THE DEPARTMENT: POLITICAL SCIENCE

Academic

Year :

2019-20

Name of

the

Dr.G.Veeraraju

Lecturer :

Paper

Title :

INTERNATIONAL RELATIONS

SEMESTER

VI

Class: III B.A

Paper Code:

POL-602  
CE

<b>Month</b>	<b>Planned (Unit No. &amp; Chapter Title)</b>	<b>Fulfilled (Unit No. &amp; Chapter Title)</b>	<b>Remarks</b>
<b>Nov-17</b>	Unit-I- 1. Meaning, nature, scope of International relations 2. Balance of power, collectively national Interns, Diplomacy	Fulfilled	
<b>Dec-17</b>	Unit-II- Idealism- wood row will son classical realism- Morgenthau-neo-realism-Kenneth waltz	Fulfilled	
<b>Jan-18</b>	Unit-III- 1. Causes of first world war 2. causes of second world war	Fulfilled	
<b>Feb-18</b>	Unit-IV- 1. Criticism of first cold war 2. Rise and fall of détente 3. Origin and end of second world war	Fulfilled	
<b>Mar-18</b>	Unit-V- The role of UNO in international peace, problems of third world- New economic order	Fulfilled	

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Semester wise Academic Plan & fulfilment Record

NAME OF THE DEPARTMENT: POLITICAL SCIENCE

Academic

Year :

2019-20

Name of

the

Dr.G.Veeraraju

Lecturer :

Paper

Title :

INDIAN FOREIGN POLICY

SEMESTER

VI

:

Class:

III B.A

Paper Code:

POL-603  
CE

<b>Month</b>	<b>Planned (Unit No. &amp; Chapter Title)</b>	<b>Fulfilled (Unit No. &amp; Chapter Title)</b>	<b>Remarks</b>
<b>Oct-15</b>	Unit-I- 1. Determinants of Indian Foreign policy 2. Change in Indian Foreign policy	Fulfilled	
<b>Nov-15</b>	Unit-II- 1. India's role in non-alignment 2. Non-Alignment in contemporary world 3. India's role in UNO Peace keeping	Fulfilled	
<b>Dec-15</b>	Unit-III- 1. Indo-US relations pre cold war 2. Indo-China relations pre cold war	Fulfilled	
<b>Jan-16</b>	Unit-IV- 1. Indo-Pak relations 2. India's role in SAARE	Fulfilled	
<b>Feb-16</b>	Revision	Fulfilled	



**TEACHING PLAN 2019-2020**

**ENVIRONMENTAL STUDIES**

**COURSE CODE: ENS 101B.A,B.COM.,B.SC.,**

<b>MON TH</b>	<b>Unit</b>	<b>Learning Units</b>
<b>JUN -19</b>	I	<b>Unit-I : Natural Resources:</b> Definition, scope and importance. Need for public awareness. Brief description of; Forest resources: Use and over-exploitation. Deforestation; timber extraction, mining, dams. Effect of deforestation environment and tribal people Water resources:
<b>JUL Y-19</b>	II	<b>Unit-II : Ecosystems, Biodiversity and its conservation</b> Concept of an ecosystem Structure and function of an ecosystem Producers, consumers and decomposers Food chains, food webs and ecological pyramids Characteristic features of the following ecosystems:- Forest ecosystem, Desert ecosystem, Aquatic ecosystem. Value of biodiversity: Consumptive use, productive use. Biodiversity in India. Threats to biodiversity: habitat loss, poaching of wildlife, man wildlife conflicts. Endangered and endemic species of India Conservation of biodiversity
<b>AU G- 2019</b>	III	<b>Unit-III : Environmental Pollution</b> Definition Causes, effects and control measures of :- a. Air pollution b. Water pollution c. Soil pollution d. Noise pollution Solid waste management; Measures for safe urban and industrial waste disposal Role of individual in revention of pollution Disaster management: Drought, floods and cyclones
<b>SEP- 2019</b>	IV	<b>Unit-IV : Social Issues and the Environment</b> From Unsustainable to Sustainable development Water conservation, rain water harvesting, watershed management. Climate change, global warming, ozone layer depletion, Environment protection Act Wildlife Protection Act, Forest Conservation Act
<b>OCT - 2019</b>	V	<b>Unit-V : Human Population and the Environment</b> Population explosion, impact on environment. Family welfare Programme Environment and human health Women and Child Welfare Value Education Role of Information Technology in Environment and humanhealth.

## ENTREPRENEURSHIP

COURSE CODE ;ENP201

MON TH	Unit	Learning Units
NO V-19	I	<b>Unit-I: Entrepreneurship:</b> Entrepreneur Characteristics – Classification of Entrepreneurships – Incorporation of Business – Forms of Business organizations –Role of Entrepreneurship in economic development – Start-ups.
DEC -19	II	<b>Idea Generation and Opportunity Assessment:</b> Ideas in Entrepreneurships – Sources of New Ideas – Techniques for generating ideas – Opportunity Recognition – Steps in tapping opportunities
JAN - 2020	III	<b>Project Formulation and Appraisal :</b> Preparation of Project Report – Content; Guidelines for Report preparation – Project Appraisal techniques –economic – Steps Analysis; Financial Analysis; Market Analysis; Technical Feasibility.
FEB - 2020	IV	<b>Institutions Supporting Small Business Enterprises:</b> Central level Institutions: NABARD; SIDBI, NIC, KVIC; SIDIO; NSIC Ltd; etc. – state level Institutions –DICs- SFC- SSIDC- Other financial assistance.
MA R- 2020	v	<b>Government Policy and Taxation Benefits:</b> Government Policy for SSIs- tax Incentives and Concessions –Non-tax Concessions – Rehabilitation and Investment Allowances.

**Subject Code: COMT11B      Title: FUNDAMENTALS OF ACCOUNTING**

<b>Month</b>	<b>Unit</b>	<b>Learning Units</b>
Dec- 2019	I	<b>Introduction</b> Need for Accounting – Definition – Objectives, – Accounting Concepts and Conventions – GAAP - Accounting Cycle - Classification of Accounts and its Rules – BookKeeping and Accounting - Double Entry Book-Keeping - Journalizing - Posting to Ledgers, Balancing of Ledger Accounts (including Problems).
Jan - 2020	II	<b>Subsidiary Books:</b> Types of Subsidiary Books - Cash Book, Three-column Cash Book- Petty Cash Book (including Problems).
Feb-2020	III	<b>Trial Balance and Rectification of Errors:</b> Preparation of Trial balance - Errors – Meaning – Types of Errors – Rectification of Errors – Suspense Account (including Problems)
Mar-2020	IV	<b>Bank Reconciliation Statement:</b> Need for Bank Reconciliation - Reasons for Difference between Cash Book and Pass Book Balances- Preparation of Bank Reconciliation Statement - Problems on both Favourable and Unfavourable Balance (including Problems).
April-20	V	<b>Final Accounts:</b> Preparation of Final Accounts: Trading account – Profit and Loss account – Balance Sheet – Final Accounts with Adjustments (including Problems).

**Subject Code: COMT12A      Title: Business Organization and Management**

Month	Unit	Learning Units
Dec- 2019	I	<b>Introduction Concepts of Business, Trade, Industry and Commerce:</b> Business – Meaning, Definition, Features and Functions of Business - Trade Classification – Aids to Trade – Industry Classification and Commerce - Factors Influencing the Choice of Suitable form of Organization.
Jan - 2020	II	<b>Forms of Business Organizations:</b> Features, Merits and Demerits of Sole Proprietor Ship and Partnership Business - Features Merits and Demits of Joint Stock Companies - Public Sector Enterprises (PSEs) - Multinational Corporations (MNCs)- Differences between Private Limited Public Limited Company.
Feb-2020	III	<b>Company Incorporation:</b> Preparation of Important Documents for Incorporation of Company - Certificate of Incorporation and Certificate of Commencement of Business - Contents of Memorandum and Articles of Association – Content of Prospectus.
Mar-2020	IV	<b>Management:</b> Meaning Characteristics - Fayol’s 14 Principles of Management - Administration Vs. Management - Levels of Management.
April-20	V	<b>Functions of Management:</b> Different Functions of Management - Meaning – Definition – Characteristics Merits and Demits of Planning - Principles of Organization – Line and staff of Organization.

Subject Code:COMBE Title: **Business Environment**

Month	Unit	Learning Units
Dec- 2019	I	<b>Overview of Business Environment:</b> Business Environment – Meaning – Characteristics – Scope -Macro and Micro Dimensions of Business Environment -Environmental Analysis- Purpose &Techniques.
Jan - 2020	II	<b>Economic Environment:</b> Economic Environment – Nature of the Economy – Structure of Economy – Economic Policies & Planning the Economic Condition – NITI Ayog – National Development Council – Five Year Plans
Feb-2020	III	<b>Economic Policies:</b> Economic Reforms and New Economic Policy – New Industrial Policy – Competition Law – Fiscal Policy – Objectives and Limitations – Monetary Policy and RBI
Mar-2020	IV	<b>Social, Political and Legal Environment:</b> Concept of Social Responsibility of Business towards Stakeholders - Demonetization, GST and their Impact - Political Stability - Legal Changes
April-20	V	<b>Global Environment:</b> Globalization – Meaning – Role of WTO – WTO Functions -IBRD– Trade Blocks, BRICS, SAARC, ASEAN in Globalization

Subject Code: COMED Title: **ENTREPRENEURSHIP DEVELOPMENT**

Month	Unit	Learning Units
	I	<b>Entrepreneurship:</b> Entrepreneur characteristics – Classification of Entrepreneurships –Role of Entrepreneurship in economic development –Start-ups.
	II	<b>Idea Generation and Project Formulation:</b> Sources of New Ideas in Entrepreneurships – Techniques for generating ideas - Preparation of Project Report –Content; Guidelines for Report preparation – Project Appraisal techniques – Economic Analysis; Financial Analysis; Market Analysis
	III	<b>Institutions Supporting and Taxation Benefits:</b> Central level Institutions: NABARD; SIDBI, NSIC – state level Institutions –DICs- SFC- SSIDC- Government Policy for SSIs- tax Incentives and Concessions –Non-tax Concessions Rehabilitation and Investment Allowances.

Subject Code: Title: **ONLINE BUSSIENESS**

<b>MONTH</b>	<b>Learning Units</b>
Dec- 2019	Introduction to Online-Business-Definition-Characteristics-Advantages of Online Business-Challenges- Differences between off-line business, e-commerce and Online Business.
Jan - 2020	Online-business Strategies-Strategic Planning Process-Procurement -Logistics & Supply Chain Management-Customer Relationship management.
Feb-2020	Designing Online Business Website – Policies - Security & Legal Issues - Online Advertisements - Payment Gateways - Case Study

**Subject Code :CAA-302G/C Title: Advanced Accounting**

<b>Month</b>	<b>Unit</b>	<b>Learning Units</b>
Nov-2019	I	<b>Accounting for Non-Profit Organisations:</b> Non-Profit Entities-Meaning - Features of Non-Profit Entities –Provisions as per Sec 8 - Accounting Process- Preparation of Accounting Records - Receipts and Payments Account- Income and Expenditure Account - Preparation of Balance Sheet (including problems)
Dec-2019	II	<b>Single Entry System:</b> Features – Differences between Single Entry and Double Entry – Disadvantages of Single Entry-Ascertainment of Profit and Preparation of Statement of Affairs (including Problems).
Jan-'20	III	<b>Hire Purchase System:</b> Features –Difference between Hire Purchase and Instalment Purchase Systems - Accounting Treatment in the Books of Hire Purchaser and Hire Vendor - Default and Repossession (including Problems)
Feb-'20	IV	<b>Partnership Accounts-I:</b> Meaning – Partnership Deed - Fixed and Fluctuating Capitals-Accounting Treatment of Goodwill - Admission and Retirement of a Partner (including problems)
Mar-'20	V	<b>Partnership Accounts-II:</b> Dissolution of a Partnership Firm – Application of Garner v/s Murray Rule in India – Insolvency of one or more Partners (including problems).



Subject Code: CBS-303G/C Title: **Business Statistics**

Month	Unit	Learning Units
Nov-2019	I	<b>Introduction to Statistics:</b> Definition, Importance and limitation of statistics, Collection of data, Schedule and questionnaire, Frequency distribution, Tabulation
Dec-2019	II	<b>Measures of Central Tendency:</b> Characteristics of measures of central tendency, Types of Averages, Arithmetic Mean, Geometric Mean, Harmonic Mean, Median, Mode
Jan-'20	III	<b>Measures of dispersion and Skewness:</b> Properties of dispersion, Range, Quartile Deviation, Mean deviation, Standard deviation, Coefficient of Variation, Skewness Definition, Karl Pearson's and Bowley's Measures Of skewness
Feb-'20	IV	<b>Measures of Relation:</b> Meaning and use of correlation, Types of correlation, Karl Pearson's correlation coefficient, Probable Error, Spearman's Rank correlation, Regression analysis comparison between correlation and Regression, Regression Equations
Mar-'20	V	<b>Analysis of Time Series &amp; Index Numbers</b> Meaning and utility of time series, Components of Time series, Measurement of trend and Seasonal Variations, Techniques of Time series analysis, Methods of averages(Semi , Moving averages), Least square method, Index Numbers, Methods of Construction of Index numbers, Price index numbers, Limitations of index numbers

Subject Code: **CM 304 G** Title: **Marketing**

<b>Month</b>	<b>Unit</b>	<b>Learning Units</b>
Nov-2019	I	<b>Introduction:</b> Concepts of Marketing: Need, Wants and Demand - Marketing Concepts – Marketing Mix - 4 P’s of Marketing – Marketing Environment.
Dec-2019	II	<b>Consumer Behaviour and Market Segmentation:</b> Buying Decision Process – Stages – Buying Behaviour – Market Segmentation –Bases of Segmentation - Selecting Segments – Advantages of Segmentation
Jan-‘20	III	<b>Product Management:</b> Product Classification – Levels of Product - Product Life Cycle - New Products, Product Mix and Product Line Decisions - Design, Branding, Packaging and Labelling.
Feb-‘20	IV	<b>Pricing Decision:</b> Factors Influencing Price – Determination of Price - Pricing Strategies: Skimming and Penetration Pricing.
Mar-‘20	V	<b>Promotion and Distribution:</b> Promotion Mix - Advertising - Sales promotion - Publicity – Public Relations - Personal Selling and Direct Marketing - Distribution Channels – Online Marketing

Subject Code: CBL-501(U) Title Business Leadership

	<b>Unit</b>	<b>Learning Units</b>
Nov-2019	I	<b>Unit-I: Introductory: Leadership</b> - Traits, Skills and Styles- Leadership Development - Qualities of a Good Leader.
Dec-2019	II	<b>Unit-II: Decision-Making and Leadership:</b> Leadership for Sustainability - Power, Influence, Impact - Leadership Practices - Organizations and Groups: Organizational Culture and Leadership - Leadership in Business Organizations
Jan-'20	III	<b>Unit-III: Special Topics:</b> Profiles of a few Inspirational Leaders in Business – Jemshedji Tata - Aditya Birla - Swaraj Paul - L N Mittal - N R Narayana Murthy - Azim Premji, etc.

**Subject Code: CCOA-502 G/C C Title: Cost Accounting**

<b>Month</b>	<b>Unit</b>	<b>Learning Units</b>
Nov-2019	I	<b>Introduction:</b> Distinguish between Financial Accounting, Cost Accounting and management accounting - Cost Concepts and Classification – Cost Centre and Cost Unit – Preparation of Cost Sheet.
Dec-2019	II	<b>Elements of Cost: Materials:</b> Material control – Selective control, ABC technique – Methods of pricing issues – FIFO, LIFO, Weighted average, Base stock methods, choice of method(including problems).
Jan-‘20	III	<b>Labour and Overheads:</b> Labour: Control of labour costs – time keeping and time booking – Idle time –Methods of remuneration – labour incentives schemes - Overheads: Allocation and apportionment of overheads – Machine hour rate.
Feb-‘20	IV	<b>Methods of Costing: Job costing</b> – Process costing - treatment of normal and abnormal process losses – preparation of process cost accounts – treatment of waste and scrap, joint products and by products (including problems).
Mar-‘20	V	<b>Costing Techniques:</b> Marginal Costing – Standard costing – Variance Analysis (including problems).

## **SYLLABUS**

Subject Code: **CTAX 503 CC**      Title: **TAXATION**

<b>Month</b>	<b>Unit</b>	<b>Learning Units</b>
Nov-2019	I	<b>Introduction:</b> Objectives - Principles of Taxation - Brief History - Basic Concepts; Capitaland Revenue; Basis of Charge - Exempted Incomes - Residential Status – Incidence of Taxation.
Dec-2019	II	<b>Direct and Indirect Taxes</b> – Service Tax – VAT – Central Sales Tax – Latest Developments.
Jan-‘20	III	<b>Computation of income under different heads:</b> Income from Salary; Income from HouseProperty; Deductions u/s 80C to 80U - Income from Capital Gains; Income from Other Sources(simples problems).
Feb-‘20	IV	<b>Taxation System in India:</b> Objectives; Tax Holiday; Modes of Tax Recovery (Section 190 and 202); Payments and Refunds; Filing of Returns.
Mar-‘20	V	<b>Tax Planning:</b> Tax Avoidance and Tax Evasion; Penalties and Prosecutions; Income TaxAuthorities.

**Subject Code: CGST-503G/C Title :GOODS &SERVICE TAX FUNDAMENTALS**

<b>Month</b>	<b>Unit</b>	<b>Learning Units</b>
Nov-2019	I	<b>Introduction: Overview of GST</b> - Concepts – Limitations of VAT – Need for Tax Reforms - Justification for introduction of GST - Shortcomings and advantages at the Central Level and State Level on introduction of GST- Process of Introduction of GST - Constitutional Amendments.
Dec-2019	II	<b>GST:Principles</b> – Models of GST: Austrlian, Candian, Kelkar-Shah – BagchiPoddar -Comprehensive structure of GST model in India: Single, Dual GST– Transactions covered under GST.
Jan-‘20	III	<b>Taxes and Duties:</b> Subsumed under GST - Taxes and Duties outside the purview of GST: Tax on items containing Alcohol – Tax on Petroleum products - Tax on Tobacco products - Taxation of Services
Feb-‘20	IV	<b>Inter-State Goods and Services Tax:</b> Major advantages of IGST Model – Interstate Goods and Service Tax: Transactions within a State under GST – Interstate Transactions under GST - Illustrations
Mar-‘20	V	<b>Time of Supply of Goods &amp; Services:</b> Value of Supply - Input Tax Credit – Distribution of Credit -Matching of Input Tax Credit - Availability of credit in special circumstances- Cross utilization of ITC between the Central GST and the State GST.

Subject Code: CCG-504G/C C

Title: Commercial Geography

Month	Unit	Learning Units
Nov-2019	I	The Earth: Internal structure of the Earth – Latitude – Longitude – Realms of the Earth – Evolution of the Earth – Environmental pollution - Global Warming - Measures to be taken to protect the Earth.
Dec-2019	II	India – Agriculture: Land Use - Soils - Major crops – Food and Non-food Crops – Importance of Agriculture – Problems in Agriculture – Agriculture Development.
Jan-‘20	III	India – Forestry: Forests – Status of Forests in Andhra Pradesh – Forest (Conservation) Act, 1980 – Compensatory Afforestation Fund (CAF) Bill, 2015 - Forest Rights Act, 2006 and its Relevance – Need for protection of Forestry.
Feb-‘20	IV	India – Minerals and Mining: Minerals – Renewable and non Renewable – Use of Minerals – Mines – Coal, Barites, etc. – Singareni Coal mines and Mangampeta Barites – Districtwise Profile.
Mar-‘20	V	India – Water Resources – Rivers: Water resources - Rationality and equitable use of water – Protection measures - Rivers - Perennial and peninsular Rivers - Interlinking of Rivers - Experience of India and Andhra Pradesh.

Subject Code **CCB 505CE G/C**

Title: **Central Banking**

<b>Month</b>	<b>Unit</b>	<b>Learning Units</b>
Nov-2019	<b>I</b>	Introduction: Evolution and Functions of Central Bank - Development of Central Banks in Developed and Developing countries - Trends in Central Bank Functions.
Dec-2019	<b>II</b>	Central banking in India: Reserve Bank of India - Constitution and Governance, Recent Developments, RBI Act. - Interface between RBI and Banks.
Jan-'20	<b>III</b>	Monetary and Credit Policies: Monetary policy statements of RBI - CRR - SLR – Repo Rates - Reverse Repo Rates - Currency in circulation - Credit control measures.
Feb-'20	<b>IV</b>	Inflation and price control by RBI: Intervention mechanisms - Exchange rate stability -Rupee value - Controlling measures.
Mar-'20	<b>V</b>	Supervision and Regulation: Supervision of Banks - Basle Norms, Prudential Norms, Effect of liberalization and Globalization - Checking of money laundering and frauds.



Subject Code: **CCB 505CE G/C**

Title: **Rural and Farm Credit**

**Course Details**

<b>Month</b>	<b>Unit</b>	<b>Learning Units</b>
<b>Nov-2019</b>	<b>I</b>	Rural Credit: Objectives and Significance of Rural credit - Classification of rural credit -General Credit Card (GCC) – Financial Inclusion - Rupay Card.
<b>Dec-2019</b>	<b>II</b>	Rural Credit Agencies: Institutional and Non-institutional Agencies for financing agriculture and Rural development - Self-Help Groups (SHG) - Financing for Rural Industries.
<b>Jan-‘20</b>	<b>III</b>	Farm Credit: Scope - Importance of farm credit - Principles of Farm Credit - Types- Cost of Credit - - problems and remedial measures - Kisan Credit Card (KCC) Scheme
<b>Feb-‘20</b>	<b>IV</b>	Sources of Farm Credit: Cooperative Credit: PACS - APCOB - NABARD SLBC- Lead Bank Scheme - Role of Commercial and Regional Rural Banks - Problems of recovery and over dues.
<b>Mar-‘20</b>	<b>V</b>	Farm Credit Analysis: Eligibility Conditions - Analysis of 3 R’s (Return, Repayment Capacity and Risk-bearing Capacity) - Analysis of 3 C’s of Credit (Character, Capacity and Capital) - Crop index reflecting use and farm credit - Rural Credit Survey Reports..

<b>Month</b>	<b>Unit</b>	<b>Learning Units</b>
June -'20	I	Depreciation: Meaning and Causes of Depreciation - Methods of Depreciation: Straight Line – Written Down Value – Annuity and Depletion Method (including Problems).
July-'20	II	Provisions and Reserves: Meaning – Provision vs. Reserve – Preparation of Bad Debts Account – Provision for Bad and Doubtful Debts – Provision for Discount on Debtors – Provision for Discount on Creditors - Repairs and Renewals Reserve A/c (including Problems).
Aug-'20	III	Bills of Exchange: Meaning of Bill – Features of Bill – Parties in the Bill – Discounting of Bill – Renewal of Bill – Entries in the Books of Drawer and Drawee (including Problems).
Sep-'20	IV	Consignment Accounts: Consignment - Features - Proforma Invoice - Account Sales – Del-credere Commission - Accounting Treatment in the Books of Consigner and Consignee - Valuation of Closing Stock - Normal and Abnormal Losses (including Problems).
Oct-10	V	Joint Venture Accounts: Joint Venture - Features - Difference between Joint Venture and Consignment – Accounting Procedure – Methods of Keeping Records–One Vendor Keeps the Accounts and Separate Set off Books Methods (including Problems).

Subject Code: BEN-202 G/C C Title: **Business Environment**

Month	Unit	Learning Units
June -'20	I	<b>Overview of Business Environment:</b> Business Environment – Meaning – Characteristics – Scope -Macro and Micro Dimensions of Business Environment -Environmental Analysis- Purpose &Techniques.
July-'20	II	<b>Economic Environment:</b> Economic Environment – Nature of the Economy – Structure of Economy – Economic Policies & Planning the Economic Condition – NITI Ayog – National Development Council – Five Year Plans
Aug-'20	III	<b>Economic Policies:</b> Economic Reforms and New Economic Policy – New Industrial Policy – Competition Law – Fiscal Policy – Objectives and Limitations – Monetary Policy and RBI
Sep-'20	IV	<b>Social, Political and Legal Environment:</b> Concept of Social Responsibility of Business towards Stakeholders - Demonetization, GST and their Impact - Political Stability - Legal Changes
Oct-10	V	<b>Global Environment:</b> Globalization – Meaning – Role of WTO – WTO Functions -IBRD– Trade Blocks, BRICS, SAARC, ASEAN in Globalization

Subject Code:CACC-201G/C C Title: Accounting for Service Organizations

<b>Month</b>	<b>Unit</b>	<b>Learning Units</b>
June -'20	I	Non-Trading/ Service Organizations: Concept - Types of Service Organizations – Section (8) and other Provisions of Companies Act,2013.
July-'20	II	Electricity Supply Companies: Accounts of Electricity supply companies: Double Accounting system – Revenue Account – Net Revenue Account – Capital Account – General Balance Sheet (including problems).
Aug-'20	III	Bank Accounts Bank Accounts – Books and Registers to be maintained by Banks – Banking Regulation Act, 1969 - Legal Provisions Relating to preparation of Final Accounts (including problems).
Sep-'20	IV	Life Insurance Companies Life Insurance Companies –Preparation of Revenue Account, Profit and Loss Account, Balance Sheet (including problems) – LIC Act, 1956.
Oct-10	V	General Insurance Principles – Preparation of final accounts – with special reference to fire and marine insurance (including problems) – GIC Act, 1972.

Month	Unit	Learning Units
June -'20	I	<b>Contract</b> Meaning and Definition of Contract-Essential elements of valid Contract -Valid, Void and Voidable Contracts - Indian Contract Act, 1872 Definition of Valid Offer, Acceptance and Consideration - Essential elements of a Valid Offer, Acceptance and Consideration.
July-'20	II	<b>Capacity of the Parties and Contingent Contract</b> Rules regarding to Minors contracts - Rules relating to contingent contracts – Different modes of discharge of contracts-Rules relating to remedies to breach of contract.
Aug-'20	III	<b>Sale of Goods Act 1930</b> Contract of sale – Sale and agreement to sell – Implied conditions and warranties –Rights of unpaid vendor.
Sep-'20	IV	<b>Consumer Protection Act, 1986</b>  Introduction, Aims and objectives of the Act - Definition - Consumer Rights - Unfair and restrictive trade practices - consumer protection Councils - Consumer disputes Redressal agencies - Penalties for violation.
Oct-10	V	<b>Cyber Laws</b> Cyber Law and Contract Procedures - Digital Signature - Safety Mechanisms

<b>Month</b>	<b>Unit</b>	<b>Learning Units</b>
Nov-2019	I	Introduction: Income Tax Law – Basic concepts: Income, Person, Assesses, Assessment year, Agricultural Income, Residential status, Income exempt from tax (Theory only).
Dec-2019	II	Income from salary: Allowances, perquisites, profits in lieu of salary, deductions from salary income, computation of salary income and qualified savings eligible for deduction u/s 80C(Simple- problems).
Jan-‘20	III	Income from House Property: Annual value, let-out/self occupied/deemed to be let-out house, deductions from annual value - computation of income from house property (Simple- problems)
Feb-‘20	IV	Income from Capital Gains – Income from other sources – (from Individual point of view) -chargeability – and assessment (Simple- problems).
Mar-‘20	V	Computation of total income of an individual – Deductions under section - 80 (Simple- problems).

**Subject Code CBTP-401C C Title: Banking Theory & Practice**

<b>Month</b>	<b>Unit</b>	<b>Learning Units</b>
Nov-2019	I	Introduction Meaning & Definition of Bank – Functions of Commercial Banks – Kinds of Banks -Central Banking Vs. Commercial Banking.
Dec-2019	II	Banking Systems Unit Banking , Branch Banking, Investment Banking- Innovations in banking – e-banking - Online and Offshore Banking , Internet Banking - Anywhere Banking - ATMs- RTGS.
Jan-‘20	III	Banking Development Indigenous Banking - Cooperative Banks, Regional Rural banks, SIDBI, NABARD -EXIM Bank.
Feb-‘20	IV	Banker and Customer Meaning and Definition of Banker and customer – Types of Customers - General Relationship and Special Relationship between Banker and Customer - KYC Norms.
Mar-‘20	V	Collecting Banker and Paying Banker

**Subject Code CEM -601G/C C Title: Event Management**

<b>Month</b>	<b>Learning Units</b>
Nov-2019	Event Concept: Corporate Events and Customer's needs - Types of Events - Corporate hospitality – Exhibitions – Trade Fairs – Conferences –Business and Government Meets - Corporate event packages - Menu Selection - Customization.
Dec-2019	. Outdoor Events: Logistics, Types of Outdoor events, Risk management - Health and safety, Marketing and sponsorship, HR Management, Programming and Entertainment.
Jan-'20	Celebrity Events: Launches, Fashion shows, National festivals and high-profile charity events - Liaison with agents, Contract Negotiations, Client briefings, Celebrity wish lists and expectations - Liaisoning with Govt. Departments.



Subject Code: **CM 602GE G/C** Title: **Marketing**

<b>Month</b>	<b>Unit</b>	<b>Learning Units</b>
Nov-2019	I	Introduction: Concepts of Marketing: Product Concept – Selling Concept - Societal Marketing Concept – Marketing Mix - 4 P’s of Marketing – Marketing Environment.
Dec-2019	II	Consumer Markets and Buyer Behaviour: Buying Decision Process – Stages – Buying Behaviour – Market Segmentation – Selecting Segments – Advantages of Segmentation.
Jan-‘20	III	Product Management: Product Life Cycle - New products, Product mix and Product line decisions - Design, Branding, Packaging and Labelling.
Feb-‘20	IV	: Pricing Decision: Factors influencing price determination, Pricing strategies: Skimming and Penetration pricing.
Mar-‘20	V	Promotion and Distribution: Promotion Mix - Advertising - Publicity – Public relations - Personal selling and Direct marketing - Distribution Channels – Online marketing- Global marketing.

**Subject Code :**CAU-603GE G/C      **Title:** Auditing

<b>Month</b>	<b>Unit</b>	<b>Learning Units</b>
Nov-2019	I	<b>Introduction:</b> Meaning – Objectives – Importance of Auditing – Characteristics - Book Keeping vs Auditing - Accounting vs Auditing – Role of Auditor in Checking Corporate Frauds.
Dec-2019	II	<b>Types of Audit:</b> Based on Ownership, Time and Objective - Independent, Financial, Internal, Cost, Tax, Government, Secretarial Audits
Jan-‘20	III	<b>Planning of Audit:</b> Steps to be taken at the Commencement of a New Audit – Audit Programme - Audit Note Book– Audit Working Papers - Audit Evidence - Internal Check, Internal Audit and Internal Control.
Feb-‘20	IV	<b>Vouching and Investigation:</b> Definition and Importance of Vouching – Objectives of Vouching -Vouching of Cash and Trading Transactions – Investigation - Auditing vs. Investigation
Mar-‘20	V	<b>Company Audit and Auditors Report:</b> Auditor's Qualifications – Appointment and Reappointment – Rights, Duties, Liabilities and Disqualifications - Audit Report: Contents –Preparation - Relevant Provisions of Companies Act, 2013.

**Subject Code :** CMA 604GE G/C      **Title** Management Accounting

<b>Month</b>	<b>Unit</b>	<b>Learning Units</b>
Nov-2019	I	Management Accounting: Interface with Financial Accounting and Cost Accounting - Financial Statement analysis and interpretation: Comparative analysis – Common size analysis and trend analysis (including problems).
Dec-2019	II	Ratio Analysis: Classification, Importance and limitations - Analysis and interpretation of Accounting ratios - Liquidity, profitability, activity and solvency ratios (including problems).
Jan-'20	III	Fund Flow Statement: Concept of fund: Preparation of funds flow statement. Uses and limitations of funds flow analysis (including problems).
Feb-'20	IV	Cash Flow Statement: Concept of cash flow – Preparation of cash flow statement – Uses and limitations of cash flow analysis (including problems).
Mar-'20	V	Break-Even Analysis and Decision Making: Calculation of Break-even point - Uses and limitations - Margin of safety – Make/Buy Decision - Lease/own Decision (including Problems).

**Subject Code :** CFS 605 CE G/C

**Title** Financial Services

<b>Month</b>	<b>Unit</b>	<b>Learning Units</b>
Nov-2019	I	Financial Services: Role of Financial Services - Banking and Non Banking Companies – Activities of Non Banking Finance Companies- Fund Based Activities - Fee Based Activities .
Dec-2019	II	Merchant Banking Services: Scope and importance of merchant banking services - Venture Capital - Securitization - Demat services - Commercial Papers – Treasury bills
Jan-‘20	III	Leasing and Hire-Purchase: Types of Lease, Documentation and Legal aspects – Fixation of Rentals and Evaluation - Hire Purchasing- Securitization of debts - House Finance.
Feb-‘20	IV	Credit Rating: Purpose – Types – Credit Rating Symbols – Agencies: CRISIL and CARE – Equity Assessment vs. Grading – Mutual funds.
Mar-‘20	V	Break-Even Analysis and Decision Making: Calculation of Break-even point - Uses and limitations - Margin of safety – Make/Buy Decision - Lease/own Decision (including Problems).

**Subject Code :** *CMFS 606 CE G/C* **Title** Marketing of Financial Services

<b>Month</b>	<b>Unit</b>	<b>Learning Units</b>
Nov-2019	I	Difference between Goods and Services: Managing Service Counters – Integrated Service Management – Service Elements.
Dec-2019	II	:Constructing Service Environment – Managing People for service Advantage – Service Quality and Productivity – Customer Loyalty.
Jan-‘20	III	Pricing and Promotion Strategies: Pricing strategies – Promotion strategies – B2B Marketing – Marketing Planning and Control for services.
Feb-‘20	IV	Distributing Services: Cost and Revenue Management – Approaches for providing services - Channels for Service provision – Designing and managing Service Processes.
Mar-‘20	V	: Retail Financial Services - Investment services – Insurance services - Credit Services - Institutional Financial Services - Marketing practices in select Financial Service Firms.

**Teaching Plan**  
**Academic Year : 2019 - '20**

**Semester-**

Paper Title : Differential Equations

Class: I B.Sc

Course Code: MAT - 101

Month	Plan (Unit No. & Chapter Title)	Remarks
Jun-19	Unit III: Higher Order L.D.Equations-I, Solution of Homogeneous L.D.Equations & Non Homogeneous L.D.Equations with constant coefficients (Method I & II).	
Jul-19	Unit IV: Higher Order L.D.Equations -II,Solution of Non Homogeneous L.D.Equations with constant coefficients (Method III,IV & V).	
Aug-19	Unit V: Higher Order L.D.Equations - III, M.V.P Method,The Cauchy-Euler Equation.	
Sep-19	Unit I: Differential Equations Of First Order & First Degree, L.D.Equations, D.E reducible to Linear form ,Exact D.E.,Integrating factors,Change of Variables.	
Oct-19	Unit II: Differential Equations of the First Order butnot of the First Degree, Orthogonal Trajectories, Equations Solvable for p,y & x,Equations of the First Degree In x & y-Clairaut's Equation.	

**Semester-III**

Paper Title : Abstract Algebra and Real Analysis -I

Class: II B,Sc

Course Code: MAT-301C

Month	Planned (Unit No. & Chapter Title)	Remarks
Jun-19	Unit-I:Groups:Binary operation,Semi group,group defination and elementary properties,finite and infinite groups-examples order of a group,composition tables with examples	
Jul-19	Unit-II:Subgroups:multiplication of two subgrupus,union and intersection of two subgroups,Lagrange's theorem.	
Aug-19	Unit-III: Normal Subgroups, proper and improper normal subgroups, intersection of two normal sub groups,subgroup of index 2 is a normal subgroup,quotient group.	
Sep-19	Unit-IV:Real Numbers,Real Sequencesbounded sequences,the cauchy's criterion,bolzano-weierstrass theorem,cauchy'sgeneral principle of convergence theorem	
Oct-19	Unit-V:Infinite Series:p-test,cauchy's nth Root test,D'Alembert's Ratio test ,Leibnitz test	

**Semester-V**

Paper Title : Ring Theory And Vector Calculus

Class: III B.SC

Course Code: MAT-501

<b>Month</b>	<b>Planned (Unit No. &amp; Chapter Title)</b>	<b>Remarks</b>
<b>Jun-19</b>	Unit-I:Rings-I: Ring, Boolean ring, Characteristic of a ring, Integral domain, Field, Ideals	
<b>Jul-19</b>	Unit-II-Rings-II: Homomorphism, Kernel of homomorphism, Fundamental theorem of homomorphism	
<b>Aug-19</b>	Unit-III: Vector Differentiation : Gradient, Divergent, Curl Operators of Vectors	
<b>Sep-19</b>	Unit-IV: Vector Integration: Line Integral, Surface Integral, Volume Integral with examples	
<b>Oct-19</b>	Unit-V: Vector Integration Applications: Theorems of Gauss and Stokes, Green's theorem in plane and applications of these theorems	

NAME OF THE DEPARTMENT : Mathematics

Academic Year : 2019 - '20

Paper

Title :

Linear Algebra

V

III B.Sc

MAT -  
502

<b>Month</b>	<b>Planned (Unit No. &amp; Chapter Title)</b>	<b>Remarks</b>
<b>Jun-19</b>	Unit IV: Matrices, Linear System of Equations	
<b>Jul-19</b>	Unit IV: Characteristic roots and vectors of a square matrices. Unit V: Inner Product Spaces.	
<b>Aug-19</b>	Unit I: Vector Space I, Vector Subspaces, LD and LID Unit II: Vector Space II,	
<b>Sep-19</b>	Unit II: Vector Space II, Basis and Dimensions Unit III: Linear Transformations	
<b>Oct-19</b>	Unit III: Linear Transformations, Rank Nullity theorem	

Academic Year : 2019 - '20

Paper

Title :

Solid Geometry

I B.Sc

MAT -  
201

Month	Planned (Unit No. & Chapter Title)	Remarks
Nov-19	Unit - I : The Plane, Equation of Plane in terms its Intercepts on the Axis , Equation of the Plane through the Given Points, Bisectors of angles between Two Points, Pair of Planes.	
Dec-19	Unit - II : The Line, Equation of a Line ,Angle Between a Line & a Plane ,Image Point, Image Line, Shortest Distance Between Two Lines.	
Jan-20	Unit - III : The Sphere , Definition & Equation of the Sphere ,Equation of the Sphere through four given points, Intersection of two Sphere, Equation of a Circle ,Sphere through a given Circle, Intersection of a Sphere & a Line ,Tangent Plane, Plane of a contact, Polar plane ,pole of a plane, Conjugate Points, Conjugate Planes.	
Feb-20	Unit - IV : The Sphere & Cones, Angle of Intersection of two Spheres, Coaxial System of Spheres, Definition of a Cone ,Vertex, Guiding Curve, Generators, Equation of a cone with a given vertex & Guiding Curve, Enveloping Cone of a Sphere, Condition that a cone may have three mutually perpendicular generators.	
Mar-20	Unit - V : Cones & Cylinders, Reciprocal Cones, Right Circular Cone, Definition & Equation of a Cylinder, Enveloping Cylinder, Right Circular Cylinder.	

IV semester

Academic Year : 2019 - '20

Paper

Title :

Abstract Algebra and Real Analysis-II

II.BSC

MAT-  
401C

Month	Planned (Unit No. & Chapter Title)	Remarks
Nov-19	Unit-I: Homomorphism, Kernel of Homomorphism, fundamental theorem on Homomorphism.	
Dec-19	Unit-II: Permutations And Cyclic Group, Inverse of a permutation, even & odd permutations, Cayley's theorem.	
Jan-20	Unit III: Infinite Series: p-test, Cauchy's nth Root test, D'Alembert's Ratio test ,Leibnitz test	
Feb-20	Unit-IV: Differentiation And Mean Value Theorem, Rolle's Theorem, Cauchy's Mean Value Theorem.	
Mar-20	Unit-V: Riemann Integration, Darboux Theorem, Fundamental Theorem of integral calculus.	



Academic Year : 2019 - '20

Paper

Title :

Numerical Analysis

VI

III B.Sc

MAT -  
601

Month	Planned (Unit No. & Chapter Title)	Remarks
Nov-19	Unit - I : Errors and their accuracy	
Dec-19	Unit - II : Applications of Algebraic and Transcendental equations, Regula - Falsi and Newton - Raphson Methods	
Jan-20	Unit - III : Finite Differences and Interpolation with equal intervals	
Feb-20	Unit - IV : Central difference interpolation with Gauss's, Stirling's, Bessel's and Everett's formulae	
Mar-20	Unit - IV : Interpolation with Unequal intervals, Newton's, Lagrange's interpolation Formulae	

IV Semester

Academic Year : 2019 - '20

Paper

Title :

Integral Transforms

III B.Sc

MAT -  
602

Month	Planned (Unit No. & Chapter Title)	Remarks
Nov-19	Unit - I : Applications of Laplace Transforms of D.E with Constant coefficients	
Dec-19	Unit - I : Applications of Laplace Transforms of solutions D.E with variable coefficients Unit - II Applications of Laplace Transforms of solutions D.E - II	
Jan-20	Unit - II Applications of Laplace Transforms of solutions D.E - II Unit - III : Applications of Laplace Transforms to Integral Equations	
Feb-20	Unit - IV : Fourier Series - I	
Mar-20	Unit - IV : Fourier Series - II	

Academic Year : 2019 - '20

Name of the Lecturer :

Paper

Title :

ADVANCED NUMERICAL ANALYSIS

IV

III.BSC

MAT-  
603CE

Month	Planned (Unit No. & Chapter Title)	Remarks
Nov-19	Unit-IV: Gaussian Elimination method, Gauss Jordan method, Iterative method.	
Dec-19	Unit-V: Numerical solution of ordinary differential equation, Euler's method, Runge-Kutta method.	
Jan-20	Unit-I: Curve Fitting, Polynomial fitting, Curve fitting by a power function and exponential function.	
Feb-20	Unit-II: Numerical Differentiation, Newton's forward difference formula, Derivatives using central difference formula	
Mar-20	Unit-III: Numerical Integration, Trapezoidal rule, Boole's rule and Weddle's rule.	

**DEPARTMENT OF PHYSICS**

**SEMESTER – I**

**2019-2020**

**Teaching Plan**

Subject Code : **PHY 101C**

Title: **Mechanics & properties of matter**

Month	Unit No.	Topic to be covered
Jun 19	I	<b>1. Vector analysis :-</b> scalar and vector fields, gradient of a scalar field and its physical significance .divergence and curl of vector field with derivations, gauss theorem,stokes theorem
July - 19	II	<b>Mechanics of Particles</b> Review of Newton's Laws of Motion, Motion of variable mass system, Motion of a rocket, Multistage rocket, Concept of impact parameter, scattering cross-section.
aug-19	III	<b>4. Mechanics of Rigid bodies</b> Def of Rigid body, rotational kinematic relations, Equation of motion for a rotating body, Angular momentum and Moment of inertia tensor, Euler equations, Precession of a spinning top, Gyroscope, Precession of the equinoxes .
Sep 19	IV	<b>Central forces :-</b> Def and examples, conservative nature of central forces, conservative force as negative gradient of potential energy, keplers laws, derivation, motion of satellites .
Oct 19	V	<b>Special theory of relativity :-</b> Galilean relativity, absolute frames, michelson morely expt, posulates of special theory of relativity, lorentz transformations, length contraction, mass energy relation .

## SEMESTER – II

2019-2020

### Teaching Plan

Subject Code : **PHY 201C**

Title: **WAVES AND OSCILLATIONS**

Month	Unit No.	Topic to be covered
Nov 19	I	<b>SIMPLE HARMONIC MOTION</b> :SHM and solution of differential equation, characteristics of shm, torsional pendulum, measurement of rigidity modulus, combination of two mutually perpendicular shm vibrations of same frequency, lissajous figures .
Dec 19	II	<b>Damped and forced oscillations</b> : damped harmonic oscillator, solution of differential equation of oscillator, energy considerations, logarithmic decrement, quality factor, amplitude resonance, velocity resonance .
Jan 20	III	<b>Complex vibrations</b> :- fourier theorem, forier coefficients, sqaure wave, triangular wave, saw tooth wave .
Feb 20	IV	<b>Vibrating strings</b> :- transverse nature of propagation along a stretched string, solution of wave euation, modes of vibration of stretched string, overtones, tranverse impedence .
Mar 20	V	<b>Ultrasonics</b> :- properties of ultrasonics, piezoelectric method, magnetostriction method, wavelength of ultrasonics, applications of ultrasonicss .

## SEMESTER – III

### Teaching Plan

Subject Code : PHY-301C

Title: WAVE OPTICS

Month	Unit No.	Topic to be covered
Jun 19	I	<b>1. ABERRATIONS :</b> Monochromatic aberrations, spherical aberrations, coma, astigmatism, curvature, distortion, chromatic aberration , achromatic doublet, achromatism for two lenses in contact, separated by a distance .
July 19	II	<b>2. Interference : Division of wavefront :</b> Principle of superposition, interference of light by division of wave front and amplitude, Lloyd's single mirror, thin films, wedge shaped films, newton's rings in reflected rings, Michelson interferometer and determination of wave length. Stokes law .
aug 19	III	<b>3. Interference : Division of amplitude :</b> Oblique incidence due to reflected and transmitted light, colors in thin films, non reflecting films, wedge shaped films, newton's rings in reflected rings, Michelson interferometer and determination of wave length.
Sep 19	IV  V	<b>4 Diffraction :</b> Introduction, distinction between Fresnel and Fraunhofer diffraction, Fraunhofer diffraction – Diffraction due to single slit , Resolving power of grating-Determination of wavelength of light in normal and oblique incidence methods using diffraction grating.Fresnel's half period zones-area of the half period zones-zone plate-comparison of zone plate with convex lens.. <b>5.Polarization :</b> Polarized light, Brewster's law, Malus law, Nicol prism, quarter wave plate, half wave plate, Babinet's compensator . <b>Lasers :</b> introduction,spontaneous emission, stimulated emission. Population Inversion, Laser principle-Einstein coefficients-Types of lasers-He-Ne laser, Ruby laser- Applications of lasers. <b>Holography:</b> Basic principle of holography,

		Applications of holography
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**SEMESTER – IV**

**2019-2020**

**TEACHING PLAN**

Subject Code: **PHY-401C**

Title: **Thermodynamics & Radiation physics**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Nov 19	I	<p><b>1. Kinetic theory of gases</b></p> <p>Introduction –Deduction of Maxwell’s law of distribution of molecular speeds, Transport phenomena-Viscosity of gases-thermal conductivity-diffusion of gases.</p>
Dec 19	II	<p><b>2. Thermodynamics</b></p> <p>Introduction- Isothermal and adiabatic process- Reversible and irreversible processes-Carnot’s engine and its efficiency-Carnot’s theorem-Second law of thermodynamics. Kelvin’s and Clausius statements-Entropy, physical significance –Change in entropy in reversible and irreversible processes-Entropy and disorder-Entropy of Universe-Temperature-Entropy (T-S) diagram-Change of entropy of a perfect gas-change of entropy when ice changes into steam.</p>
Jan 20	III	<p><b>3. Thermodynamic potentials and Maxwell’s equations</b></p> <p>Thermodynamic potentials-Derivation of Maxwell’s thermodynamic relations-Clausius-Clayperon’s equation-Derivation for ratio of specific heats-Derivation for difference of two specific heats for perfect gas. Joule Kelvin effect-expression for Joule Kelvin coefficient for perfect.</p>

Feb 20	IV	<p><b>4. Low temperature Physics</b></p> <p>Introduction-Joule Kelvin effect-liquefaction of gas using porous plug experiment Joule expansion-Distinction between adiabatic and Joule Thomson expansion-Expression for Joule Thomson cooling-Liquefaction of helium, Kapitza's method-Adiabatic demagnetization, Production of low temperatures -applications of substances at low-temperature-effects of chloro and fluoro carbons on ozone layer.</p>
March 20	V	<p><b>5. Quantum theory of radiation</b></p> <p>Blackbody-Ferry's black body-distribution of energy in the spectrum of black body-Wein's displacement law, Wein's law, Rayleigh-Jean's law-Quantum theory of radiation-Planck's law-Measurement of radiation-Types of pyrometers –Angstrom pyroheliometer-determination of solar constant, Temperature of Sun.</p>

## SEMESTER – V

2019-2020

### Teaching plan

Subject Code : **PHY 501C**

Title : **Electricity, Magnetism and Electronics**

Jun 19	I	<p><b>1.Electrostatics</b></p> <p>Gauss's law Statement and its proof-Electric field intensity due to (1) Uniformly charged sphere and (2) an infinite conducting sheet of charge. Electric potential- Equipotential surface –potential due to i) a point charge ii) charged spherical shell .</p> <p><b>2.Dielectrics</b></p> <p>Electric dipole moment and molecular polarizability- Electric displacement D, electric polarization P – relation between D, E, and P- Dielectric constant, susceptibility .</p>

Jul 19	II	<p><b>3. Electric and magnetic field</b> Biot – Savart’s law and calculation of B due to long straight wire, a circular current loop and solenoid. Hall effect-determination of Hall coefficient and applications.</p> <p><b>4. Electromagnetic induction</b> Faraday’s law – Lenz’s law self and mutual inductance, coefficient of coupling, calculation of self inductance of a long solenoid, energy stored in magnetic field. Transformer- energy losses and efficiency.</p>
aug 19	III	<p><b>5. Alternating current and electro magnetic waves</b> Alternating current –Relation between current and voltage in LR and CR circuits, vector diagrams, LCR series and parallel resonant circuit , Q- factor, power in AC circuits.</p> <p><b>6. Maxwell’s equations</b> Idea of displacement current- Maxwell’s equations (integral and differential forms ) (no derivation) Maxwell’s wave equation(with derivation), Transverse nature of electromagnetic wave. Pointing Vector (statement and proof) production of electromagnetic wave Hertz experiment.</p>
sep 19	IV	<p><b>7. Basic electronics:</b> PN junction diode Zener diode ,I-V characteristics, PNP and NPN Transistors, CB,CE and CC configuration Relation between <math>\alpha</math> <math>\beta</math> and <math>\Gamma</math> transistors (CE) characteristics, Transistor as an amplifier.</p>
Oct 19	V	<p><b>Digital electronics:</b> Number systems-conversion of binary to decimal system and vice versa. Binary addition and subtraction (1’s and 2’s complement methods) laws of Boolean algebra-De Morgan’s laws- statement and proof basic logic gates, NAND and NOR as universal gates Half adder and FULL adder.</p>

## SEMESTER – V

2019-2020 TEACHING PLAN

Subject Code: PHY- 502C

Title : MODERN PHYSICS

Jun 19	I	<p><b>1. Atomic and molecular physics</b> Introduction – Drawbacks of Bohr’s atomic model – Sommerfeld’s elliptical orbits- relativistic correction (no derivation). Vector atom model and Stern &amp; Gerlach experiment - quantum numbers associated with it. L-S and j-j coupling schemes. Zeeman Effect and its experimental study. Raman effect, stokes and Anti stokes lines . Quantum theory of Raman effect. Experimental arrangement – Applications of Raman effect.</p>
July 19	II	<p><b>2. Matter waves &amp; Uncertainty Principle</b> Matter waves, de Broglie’s hypothesis – wavelength of matter waves, Properties of matter waves – Davisson and Germer experiment, uses of electron diffraction-Phase velocity and Group velocity (definitions only)- relation between phase velocity and Group velocity–Heisenberg’s uncertainty principle for position and momentum (x and p) &amp; energy and time (E and t). Experiment verification.</p>
Aug 19	III	<p><b>3. Quantum (wave) mechanics</b> Basic postulates of quantum mechanics – Schrodinger time independent and time dependent wave equation – derivations. Physical interpretation of wave function. Applications of Schrodinger wave equation to particle in one dimensional infinite box. Harmonic oscillator.</p>
Sep 19	IV	<p><b>4. General properties of Nuclei</b> Basic ideas of nucleus – size, mass, charge density (matter energy), binding energy, angular momentum, parity, magnetic moment, electric quadrupole moments. Liquid drop model and shell model (qualitative aspects only)- Magic numbers.</p> <p><b>5. Radioactivity decay</b> Alpha decay : basis of <math>\alpha</math> – decay processes. Range of <math>\alpha</math>-particles , Geiger’s Law, Geiger- Nuttal law. <math>\beta</math> – decay, <math>\beta</math> ray continuous and discrete spectrum, neutrino hypothesis.</p>



Oct 19	V	<p><b>6. Crystal structure</b> Amorphous and crystalline materials, unit cell, Miller indices, reciprocal lattice, types of lattices, diffraction of X-rays by crystals, Bragg's law, experimental techniques, Laue's method and powder diffraction method.</p> <p><b>7. Superconductivity:</b> Introduction – experimental facts, critical temperature – critical field – Meissner effect – isotope effect – Type I and Type II superconductors – BCS theory (elementary ideas only) – applications of superconductors.</p>
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## SEMESTER – VI

### 2019-2020 TEACHING PLAN

Subject Code: **PHY 601 GE(c)** Title : **ANALOG AND DIGITAL ELECTRONICS**

Nov 19	I	<p><b>1. FET Construction</b> ,Working ,Characteristics and uses; <b>MOSEFT</b>-enhancement MOSEFT,Depletion MOSEFT, Construction and Working, drain Characteristics of MOSEFT, applications of MOSEFT.</p> <p><b>2. Photo electric devices:</b> structure and operation, Characteristics and applications of LED and LCD.</p>
Dec 19	II	<p><b>3.Operational amplifier:</b> Characteristics of ideal and practical OP-amp (IC-741),Basic differential OP-amp supply voltage, IC identification, internal blocks of OP-amp, its parameter off set voltages and currents, CMRR, slew rate, Concept of Virtual ground.</p>
Jan 20	III	<p><b>4.Applications of OP-amp:</b> OP-amp as voltage amplifier, inverting amplifier, Non- inverting amplifier, Voltage follower, summing amplifier, difference amplifier, comparator, Integrator, Differentiator.</p>
Feb 20	IV	<p><b>5. Data processing circuits:</b> Multiplexers, De – Multiplexers, encoders, decoders, Characteristics</p> <p><b>6. For Digital IC's</b> –RTL, DTL,TTL, CMOS (NAND&amp;NOR Gates</p>

Marc 20	V	<p><b>7 .Sequential digital circuits:</b> Flip-flops, RS, clocked SR, JK, D, T, Master-Slave Flip-flops .</p> <p><b>8. Counters:</b> Asynchronous counters-modulo 4counter-modulo 16 ripple counter, Decade counter, Synchronous counter.</p>

## SEMESTER – VI

### 2019-2020 TEACHING PLAN

Subject Code: **PHY 602 CE(1)**

Title : **INTRODUCTION TO MICROPROCESSOR AND MICROCONTROLLER**

Nov 19	I	<p><b>MICROPROCESSOR:</b> General architecture of microprocessor, architecture of 8085 microprocessor, 8085 pin diagram, Concept of data bus, address bus, and control bus, 8085 programming instruction classification.</p>
Dec 19	II	<p><b>8085 Interfacing Memory</b> Introduction-Memory structure and its requirements-basic concepts in memory interfacing. Address Decoding-Interfacing circuit. Port-mapped I/O or Direct I/O interface (8-bit Addressing)-Memory Indirect I/O mapped Interfaces (16-bit Addressing)-Port mapped versus Memory mapped I/O. I/O Device Interfacing.</p>
Jan 20	III	<p><b>8085 Microprocessor Applications</b> Introduction-Programmed data transfer scheme. Direct Memory Access (DMA) –Types. 8255A PPI-Block diagram. 8259A PIC-Pin diagram and functional description. 8257 Programmable DMA controller-Block diagram and Pin description.</p>
Feb 20	IV	<p><b>8051 Architecture-I:</b> Types of microcontrollers- microcontroller architecture, CISC, RISC, operation of microcontroller, basic building blocks of microcontroller, comparison of microcontroller and microprocessor- block diagram of 8051-I/o pins and ports. Microcontroller Resources.</p>

Mar 20	V	<b>8051 Architecture-II:</b> 8051 Flag bits and PSW register and DPTR register- Memory Organization- Special function registers- PSW register-Counters and Timers-Serial I/O-8051 Microcontroller Interrupts.

## SEMESTER – VI

### 2019-2020 TEACHING PLAN

Subject Code: **PHY 603C**

Title: **Computational Methods and Programming**

Nov 19	I	<p>1. Fundamentals of C language: C character set – Identifiers and keywords – structure of c program. Constants- variables- Data types- Declarations of variables – Declaration of storage class – Defining symbolic constants – Assignment statement.</p> <p>2.Operators : Arithmetic operators- Relational operators – Logic operators – Assignment operators – Increment and decrement operators – Conditional operators</p>
Dec 19	II	<p>3.Expressions and I/O statements : Arithmetic expressions – precedence of arithmetic operators – Type converters in expressions – Mathematical ( Library) functions – Data input and output – The getchar and putchar functions – Scanf – Printf simple programs.</p> <p>4.Control statements: IF – ELSE statements – Switch statements – The operators – GO TO-while, DO-While, FOR statements – BREAK and CONTINUE statements.</p>
Jan 20	III	<p>5.Arrays: One dimensional and two dimensional arrays – Initialization –Type declaration – Inputting and outputting of data for arrays – Programs of matrices addition, subtraction and multiplication.</p> <p>6.User defined functions: The form of C functions – Return values and their types – Calling a function – Category of functions. Nesting of functions. Recursion. ANSI C functions – Function</p>

		declaration. Scope and life of variables in functions.
Feb 20	IV	7.Linear and Non-Linear equations: Solution of Algebra and transcendental equations – Bisection, Falsi position and Newton – Rhapson methods – Basic principles – Formulae – algorithms. 8.Simultaneous equations: Solutions of simultaneous linear equations – Guass elimination and Gauss seidel iterative methods – Basic principles – Formulae- Algorithms
Mar 20	V	Interpolations : Concept of linear interpolation – Finite differences – Newton’s and Lagrange’s interpolation formulae – principles and Algorithms. 9.Numerical differentiation and integration : Numerical differentiation – algorithm for evaluation of first order derivatives using formulae based on Taylor’s series – Numerical integration – Trapezodal and Simpson’s 1/3 rule – Algorithms.

## SEMESTER – VI

### 2019-2020 TEACHING PLAN

Subject Code: **PHY 604 CE**

Title : **Electronic Instrumentation**

NOV 19	I	<ol style="list-style-type: none"> <li>1. Basic of measurements: Instruments accuracy, precision, sensitivity- errors in measurements- Basic meter movement- PMMC (Permanent Magnetic Moving Coil).</li> <li>2. Measurement of dc current: DC ammeter- multi range ammeters-the ARYTON Shunt or universal Shunt.</li> <li>3. Measurement of dc voltage: DC Voltmeter – Multi Range Voltmeter- Voltmeter sensitivity.</li> </ol>
DEC 19	II	<p><b>4.Analog Multimeter:</b> Multimeter - as dc ammeter-as dc voltmeter-as ac voltmeter- as ohm meter-Multimeter operating instructions.</p> <p>5.Digital instruments: Principle and working of digital instruments, characteristics of a digital meter, working principle of digital voltmeter.</p>

JAN 20	III	<p>6.CRO: Block diagram of basic CRO, construction of CRT, electron gun, electrostatic focusing and acceleration (only explanation), time base operation, synchronization, front panel controls, specifications of CRO and their significance.</p> <p>7.Applications CRO: Measurement of voltage-dc and ac, frequency, time period. Special features of dual trace CRO. Digital storage oscilloscope: block diagram and principle of working.</p>
FEB 20	IV	<p>8.Diode as Rectifier – Half wave rectifier, Full wave rectifier – construction, working and efficiency. (no derivation)</p> <p>9.Feedback in Electronic circuits – Positive and Negative feedback, expressions for gains, advantages of negative feedback, Oscillators, Barkhausen criteria, RC phase shift oscillator (no derivation)</p>
MAR 20	V	<p>10.Signal Generators: Block diagram, working and specifications of low frequency signal generators, pulse generator, function generator .</p> <p>11.Bridges: Measurement of resistance by Wheat stone's Bridge- Sensitivity of Wheat stone's Bridge- Applications of Wheat stone's Bridge- Limitations of Wheat stone's Bridge.</p>

**A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYURU**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**2019-2020**  
**SEMESTER – I**  
**CURRICULAR PLAN/ TEACHING PLAN**

**SEMESTER-I**

**CLASS: I MPC's,MCC's**

**Subject Code: CSC-101 Title: Computer Fundamentals & Photoshop Year:2019-20**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
JUNE-2019	I	Introduction to computers, characteristics and limitations of computer, Block diagram of computer, types of computers, uses of computers, computer generations. Number systems: binary, hexa and octal numbering system.
JULY -2019	II	Input and output devices: Keyboard and mouse, inputting data in other ways, Types of Software: system software, Application software, commercial, open source, domain and freeware software, Memories: primary, secondary and cache memory. Windows basics: desktop, start menu, icons.
AGU-2019	III	Introduction to Adobe Photoshop, Getting started with Photoshop, creating and saving a document in Photoshop, page layout and back ground, Photoshop program window-title bar, menu bar ,option bar ,image window ,image title bar ,status bar, ruler ,paletts, tool box ,screen modes ,saving files ,reverting files ,closing files.
SEP-2019	IV	<b>Images:</b> working with images, image size and resolution, image editing, colour modes and adjustments, Zooming & Panning an Image, Rulers, Guides & Grids- Cropping & Straightening an Image, image backgrounds, making selections. <b>Working with tool box:</b> working with pen tool, save and load selection-working with erasers-working with text and brushes-Colour manipulations: colour modes- Levels Curves - Seeing Colour accurately - Patch tool – Cropping-Reading your palettes - Dust and scratches- Advanced Retouching- smoothing skin.
OCT 2019	V	<b>Layers:</b> Working with layers- layer styles- opacity-adjustment layers <b>Filters:</b> The filter menu, Working with filters- Editing your photo shoot, presentation –how to create adds , artistic filter, blur filter, brush store filter, distort filters, noice filters, pixelate filters, light effects, difference clouds, sharpen filters, printing.

**SEMESTER-I****CLASS: I B.COM(CA)****Subject Code: CCSC-103C Title: Computer Fundamentals & Photoshop Year:2019-20**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
JUNE-2019	I	Introduction to computers, characteristics and limitations of computer, Block diagram of computer, types of computers, uses of computers, computer generations. Number systems: binary, hexa and octal numbering system.
JULY -2019	II	Input and output devices: Keyboard and mouse, inputting data in other ways, Types of Software: system software, Application software, commercial, open source, domain and freeware software, Memories: primary, secondary and cache memory. Windows basics: desktop, start menu, icons.
AGU-2019	III	Introduction to Adobe Photoshop, Getting started with Photoshop, creating and saving a document in Photoshop, page layout and back ground, Photoshop program window-title bar, menu bar ,option bar ,image window ,image title bar ,status bar, ruler ,paletts, tool box ,screen modes ,saving files ,reverting files ,closing files.
SEP-2019	IV	<b>Images:</b> working with images, image size and resolution, image editing, colour modes and adjustments, Zooming & Panning an Image, Rulers, Guides & Grids- Cropping & Straightening an Image, image backgrounds, making selections. <b>Working with tool box:</b> working with pen tool, save and load selection-working with erasers-working with text and brushes-Colour manipulations: colour modes- Levels Curves - Seeing Colour accurately - Patch tool – Cropping-Reading your palettes - Dust and scratches- Advanced Retouching- smoothing skin.
OCT 2019	V	<b>Layers:</b> Working with layers- layer styles- opacity-adjustment layers <b>Filters:</b> The filter menu, Working with filters- Editing your photo shoot, presentation –how to create adds , artstic filter, blur filter, brush store filter, distort filters, noice filters, pixelate filters, light effects, difference clouds, sharpen filters, printing.

**SEMESTER-III****CLASS: II MPCs, MCCs****Subject Code: CSC-301C Title: Object Oriented Programming using JAVA Year:2019-20**

Month	Unit No.	Topic to be covered
JUNE-2019	I	<b>Fundamentals of Object – Oriented Programming:</b> Introduction, Object Oriented paradigm, Basic Concepts of OOP, Benefits of OOP, Applications of OOP, Java features: <b>Overview of Java Language:</b> Introduction, Simple Java program structure, Java tokens, Java Statements, Implementing a Java Program, Java Virtual Machine, Command line arguments. <b>Constants, Variables &amp; Data Types:</b> Introduction, Constants, Variables, Data Types, Declaration of Variables, Giving Value to Variables, Scope of variables, Symbolic Constants, Type casting, Getting Value of Variables, Standard Default values; <b>Operators &amp; Expressions.</b>
JULY – 2019	II	<b>Decision Making &amp; Branching:</b> Introduction, Decision making with if statement, Simple if statement, if-Else statement, Nesting of if-else statements, the else if ladder, the switch statement, the conditional operator. <b>Looping:</b> Introduction, While statement, do-while statement, for statement, Jumps in loops. <b>Classes, Objects &amp; Methods:</b> Introduction, Defining a class, Adding variables, Adding methods, Creating objects, Accessing class members, Constructors, Method overloading, Static members, Nesting of methods;
AGU-2019	III	<b>Inheritance:</b> Extending a Class, Overriding Methods, Final Variables and Methods, Final Classes, Abstract Methods and Classes; <b>Arrays, Strings And Vectors:</b> Arrays, One-dimensional arrays, Creating an array, Two – dimensional arrays, Strings, Vectors, Wrapper classes; <b>Interfaces: Multiple Inheritance:</b> Introduction, Defining interfaces, Extending interfaces, Implementing interfaces, Assessing interface variables;
SEP-2019	IV	<b>Multithreaded Programming:</b> Introduction, Creating Threads, Extending the Threads, Stopping and Blocking a Thread, Lifecycle of a Thread, Using Thread Methods, Thread Exceptions, Thread Priority, Synchronization, Implementing the ‘Runnable’ Interface. <b>Managing Errors And Exceptions:</b> Types of errors: Compile-time errors, Runtime errors, Exceptions, Exception handling, Multiple Catch Statements, Using finally statement,
OCT 2019	V	<b>Applet Programming:</b> local and remote applets, Applets and Applications, Building Applet code, Applet Life cycle: Initialization state, Running state, Idle or stopped state, Dead state, Display state. <b>Packages:</b> Introduction, Java API Packages, Using System Packages, Naming conventions, Creating Packages, Accessing a Package, using a Package. <b>Managing Input/ Output Files in Java:</b> Introduction, Concept of Streams, Stream classes, Byte Stream Classes, Input Stream Classes, Output Stream Classes, Character Stream classes: Reader stream classes, Writer Stream classes, Using Streams.



**SEMESTER-III****CLASS: II B.COM(CA)****Subject Code: CCSC-301C Title: Office Automation Tools JAVA Year:2019-20**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
JUNE-2019	I	<b>MS-Excel:</b> features of Ms-Excel, Parts of MS-Excel window, entering and editing data in worksheet, number formatting in excel, different cell references, how to enter and edit formula in excel, auto fill and custom fill, printing options.
JULY – 2019	II	<b>Formatting options:</b> Different formatting options, change row height, formulae and Functions, <b>Functions:</b> Meaning and advantages of functions, different types of functions available in Excel.
AGU-2019	III	<b>Charts:</b> Different types of charts, Parts of chart, chart creation using wizard, chart operations, data maps, graphs, data sorting, filtering. Excel sub totals, scenarios, what-if analysis. <b>Macro:</b> Meaning and advantages of Macros, creation, editing and deletion of macros - Creating a macro, how to run, how to delete a macro.
SEP-2019	IV	<b>MS Access: Creating a Simple Database and Tables:</b> Features of Ms-Access, Creating a Database, Parts of Access. <b>Tables:</b> table creation using design view, table wizard, data sheet view, import table, link table. <b>Forms:</b> The Form Wizard, design view, columnar, tabular, data sheet, chart wizard.
OCT 2019	V	<b>Finding, Sorting and Displaying Data:</b> Queries and Dynasts, Creating and using select queries, Returning to the Query Design, Multi-level sorts, Finding incomplete matches, showing All records after a Query, saving queries - Crosstab Queries. <b>Printing Reports:</b> Form and Database Printing.

**SEMESTER-III****CLASS: II B.A,B.COM(CA), B.Sc****Subject Code: ICT-II-301C Title: Internet Fundamentals and Web Tools Year:2019-20**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
JUNE-2019	I	<b>Fundamentals of Internet :</b> Networking Concepts, Data Communication – Types of Networking, Internet and its Services, Internet Addressing – Internet Applications – Computer Viruses and its types – Browser –Types of Browsers.
JULY – 2019	II	<b>Internet applications:</b> Using Internet Explorer, Standard Internet Explorer Buttons, Entering a Web Site Address, Searching the Internet – Introduction to Social Networking: twitter, tumblr, LinkedIn, face book, flicker, Skype, yelp, vimeo, yahoo, Google+, YouTube, WhatsApp, etc.
AGU-2019	III	<b>E-mail :</b> Definition of E-mail - Advantages and Disadvantages – User-Ids, Passwords, Email Addresses, Domain Names, Mailers, Message Components, Message Composition, Mail Management, Email Inner Workings.
SEP-2019	IV	<b>WWW-</b> Web Applications, Web Terminologies, Web Browsers, URL – Components of URL, Searching WWW – Search Engines and Examples.
OCT 2019	V	<b>Basic HTML:</b> Basic HTML – Web Terminology – Structure of a HTML Document – HTML, Head and Body tags – Semantic and Syntactic Tags – HR, Heading, Font, Image and Anchor Tags –Different types of Lists using tags – Table Tags, Image formats – Creation of simple HTML Documents.

SEMESTER –V

CLASS: III MPCs

Subject Code: CSC-501C Title: Data Base Management Systems Year:2019-20

Month	Unit No.	Topic to be covered
JUNE-2019	I	<b>Database Systems Introduction:</b> <i>Database Systems:</i> Introducing the database and DBMS, Why the database is important, <i>Historical Roots:</i> Files and File Systems, Problems with File System, Data Management, Database Systems. <i>Data Models:</i> The importance of Data models, Data Model Basic Building Blocks, The evaluation of Data Models, Degree of Data Abstraction.
JULY - 2019	II	<b>Relational Database &amp; Data Modelling:</b> <i>The Relational Database Model:</i> A logical view of Data, Keys, Integrity Rules, Relational Set Operators, The Data Dictionary and the system Catalog, Indexes, Codd's relational database rules. <i>Entity Relationship Model:</i> The ER Model <b>Advanced Data Modelling:</b> The Extended Entity Relationship Model, Entity clustering, Entity integrity.
AGU-2019	III	<b>Normalization and Database Design:</b> <i>Normalization of database tables:</i> Data base Tables and Normalization, The need for Normalization, The normalization Process, High level Normal Forms, Normalization and database design, denormalization. <i>Database Design:</i> The Information System, The Systems Development Life Cycle, The Database Life Cycle, Centralized Vs Decentralized design.
SEP-2019	IV	<b>Structured Query Language:</b> <i>Introduction to SQL:</i> Data Definition Commands, Data Manipulation Commands, Select queries, Advanced Data Definition Commands, Advanced Select queries, Virtual Tables, SQL Join Operators, Sub queries and correlated queries, SQL Functions.
OCT 2019	V	<b>Procedural SQL:</b> <i>Introduction to PL/SQL:</i> Triggers, Stored Procedures, PI/ SQL Stored Function.

SEMESTER –V

CLASS: III MPCs

Subject Code: CSC-502C Title: Software Engineering

Year:2019-20

Month	Unit No.	Topic to be covered
JUNE-2019	I	<b>Introduction to Software Engineering &amp; Process:</b> <i>The Evolving Role of Software</i> – Software - The Changing Nature of Software, Software Myths, Legacy Software. <i>Process:</i> Software Engineering-A Layered Technology - A Process Framework - The Capability Maturity Model Integration (CMMI) - Process Patterns, Process Assessments - Personal And Team Process Models: Personal Software Process(PSP), Team Software Process (TSP).
JULY -2019	II	<b>Process Models:</b> The Waterfall Models - Increment Process Models: The Increment Model, The RAD Model - Evolutionary Process Models: Prototyping, The Spiral Model, The Concurrent Development Model - The Unified Process: Phases of The United Process, Unified Process Work Products.
AGU-2019	III	<b>Requirements Engineering:</b> Requirements Engineering Tasks - Initiating The Requirements Engineering Process - Eliciting Requirements: Collaborative Requirements Gathering, Quality Function Deployment, User Scenarios, Elicitation Work Products - Negotiating Requirements - Validating Requirements.
SEP-2019	IV	<b>Analysis Model :</b> Requirements Analysis -Analysis Modelling Approaches - Data Modelling Concepts - Object-Oriented Analysis - Scenario-based Modelling - Flow-Oriented Modelling - Class-Based Modelling - Creating a Behavioural Model: Identifying Events with the Use-Case, State Representations.
OCT 2019	V	<b>Design Engineering :</b> Design Process And Design Quality - Design Concepts - The Design Model: Data Design Elements, Architectural Design Elements, Interface Design Elements, Component-Level Design Elements, Deployment -Level Design Elements.

SEMESTER –V

CLASS: III B.COM(CA)

Subject Code: CCSC-505C Title: Programming in “C” Year:2019-20

Month	Unit No.	Topic to be covered
JUNE-2019	I	<b>Introduction to Algorithms and Programming Languages:</b> Algorithm – Key features of Algorithms – Some more Algorithms – Flow Charts. Introduction to C: Structure of C Program – Writing the first C Program – File used in C Program – Compiling and Executing C Programs Using Comments – Keywords – Identifiers – Basic Data Types in C – Variables Constants – I/O Statements in C- Operators in C- Programming Examples – Type Conversion and Type Casting
JULY -2019	II	<b>Decision Control and Looping Statements</b> Introduction to Decision Control Statements – Conditional Branching Statements – Iterative Statements – Nested Loops – Break and Continue Statement – Go to Statement.
AGU-2019	III	<b>Functions:</b> Introduction – using functions – Function declaration/prototype – Function definition – function call – return statement – Passing parameters – Scope of variables – Storage Classes – Recursive function
SEP-2019	IV	<b>Arrays</b> Introduction – Declaration of Arrays – Accessing elements of the Array – Storing Values in Array Calculating the length of the Array – Operations on Array – one dimensional array for inter-function communication – Two dimensional Arrays – Operations on Two Dimensional Arrays <b>Strings:</b> Introduction String and Character functions
OCT 2019	V	<b>Pointers:</b> Understanding Computer Memory – Introduction to Pointers – declaring Pointer Variables Passing Arguments to Functions using Pointer. Structure, Union, and Enumerated Data Types: Introduction – Nested Structures – Unions – Enumerated Data Types.

SEMESTER –V

CLASS: III B.COM(CA)

**Subject Code:** CCSC-506C **Title:** Data Base Management Systems **Year:**2019-20

Month	Unit No.	Topic to be covered
JUNE-2019	I	<b>Database Systems Introduction:</b> <i>Database Systems:</i> Introducing the database and DBMS, Why the database is important, <i>Historical Roots:</i> Files and File Systems, Problems with File System, Data Management, Database Systems. <i>Data Models:</i> The importance of Data models, Data Model Basic Building Blocks, The evaluation of Data Models.
JULY – 2019	II	<b>Relational Database &amp; Data Modelling :</b> <i>The Relational Database Model:</i> A logical view of Data, Keys, Integrity Rules, Relational Set Operators, Indexes, Codd's relational database rules. <i>Entity Relationship Model:</i> The ER Model <i>Advanced Data Modelling:</i> The Extended Entity Relationship Model, Entity clustering.
AGU-2019	III	<b>Normalization and Database Design:</b> <i>Normalization of database tables:</i> Database Tables and Normalization, The need for Normalization, The Normalization Process, High level Normal Forms, Normalization and database design, de normalization.
SEP-2019	IV	<b>Structured Query Language:</b> <i>Introduction to SQL:</i> Data Definition Commands, Data Manipulation Commands, Select queries, Advanced Data Definition Commands, Advanced Select queries, Virtual Tables, SQL Join Operators.
OCT 2019	V	<b>Procedural SQL</b> <i>Introduction to PL/SQL :</i> Triggers, Stored Procedures, PL/ SQL Stored Functions

SEMESTER –V

CLASS: III B.COM(CA)

Subject Code: CCSC-507C Title: Web Technologies

Year:2019-20

Month	Unit No.	Topic to be covered
JUNE-2019	I	<b>Introduction to XHTML:</b> Introduction to HTML, Basic html, Document body text, Hyper links, Adding more formatting Lists, Tables, Images, Multimedia Objects, Frames, Forms and XHTML.
JULY - 2019	II	<b>CSS:</b> Cascading Style Sheets: Introduction, Defining your own styles, properties and values in styles, Formatting blocks of information, Layers. <b>Java Script:</b> java Script, the basics, Variables, String Manipulations, Mathematical functions, Statements, Operators, Arrays, Functions.
AGU-2019	III	<b>Objects in Java Script &amp; Dynamic HTML with Java Script</b> <i>Objects in Java Script:</i> Data and objects in java script, Regular expressions, Exception Handling, Built in objects, Events. <i>Dynamic HTML with Java Script:</i> Data validation, Opening a new window, Messages and Confirmations, The status bar, Writing to a different frame, Rollover buttons, Moving images, Multiple pages in a single download, A text-only menu system, Floating logos.
SEP-2019	IV	<b>XML Defining Data for Web Applications</b> <i>XML:</i> Introduction to XML, Basic XML, document type definition, XML Schema, Document object model, presenting XML, Using XML parser.
OCT 2019	V	<b>JSP:</b> JSP Lifecycle, Basic Syntax, EL (Expression Language), EL Syntax, Using EL Variables

**SEMESTER –II****CLASS: II B.Sc(MPCs,MCCs)****Subject Code:CSC-201C****Title::Programming in “C”****Year:2019-20**

Month	Unit No.	Topic to be covered
NOV-2019	I	<p><b>Introduction to Algorithms and Programming Languages:</b> Algorithm – Key features of Algorithms -Some more Algorithms – Flow Charts – Pseudo code – Programming Languages – Generation of Programming Languages – Structured Programming Language.</p> <p><b>Introduction to C:</b> Introduction – Structure of C Program – Writing the first C Program –File used in C Program – Compiling and Executing C Programs – Using Comments – Keywords – Identifiers – Basic Data Types in C – Variables – Constants – I/O Statements in C- Operators in C- Programming Examples – Type Conversion and Type Casting</p>
DEC – 2019	II	<p><b>Decision Control and Looping Statements:</b> Introduction to Decision Control Statements –Conditional Branching Statements – Iterative Statements – Nested Loops – Break and Continue Statement – Goto Statement <b>Functions:</b> Introduction – using functions – Function declaration/ prototype – Function definition – function call – return statement – Passing parameters – Scope of variables –Storage Classes Recursive functions – Type of recursion – Towers of Hanoi – Recursion vs Iteration.</p>
JAN-2020	III	<p><b>Arrays:</b> Introduction – Declaration of Arrays – Accessing elements of the Array – Storing Values in Array – Calculating the length of the Array – Operations on Array – one dimensional array for inter-function communication – Two dimensional Arrays – Operations on Two Dimensional Arrays - Two Dimensional Arrays for inter-function communication – Multidimensional Arrays – Sparse Matrices <b>Strings:</b> Introduction –Suppressive Input – String Taxonomy – String Operations – Miscellaneous String and Character functions.</p>
FEB-2020	IV	<p><b>Pointers:</b> Understanding Computer Memory – Introduction to Pointers – declaring Pointer Variables – Pointer Expressions and Pointer Arithmetic – Null Pointers – Generic Pointers - Passing Arguments to Functions using Pointer – Pointer and Arrays – Passing Array to Function – Difference between Array Name and Pointer – Pointers and Strings – Array of pointers – Memory Allocation in C Programs – Memory Usage – Dynamic Memory Allocation – Drawbacks of Pointers</p> <p><b>Structure, Union, and Enumerated Data Types:</b> Introduction – Nested Structures – Arrays of Structures – Structures and Functions – Self referential Structures – Union – Arrays of Unions Variables – Unions inside Structures – Enumerated Data Types.</p>



MAR-2020	V	<b>Files:</b> Introduction to Files – Using Files in C – Reading Data from Files – Writing Data from Files – Detecting the End-of-file – Error Handling during File Operations – Accepting Command Line Arguments – Functions for Selecting a Record Randomly - Remove() – Renaming a File – Creating a Temporary File.
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**SEMESTER –II****CLASS: II B.COM(CA)****Subject Code:CCSC-203C Title::Enterprise Resource Planning Year:2019-20**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
NOV-2019	I	<b>Introduction:</b> Overview of enterprise systems – Evolution - Risks and benefits - Fundamental technology - Issues to be consider in planning design and implementation of cross functional integrated ERP systems.
DEC – 2019	II	<b>ERP Solutions and Functional Modules:</b> Overview of ERP software solutions- Small, medium and large enterprise vendor solutions, BPR and best business practices - Business process Management, Functional modules.
JAN-2020	III	<b>ERP Implementation:</b> Planning Evaluation and selection of ERP systems - Implementation life cycle - ERP implementation, Methodology and Frame work- Training – Data Migration - People Organization in implementation-Consultants, Vendors and employees.
FEB-2020	IV	<b>Post Implementation:</b> Maintenance of ERP- Organizational and Industrial impact; Success and Failure factors of ERP Implementation.
MAR-2020	V	<b>Emerging Trends on ERP:</b> Extended ERP systems and ERP add-ons -CRM, SCM, Business analytics - Future trends in ERP systems-web enabled, Wireless technologies, cloud computing.

**SEMESTER –II****CLASS: II B.A,B.COM(CA),B.Sc****Subject Code:ICT-I-201 Title::Computer Fundamentals & Office Tools Year:2019-20**

Month	Unit No.	Topic to be covered
NOV-2019	I	<b>Basics of Computers</b> Definition of a Computer - Characteristics and Applications of Computers – Block Diagram of a Digital Computer – Classification of Computers based on size and working Central Processing Unit – Input, Output and I/O Devices.
DEC – 2019	II	<b>Memory Devices &amp; Operating Systems</b> Primary, Auxiliary and Cache Memory – Memory Devices – Software, Hardware, Firmware and People ware –Definition and Types of Operating System – Functions of an Operating System – MS-DOS MS-Windows – Desktop, Computer, Documents, Pictures, Music, Videos, Recycle Bin, Task Bar – Control Pane.
JAN-2020	III	<b>MS-Word</b> Features of MS-Word – MS-Word Window Components – Creating, Editing, Formatting and Printing of Documents – Headers and Footers – Insert/Draw Tables, Table Auto format – Page Borders and Shading – Inserting Symbols, Shapes, Word Art, Page Numbers, Equations – Spelling and Grammar – Thesaurus – Mail Merge.
FEB-2020	IV	<b>MS-PowerPoint</b> Features of PowerPoint – Creating a Blank Presentation - Creating a Presentation using a Template - Inserting and Deleting Slides in a Presentation – Adding Clip Art/Pictures - Inserting Other Objects, Audio, Video - Resizing and Scaling of an Object – Slide Transition – Custom Animation
MAR-2020	V	<b>MS-Excel</b> Overview of Excel features – Creating a new worksheet, Selecting cells, Entering and editing Text, Numbers, Formulae, Referencing cells – Inserting Rows/Columns – Changing column widths and row heights, auto format, changing font sizes, colors, shading and attributes – Data Sorting and Filters – Functions – Functions requiring Addins, Functions by category Creating different types of Charts

**SEMESTER –IV**

**CLASS: II B.Sc(MPCs,MCCs)**

**Subject Code: CSC-401C**

**Title: Data Structures**

**Year:2019-20**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
NOV-2019	I	<b>Concept of Abstract Data Types (ADTs)-</b> Data Types, Data Structures, Storage Structures, and File Structures, Primitive and Non-primitive Data Structures, Linear and Non-linear Structures. <b>Linear Lists</b> - ADT, Array and Linked representations, Pointers. <b>Arrays</b> - ADT, Mappings, Representations, Sparse Matrices, Sets - ADT, Operations <b>Linked Lists:</b> Single Linked List, Double Linked List, Circular Linked List, applications
DEC -2019	II	<b>Stacks:</b> Definition, ADT, Array and Linked representations, Implementations and Applications <b>Queues:</b> Definition, ADT, Array and Linked representations, Circular Queues, De-queues, Priority Queues, Implementations and Applications.
JAN-2020	III	<b>Trees:</b> Binary Tree, Definition, Properties, ADT, Array and Linked representations, Implementations and Applications. Binary Search Trees (BST) - Definition, ADT, Operations and Implementations, BST Applications. Threaded Binary Trees, Heap trees.
FEB-2020	IV	<b>Graphs</b> – Graph and its Representation, Graph Traversals, Connected Components, Basic Searching Techniques, Minimal Spanning Trees.
MAR-2020	V	<b>Sorting and Searching:</b> Selection, Insertion, Bubble, Merge, Quick, Heap sort, Sequential And Binary Searching.

**SEMESTER –IV**

**CLASS: II B.COM(CA)**

**Subject Code: CCSC-403C**

**Title: Bussiness Analytics**

**Year:2019-20**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
NOV-2019	I	Introduction - Business Analytics Life Cycle - Business Analytics Process - Data concepts - Data exploration & visualization - Business Analytics as Solution for Business Challenges .
DEC -2019	II	Automated Data Analysis: Tabulation and Cross Tabulation of Data: Univariate, Bivariate and Multivariate Data Analysis – ANOVA.
JAN-2020	III	Hypothesis Testing: Type 1 & 2 errors - T-test, ANOVA, Chi-Square and correlation- Linear Regression Analysis - Logistic Regression - Cluster Analysis - Market Basket Analysis.
FEB-2020	IV	Business Data Management: Master Data Management: Data Warehousing and kinds of Architecture – Data Extraction – Transformation and Up-loading of Data – Data Mining – Meta Data – Data Marts – Creating Data Marts – Data Integration – OLTP and OLAP.
MAR-2020	V	SPSS Packages – Applications and Case Studies.

**SEMESTER –VI**

**CLASS: III B.Sc(MPCs)**

**Subject Code: CSC-601(GE) Title: Web Technologies Year: 2019-20**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
NOV-2019	I	<b>Introduction to XHTML:</b> Introduction to HTML, Basic html, Document body text, Hyper links, Adding more formatting Lists, Tables, Images, Multimedia Objects, Frames, Forms and XHTML.
DEC -2019	II	<b>CSS:</b> Cascading Style Sheets: Introduction, Defining your own styles, properties and values in styles, Formatting blocks of information, Layers. <b>Java Script:</b> java Script, the basics, Variables, String Manipulations, Mathematical functions, Statements, Operators, Arrays, Functions.
JAN-2020	III	<b>Objects in Java Script &amp; Dynamic HTML with Java Script</b> <i>Objects in Java Script:</i> Data and objects in java script, Regular expressions, Exception Handling, Built in objects, Events. <i>Dynamic HTML with Java Script:</i> Data validation, Opening a new window, Messages and Confirmations, The status bar, Writing to a different frame, Rollover buttons, Moving images, Multiple pages in a single download, A text-only menu system, Floating logos.
FEB-2020	IV	<b>XML Defining Data for Web Applications</b> <i>XML:</i> Introduction to XML, Basic XML, document type definition, XML Schema, Document object model, presenting XML, Using XML parser.
MAR-2020	V	<b>JSP:</b> JSP Lifecycle, Basic Syntax, EL (Expression Language), EL Syntax, Using EL Variables.

**SEMESTER –VI**

**CLASS: III B.Sc(MPCs)**

**Subject Code: CSC-602CE Title: PHP, MySql & Word Press Year: 2019-20**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
NOV-2019	I	<b>Installing and Configuring MySQL:</b> Current and Future Versions of MySQL, How to Get MySQL, Installing MySQL on Windows, Trouble Shooting your Installation, Basic Security Guidelines, Introducing MySQL Privilege System, Working with User Privileges. <b>Installing and Configuring Apache:</b> Current and future versions of Apache, Choosing the Appropriate Installation Method, Installing Apache on Windows, Apache Configuration File Structure, Apache Log Files, Apache Related Commands, Trouble Shooting. <b>Installing and Configuring PHP:</b> Building PHP with Apache on Windows, php.ini.Basics, The Basics of PHP scripts. The Building blocks of PHP: Variables, Data Types, Operators and Expressions, Constants. Flow Control Functions in PHP: Switching Flow, Loops, Code Blocks and Browser Output.
DEC -2019	II	<b>Working with Functions:</b> What is function?, Calling functions, Defining Functions, Returning the values from User-Defined Functions, Variable Scope, Saving state between Function calls with the static statement, more about arguments. <b>Working with Arrays:</b> What are Arrays? Creating Arrays, Some Array-Related Functions. <b>Working with Objects:</b> Creating Objects, Object Instance <b>Working with Strings, Dates and Time:</b> Formatting strings with PHP, Investigating Strings with PHP, Manipulating Strings with PHP, Using Date and Time Functions in PHP.
JAN-2020	III	<b>Working with Forms:</b> Creating Forms, Accessing Form Input with User defined Arrays, Combining HTML and PHP code on a single Page, Using Hidden Fields to save state, Redirecting the user, Sending Mail on Form Submission, Working with File Uploads. <b>Working with Cookies and User Sessions:</b> Introducing Cookies, Setting a Cookie with PHP, Session Function Overview, Starting a Session, Working with session variables, passing session IDs in the Query String, Destroying Sessions and Unsetting Variables, Using Sessions in an Environment with Registered Users. <b>Working with Files and Directories:</b> Including Files with include(), Validating Files, Creating and Deleting Files, Opening a File for Writing, Reading or Appending, Reading from Files, Writing or Appending to a File, Working with Directories.

FEB-2020	IV	<p><b>Introduction to MySQL</b>  Introduction to My SQL and Interfacing with Databases through PHP Understanding the database design process: The Importance of Good Database Design, Types of Table Relationships, Understanding Normalization. Learning basic SQL Commands: Learning the MySQL Data types, Learning the Table Creation Syntax, Using Insert Command, Using SELECT Command, Using WHERE in your Queries, Selecting from Multiple Tables, Using the UPDATE command to modify records, Using REPLACE Command, Using the DELETE Command, Frequently used string functions in MySQL, Using Date and Time Functions in MySQL. Interacting with MySQL using PHP: MySQL Versus MySQLi Functions, Connecting to MySQL with PHP, Working with MySQL Data.</p>
MAR-2020	V	<p><b>Word press</b>  Word press: Introduction to word press, servers like wamp, bitnami e.tc, installing and configuring word press, understanding admin panel, working with posts and pages, using editor, text formatting with shortcuts, working with media-Adding, editing, deleting media elements, working with widgets, menus. Working with themes-parent and child themes, using featured images, configuring settings.</p>



Subject Code:CSC-603CE Title:JQUERY/AJAX/JSON/ANGULAR JS Year: 2019-20

Month	Unit No.	Topic to be covered
NOV-2019	I	<p><b>JQuery – Basics:</b></p> <p><b>10 Hrs</b></p> <p>String, Numbers, Boolean, Objects, Arrays, Functions, Arguments, Scope, Built-in Functions. jQuery Selectors: CSS Element Selector, CSS Element ID Selector, CSS Element Class Selector, CSS Universal Selector, Multiple Elements E, F, G Selector, Callback Functions. jQuery – DOM Attributes: Get Attribute Value, Set Attribute Value. jQuery – DOM Traversing : Find Elements by index, Filtering out Elements, Locating Descendent Elements, JQuery DOM Traversing Methods.</p>
DEC -2019	II	<p><b>jQuery – CSS Methods :</b></p> <p>Apply CSS Properties, Apply Multiple CSS Properties, Setting Element Width &amp; Height, JQuery CSS Methods. jQuery – DOM Manipulation Methods: Content Manipulation, DOM Element Replacement, Removing DOM Elements, Inserting DOM elements, DOM Manipulation Methods. jQuery – Events Handling: Binding event handlers, Removing event handlers, Event Types, The Event Object, The Event Attributes. jQuery – Effects: JQuery Effect Methods, jQuery Hide and Show, jQuery Toggle, jQuery Slide – slideDown, slideUp, slideToggle, jQuery Fade – fadeIn, fadeOut, fadeTo, jQuery Custom Animations</p>
JAN-2020	III	<p><b>Intro to jQuery UI</b></p> <p>, Need of jQuery UI in real web sites, Downloading jQuery UI, Importing jQuery UI, Draggable, Droppable, Resizable, Selectable, Sortable, Accordion, Auto Complete, Button Set, Date Picker, Dialog, Menu, Progress Bar, Slider, Spinner, Tabs, Tooltip, Color Animation, Easing Effects, addClass, removeClass, Effects, jQuery UI themes, Customizing jQuery UI widgets / plug-ins, jQuery UI with CDN, Consuming jQuery Plug-ins from 3rd party web sites jQuery Validations, Intro to jQuery validation plug-in, Using jQuery validation plug-in, Regular expressions.</p>
FEB-2020	IV	<p><b>Intro to AJAX</b></p> <p>Need of AJAX in real web sites, Getting database data using jQueryAJAX, Inserting, Updating, Deleting database data using jQuery-AJAX Grid Development using jQuery-AJAX Intro to JSON JSON syntax, Need of JSON in real web sites, JSON object, JSON array, Complex JSON objects, Reading JSON objects using jQuery.</p>

MAR-2020	V	<b>Intro to AngularJS</b> <b>15 Hrs</b> Need of AngularJS in real web sites, Downloading AngularJS, AngularJS first example, AngularJS built-in directives, AngularJS expressions, AngularJS modules, AngularJS controllers, AngularJS scope AngularJS dependency injection AngularJS, bootstrapping AngularJS data bindings, AngularJS \$watch, AngularJS filters, AngularJS events, AngularJS AJAX, Ng-repeat, AngularJS with json arrays, AngularJS registration form and login form, AngularJS CRUD operations, AngularJS Animations, AngularJS validations, AngularJS \$q, AngularJS custom values, AngularJS custom factories, AngularJS custom services, AngularJS custom directives, AngularJS custom providers, AngularJS Routing, AngularUI Routing.
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**SEMESTER –VI**

**CLASS: III B.COM(CA)**

**Subject Code: COM-CSC 605 Title: TALLY**

**Year: 2019-20**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
NOV-2019	I	<b>Introduction to Tally:</b> Introduction, Software versions of Tally, Terminology related to Accounts credit & Debit, Journal, Ledger, Voucher, Group etc. Difference between Manual Accounting and Accounting Packages. Features and advantages of Tally.
DEC -2019	II	<b>Introduction of Tally Software</b> Introduction of Tally Software Creation of a company, Gateway of Tally, Accounts Information, Groups, pre defined Groups, Creation of New Groups, Creation of sub Group.
JAN-2020	III	<b>Ledgers</b> Ledger Creation Single and multiple Ledgers, Displaying & altering Ledgers, configure Ledger, Stock Ledger, Ledgers and their Group Allocation.
FEB-2020	IV	<b>Vouchers</b> Types of vouchers – recording of vouchers – entry of payment voucher, Receipt voucher, sales voucher, purchase voucher, Journal Voucher, Contra Voucher, Debit & Credit Note. Creating New Voucher types, customizing the Existing voucher types, Alternation of Voucher, Deletion of Voucher.
MAR-2020	V	<b>Final Accounts</b> Customizing the final accounts – Profit and Loss Account, Balance Sheet. Key board shortcuts in Tally. Generating the Reports from Tally, Trial Balance, Account Books, Sales, Purchase, Journal Registers, Statement of Accounts, Day Book, List of Accounts.

SEMESTER –VI

CLASS : III B.COM(CA)

Subject Code: COM-CSC 606 Title: E-COMMERCE

Year: 2019-20

Month	Unit No.	Topic to be covered
NOV-2019	I	<b>Introduction to E-Commerce</b> Scope, Definition, e-Commerce and the Trade Cycle, Electronic Markets, Electronic Data Interchange, Internet Commerce. Business Strategy in an Electronic Age: Supply Chains, Porter's Value Chain Model, Inter Organizational Value Chains, Competitive Strategy, First Mover Advantage – Sustainable Competitive Advantage, Competitive Advantage using E-Commerce – Business Strategy.
DEC -2019	II	<b>Business-to-Business Electronic Commerce</b> Characteristics of B2B EC, Models of B2B EC, Procurement Management by using the Buyer's Internal Market place, Just in Time Delivery, Other B2B Models, Auctions and Services from traditional to Internet Based EDI, Integration with Back-end Information System, Role of Software Agents for B2B EC, Electronic marketing in B2B, Solutions of B2B EC, Managerial Issues, Electronic Data Interchange (EDI), EDI: Nuts and Bolts EDI and Business.
JAN-2020	III	<b>Internet and Extranet</b> Automotive Network Exchange, Largest Extranet, Architecture of the Internet, Intranet and Extranet, Intranet software, Applications of Intranets, intranet Application Case Studies, Considerations in Intranet Deployment, Extranets, Structures of Extranets, Extranet products and services, Applications of Extranets, Business Models of Extranet Applications, Managerial Issues. Electronic Payment Systems: Issues and Challenges .
FEB-2020	IV	<b>Public Policy:</b> From Legal Issues to Privacy : Legal Incidents, Ethical and Other public Policy Issues, Protecting Privacy, Protecting Intellectual Property, Free speech, Internet Indecency and Censorship, Taxation and Encryption Policies, Other Legal Issues: Contracts, Gambling and More, Consumer and Seller Protection in EC.
MAR-2020	V	<b>Infrastructure For EC</b> Network of Networks, Internet Protocols, Web- Based client/Server, Internet Security, Selling on the Web, Chatting on the Web, Multimedia delivery, Analyzing Web Visits, Managerial Issues, Equipment required for establishing EC Sites – problems in Operation – Future of EC.

SEMESTER –VI

CLASS : III B.COM(CA)

Subject Code: CCSC-607CE

Title: PHP& MY SQL

Year: 2019-20

Month	Unit No.	Topic to be covered
NOV-2019	I	<b>Building blocks of PHP:</b> Variables, Data Types, Operators and Expressions, Constants. Flow Control Functions in PHP: Switching Flow, Loops, Code Blocks and Browser Output. Working with Functions: Defining Functions, Calling functions, returning the values from UserDefined Functions, Variable Scope, Saving State between Function calls with the Static statement, more about arguments.
DEC -2019	II	<b>Working with Arrays:</b> Arrays, Creating Arrays, Some Array-Related Functions. Working with Objects: Creating Objects, Object Instance. Working with Strings, Dates and Time: Formatting Strings with PHP, Investigating Strings with PHP, Manipulating Strings with PHP, Using Date and Time Functions in PHP.
JAN-2020	III	<b>Working with Forms:</b> Creating Forms, Accessing Form – Input with User defined Arrays, Combining HTML and PHP code on a single Page, Using Hidden Fields to save state, Redirecting the user, Sending Mail on Form Submission, Working with File Uploads. Working with Cookies and User Sessions: Introducing Cookies, Setting a Cookie with PHP, Session Function Overview, Starting a Session, Working with session variables, passing session Ids in the Query String, Destroying Sessions and Unsetting Variables, Using Sessions in an Environment with Registered Users.
FEB-2020	IV	<b>Working with Files and Directories:</b> Including Files with include(), Validating Files, Creating and Deleting Files, Opening a File for Writing, Reading or Appending, Reading from Files, Writing or Appending to a File, Working with Directories, Open Pipes to and from Process Using popen (), Running Commands with exec(), Running Commands with system ( ) or passthru ( ). Working with Images: Understanding the Image-Creation Process, Necessary Modifications to PHP, Drawing a New Image, Getting Fancy with Pie Charts, Modifying Existing Images, Image Creation from User Input.
MAR-2020	V	<b>Interacting with MySQL using PHP:</b> MySQL Versus MySQLi Functions, Connecting to MySQL with PHP, Working with MySQL Data. Creating an Online

		Address Book: Planning and Creating Database Tables, Creating Menu, Creating Record Addition Mechanism, Viewing Records, Creating the Record Deletion Mechanism, Adding Sub-entities to a Record.
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**A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**  
**DEPARTMENT OF CHEMISTRY**  
**SEMESTER – I**  
**2019-20 CURRICULAR PLAN**

Subject Code: **CHE101C** Title: Inorganic ,Organic and physical chemistry

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
June -19	I	P- block elements-I
July-19	II	P- block elements-II& Organo metallic chemistry
Aug-19	III	Structural theory in organic chemistry
Sep-19	IV	Acyclic hydrocarbons & Alicyclic hydrocarbons
Oct-19	V	Benzene and its reactivity

**SEMESTER – II**  
**2019-20 CURRICULAR PLAN**

Subject Code: **CHE -201C** Title: **Physical and General chemistry**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Nov-19	I	Solid state
Dec-19	II	Gaseous state & Liquid state
Jan-20	III	Sollutions
Feb-20	IV	Surface chemistry & Chemical bonding
Mar-20	V	Stereochemistry

### SEMESTER – III

#### 2019-20 CURRICULAR PLAN

Subject Code: **CHE -301C**

Title :Inorganic and organic chemistry

Month	Unit No.	Topic to be covered
June -19	I	d-block elements & Theories of bonding in metals
July-19	II	Metal carbonyls & f-block elements
Aug-19	III	Halogen and Hydroxy compounds
Sep-19	IV	Carbonyl compounds
Oct-19	V	Carboxylic acids and derivatives

### SEMESTER – IV

#### 2019-20 CURRICULAR PLAN

Subject Code: **CHE- 401**

Title : Spectroscopy and Physical chemistry

Month	Unit No.	Topic to be covered
Nov-19	I	Spectrophotometry and Electronic spectroscopy
Dec-19	II	Infrared spectroscopy and NMR spectroscopy
Jan-20	III	Photo chemistry
Feb-20	IV	Electro chemistry
Mar-20	V	Phase rule



## SEMESTER – V(501)

### 2019-20 CURRICULAR PLAN

Subject Code: CHE-501 Title :Inorganic, Organic & Physical Chemistry

Month	Unit No.	Topic to be covered
June -19	I	Co -ordination chemistry
July-19	II	Spectral and magnetic properties of metal complexess
Aug-19	III	Nitro hydro carbons
Sep-19	IV	Nitrogen compounds
Oct-19	V	thermodynamics

## SEMESTER – V(502)

### 2019-20 CURRICULAR PLAN

Subject Code: CHE-502 Title :Inorganic, Organic & Physical Chemistry

Month	Unit No.	Topic to be covered
June -19	I	Reactivity of metal complexes and Bio-inorganic chemistry
July-19	II	Heterocyclic compounds
Aug-19	III	Carbohydrates
Sep-19	IV	Amino acids and proteins
Oct-19	V	Chemical kinetics and photo chemistry

**SEMESTER – VI(GE)**

**2019-20 CURRICULAR PLAN**

Subject Code: CHE-601 Title :Analytical methods in Chemistry

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Nov-19	I	Quantitative analysis
Dec-19	II	Treatment of Analytical data
Jan-20	III	Separation techniques in chemical analysis
Feb-20	IV	Paper chromatography
Mar-20	V	TLC,Column chromatography

**SEMESTER – VI(CHE-602CE)**

**2019-20 CURRICULAR PLAN**

Subject Code: CHE-602CE Title :Organic spectroscopic techniques

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Nov-19	I	NMR spectroscopy
Dec-19	II	NMR spectroscopy
Jan-20	III	Electronic spin resonance spectroscopy
Feb-20	IV	UV& Visible spectroscopy
Mar-20	V	Electronic spectra of poly atomic molecules

**SEMESTER – VI(CHE-603CE)**

**2019-20 CURRICULAR PLAN**

Subject Code: CHE-603 Title :Advanced organic reactions

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Nov-19	I	Organic photo chemistry
Dec-19	II	Organic photo chemistry
Jan-20	III	Protecting groups and organic reactions
Feb-20	IV	Synthetic reactions
Mar-20	V	New synthetic reactions

**SEMESTER – VI(CHE-604CE)**

**2019-20 CURRICULAR PLAN**

Subject Code: CHE-604 Title :Pharmaceutical and Medicinal chemistry

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Nov-19	I	Pharmaceutical terminology
Dec-19	II	Drugs
Jan-20	III	Synthesis and therapeutic activity of drugs
Feb-20	IV	Pharmacodynamic drugs
Mar-20	V	HIV-AIDS

**A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYURU**  
**DEPARTMENT OF BOTANY**  
**2019 CURRICULAR PLAN (2019-20)**

**SEMESTER – I**

**Paper II: TITLE OF THE PAPER: *Microbial Diversity, Algae and Fungi***

Month	Unit No.	Topic to be covered
JUNE- 2019	I	<b>Origin and Evolution of Life, Microbial diversity</b> 1. Origin of life –theories introduction; Lamarckism, Darwinism and Neo Darwinism. 2. Geological time scale 3. Microbial diversity-Mycoplasma – Chlamydia -Archaeobacteria – Actinomycetes
JULY - 2019	II	<b>VIRUSES AND BACTERIA</b> 1. Viruses: General account of Viruses, structure, replication and transmission of plant diseases caused by Viruses. 2. Bacteria: Structure, nutrition, reproduction and economic importance. Outlines of plant diseases of important crop plants caused by Bacteria (Citrus canker, leaf blight of rice, Angular leaf spot of Cotton) and their control.
AGU- 2019	III	<b>CYANOBACTERIA AND LICHENS</b> 1. Cyanobacteria: General account of cell structure, thallus organization and their uses as Biofertilizers. 2. Structure, reproduction and life history of <i>Nostoc</i> and <i>Scytonema</i> . 3. Lichens – Morphology –Anatomy –Reproduction –Economic importance.
SEP- 2019	IV	<b>Algae</b> 1. General account, Fritsch classification of Algae and economic importance. 2. Structure, reproduction, life history of <i>Oedogonium</i> , <i>Vaucheria</i> and <i>Ectocarpus</i> .
OCT 2019	V	<b>FUNGI</b> 1. General characters, classification (Alexopolous) and economic importance. 2. Structure, reproduction and life history of <i>Albugo</i> , <i>Penicillium</i> , <i>Puccinia</i> . 3. General account of plant diseases caused by Fungi (Late blight of potato, Red rot of Sugarcane and Paddy blast) and their control.

Month	Unit No.	Topic to be covered
NOV-2019	I	<p><b>BRYOPHYTA</b></p> <p><b>1. Bryophyta:</b> General characters and classification (up to classes only).</p> <p>2. Structure, reproduction and Life history of <i>Marchantia</i> and <i>Polytrichum</i>.</p> <p>3. Evolution of Sporophyte in Bryophytes</p>
DEC -2019	II	<p><b>PTERIDOPHYTA</b></p> <p><b>1. Pteridophyta:</b> General characters and Classification (up to classes only).</p> <p>2. Structure, reproduction and life history of <i>Lycopodium</i> and <i>Marsilea</i>.</p> <p>3. Heterospory and seed habit</p> <p>4. Stelar Evolution in Pteridophytes</p>
JAN-2020	III	<p><b>GYMNOSPERMS</b></p> <p><b>1. Gymnosperms:</b> General characters and classification (up to classes only).</p> <p>2. Morphology, Anatomy, reproduction and life history of <i>Pinus</i> and <i>Gnetum</i>.</p>
FEB-2020	IV	<p><b>Tissues and Tissue systems</b></p> <p>1. Tissues: Meristematic and permanent tissues (Simple and Complex).</p> <p>2. Shoot apical meristems and its histological organization.</p> <p>3. Root apical meristems and its histological organization.</p> <p><b>Secondary growth.</b></p> <p>1. Anomalous secondary growth in <i>Dracaena</i>, <i>Boerhaavia</i> and <i>Bignonia</i>.</p>
MAR-2020	V	<p>2. Wood structure- general account, Study of local timbers Teak, Rosewood, Red sanders and <i>Terminalia tomentosa</i>.</p>

**Paper III: Plant Taxonomy and Plant Physiology SEMESTER - III**

Month	Unit No.	Topic to be covered
JUNE-2019	I  II	<p><b>Introduction to Plant Taxonomy</b></p> <ol style="list-style-type: none"> <li>1. Fundamental components of taxonomy (identification, nomenclature, classification types and phylogeny)</li> <li>2. Salient features and comparative account of Bentham &amp; Hooker and Engler &amp; Prantl's Classification.</li> <li>3. Role of chemotaxonomy, cytotaxonomy and taxometrics in relation to Taxonomy</li> </ol> <p><b>Systematic Taxonomy</b></p> <ol style="list-style-type: none"> <li>1. Nomenclature and Taxonomic resources: An introduction to International Code of Botanical Nomenclature; Principles, Rules and Recommendations.</li> </ol>
JULY - 2019	II  III	<ol style="list-style-type: none"> <li>2. Systematic study and economic importance of plants belonging to the following families: Annonaceae, Capparidaceae, Rutaceae, Cucurbitaceae and Apiaceae.</li> </ol> <p><b>Systematic Taxonomy</b></p> <ol style="list-style-type: none"> <li>1. Systematic study and economic importance of plants belonging to the following families: Asteraceae, Asclepiadaceae, Lamiaceae, Euphorbiaceae, Orchidaceae and Poaceae</li> </ol>
AGU-2019	IV	<p>.</p> <p><b>Plant – Water relations</b></p> <ol style="list-style-type: none"> <li>1. Importance of water to plant life, physical properties of water,</li> <li>2. Diffusion, Imbibition and osmosis; water potential, osmotic potential and pressure potential.</li> <li>3. Absorption, transport of water, ascent of sap.</li> <li>4. Transpiration – types, stomata structure, movements and significance.</li> </ol>
SEP-2019	V	<p><b>Mineral nutrition and Fertilizers</b></p> <ol style="list-style-type: none"> <li>1. Mineral Nutrition: Essential macro and micro mineral nutrients and their role, mineral uptake (active and passive), deficiency symptoms.</li> <li>2. Nitrogen cycle- biological nitrogen fixation.</li> <li>3. Enzymes: Nomenclature, characteristics, mechanism and regulation of enzyme action, enzyme kinetics, factors regulating enzyme action.</li> </ol>

Month	Unit No.	Topic to be covered
NOV-2019	I	<p><b>EMBRYOLOGY</b></p> <ol style="list-style-type: none"> <li>1. Introduction: History and Importance of Embryology.</li> <li>2. Anther structure, Microsporogenesis and development of male gametophyte.</li> <li>3. Ovule structure and types; Megasporogenesis; Monosporic; Bisporic and Tetrasporic types of female gametophyte / embryosac development.</li> <li>4. Pollination -Types, Fertilization.</li> </ol> <p><b>EMBRYOLOGY AND PALYNOLOGY</b></p> <ol style="list-style-type: none"> <li>1. Endosperm Development and types.</li> <li>2. Embryo - development and types.</li> </ol>
DEC -2019	II	<ol style="list-style-type: none"> <li>3. Polyembryony and Apomixis - an outline.</li> <li>4. Palynology: Principles and applications.</li> </ol> <p><b>PLANT METABOLISM- I</b></p> <ol style="list-style-type: none"> <li>1. Photosynthesis: Electromagnetic spectrum, absorption and action spectra; Red drop and Emerson enhancement effect, concept of Z scheme in photosystems,</li> </ol>
JAN-2020	III	<p>Photosynthetic pigments, mechanism of photosynthetic electron transport and evolution of oxygen, photo phosphorylation, carbon assimilation pathways: C<sub>3</sub>, C<sub>4</sub> &amp; CAM and Photorespiration.</p> <ol style="list-style-type: none"> <li>2. Translocation of organic substances: Mechanism of phloem transport, source-sink relationships.</li> </ol> <p><b>PLANT METABOLISM- II</b></p> <ol style="list-style-type: none"> <li>1. Respiration: Aerobic and Anaerobic, Glycolysis, Krebs cycle, electron transport system, mechanism of oxidative phosphorylation, pentose phosphate pathway.</li> <li>2. Lipid Metabolism: Structure and functions of lipids, conversion of lipids to carbohydrates, Beta-oxidation.</li> </ol>
FEB-2020	IV	<p><b>GROWTH AND DEVELOPMENT</b></p> <ol style="list-style-type: none"> <li>1. Growth and development: Definition, phases and kinetics of growth, Physiological effects of phytohormones - auxins, gibberellins, cytokinins, ABA and ethylene</li> <li>2. Physiology of flowering and photoperiodism, role of phytochrome in flowering.</li> <li>3. Stress Physiology: Concept and plant responses to water, salt and temperature stresses.</li> </ol>

**SEMESTER – V CELL BIOLOGY, GENETICS AND PLANT BREEDING**

Month	Unit No.	Topic to be covered
JUNE-2019	I	<p><b>Cell Biology</b></p> <ol style="list-style-type: none"> <li>1. Cell, Ultra Structure and functions of cell wall.</li> <li>2. Molecular Organization of cell membranes.</li> <li>3. Chromosomes; morphology, organization of DNA in a chromosome (Nucleosome model) Euchromatin and Heterochromatin.</li> </ol> <p><b>Genetic Material</b></p> <ol style="list-style-type: none"> <li>1. DNA as the Genetic Material: Griffith's and Avery's Transformation Experiment. Hershey - Chase Bacteriophage experiment.</li> </ol>
JULY - 2019	II	<ol style="list-style-type: none"> <li>2. DNA Structure (Watson &amp; crick model) and replication of DNA (Semi Conservative).</li> <li>3. Types of RNA (mRNA, tRNA, rRNA), their structure and function.</li> </ol> <p><b>Mendelian Inheritance</b></p> <ol style="list-style-type: none"> <li>1. Mendelian Inheritance (Mono – Di-hybrid Crosses), Back cross and Test cross.</li> </ol>
AGU-2019	III	<ol style="list-style-type: none"> <li>2. Linkage: concept, complete and In-complete Linkage, Coupling and Repulsion; Linkage. Maps Based on Two and Three Point cross.</li> <li>3. Crossing over concept and significance.</li> </ol> <p><b>Gene Expression</b></p> <ol style="list-style-type: none"> <li>1. Organization of gene, Transcription and Translation.</li> <li>2. Mechanism and regulation of Gene Expression in Prokaryotes (Lac operas).</li> </ol>
SEP-2019	IV	<ol style="list-style-type: none"> <li>3. Mutations: Chromosomal Aberrations, Gene Mutations and Transposable Elements.</li> </ol> <p><b>Plant Breeding</b></p> <ol style="list-style-type: none"> <li>1. Introduction and objectives of Plant Breeding.</li> <li>2. Methods of Crop Improvement: Procedure, Advantages and limitations of Introduction,</li> </ol>
OCT 2019	V	<ol style="list-style-type: none"> <li>Selection and Hybridization (Out lines only).</li> </ol>



Month	Unit No.	Topic to be covered
JUNE-2019	I	<b>ELEMENTS OF ECOLOGY</b> 1. Ecology: Definition, branches and significance of ecology. 2. Climatic factors: Light, Temperature. 3. Edaphic factor: Origin, formation, composition and soil profile. 4. Biotic factor, Ecological adaptations of Plants.
JULY -2019	II	<b>Ecosystem Ecology</b> 1. Ecosystem: concept and components, energy flow, food chain, food web, Ecological Pyramids. 2. Productivity of ecosystem-Primary, Secondary and Net productivity. 3. Biogeochemical cycles- Carbon, Nitrogen and Phosphorous.
AGU-2019	III	<b>Population &amp; Community ecology.</b> 1. Population-definition, characteristics and importance (Density, Natality, Mortality, Growth Curves) outlines-ecotypes. 2. Plant communities- characters of a community, outlines – Frequency, density, cover, life forms, Biological Spectrum. 3. Ecological Succession: Hydrosere and Xerosere
SEP-2019	IV	<b>Phytogeography</b> 1. Principles of Phytogeography, Distribution (Wides, Endemic, Discontinuous species). 2. Phytogeographic regions of India. 3. Endemism – types and Causes.
OCT 2019	V	<b>Plant Biodiversity and its Importance</b> 1. Definition, Levels of Biodiversity – genetic, species and ecosystem. 2. Biodiversity and Hot-spots of India: North Eastern, Himalayas and Western Ghats. 3. Loss of Biodiversity-causes and Conservation (In-situ and Ex-Situ Methods).

**PAPER – VII – ELECTIVE-C**  
**Plant tissue culture and its biotechnological applications**

Month	Unit No.	Topic to be covered
NOV-2019	I	<p><b>PLANT TISSUE CULTURE – 1</b></p> <ol style="list-style-type: none"> <li>1. History of plant tissue culture research - basic principles of plant tissue culture, meristems culture, organ culture, Totipotency of cells.</li> <li>2. Methodology - sterilization (physical and chemical methods), culture media, Murashige and Skoog's (MS medium), phytohormones, medium for micro-propagation/clonal propagation of ornamental and horticulturally important plants.</li> <li>3. Callus subculture maintenance, growth measurements, morphogenesis in callus culture – Organogenesis, somatic embryogenesis.</li> </ol>
DEC -2019	II	<p><b>Plant Tissue culture-2</b></p> <ol style="list-style-type: none"> <li>1. Endosperm culture – Embryo culture -culture requirements – applications, embryo rescue technique.</li> <li>2. Production of secondary metabolites.</li> <li>3. Cryopreservation; Germ plasm conservation.</li> </ol>
JAN-2020	III	<p><b>Recombinant DNA technology</b></p> <ol style="list-style-type: none"> <li>1. Restriction Endonucleases (history, types I-IV, biological role and application); concepts of restriction mapping.</li> <li>2. Cloning Vectors: Prokaryotic (pUC 18, pBR322, Ti plasmid and Lambda phage, Eukaryotic Vectors (YAC and briefly PAC)</li> <li>3. Gene cloning (Bacterial Transformation and selection of Recombinant clones, PCR Mediated gene cloning)</li> <li>4. Construction of genomic and cDNA libraries, screening DNA libraries to obtain gene interest by complementation technique, colony hybridization.</li> </ol> <p><b>Methods of gene transfer</b></p> <ol style="list-style-type: none"> <li>1. Methods of gene transfer- Agrobacterium-mediated, direct gene transfer by Electroporation, Microinjection, Micro projectile bombardment.</li> </ol>
FEB-2020	IV	<ol style="list-style-type: none"> <li>2. Selection of transgenics– selectable marker and reporter genes (Luciferase, GUS, GFP).</li> </ol> <p><b>Applications of Biotechnology</b></p> <ol style="list-style-type: none"> <li>1. Applications of Plant Genetic Engineering – crop improvement, herbicide resistance, insect resistance, virus resistance.</li> <li>2. Genetic modification – transgenic plants for pest resistant (Bt-cotton); herbicide resistance (Round Up Ready soybean);</li> </ol>
MAR-2020	V	<p>improved agronomic traits flavrSavr tomato, Golden rice); Improved horticultural varieties (Moon dust carnations).</p>

**Paper – VIII-A-1 PLANT DIVERSITY AND HUMAN WELFARE BOT-602 (CE)**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
NOV-2019	I	<p><b>Plant diversity and its scope:</b></p> <ol style="list-style-type: none"> <li>1. Genetic diversity, Species diversity, Plant diversity at the ecosystem level,</li> <li>2. Agro biodiversity and Vavilov Crop centers.</li> <li>3. Values and uses of biodiversity: Ethical and aesthetic values, Uses of Plants.</li> </ol>
DEC -2019	II	<p><b>Loss of biodiversity:</b></p> <ol style="list-style-type: none"> <li>1. Loss of genetic diversity, Loss of species diversity, Loss of ecosystem diversity, Loss of agro biodiversity, projected scenario for biodiversity loss.</li> <li>2. Management of plant biodiversity: Organizations associated with Biodiversity. Management-Methodology for execution-IUCN, UNEP, UNESCO, WWF, NBPGR; Biodiversity legislation and conservations, Biodiversity information management and Communication.</li> </ol>
JAN-2020	III	<p><b>Contemporary practices in resource management:</b></p> <ol style="list-style-type: none"> <li>1. Environmental Impact Assessment (EIA), Geographical Information System GIS,</li> <li>2. Solid and liquid waste management.</li> </ol> <p><b>Conservation of biodiversity</b></p> <ol style="list-style-type: none"> <li>1. Conservation of genetic diversity, species. diversity</li> </ol>
FEB-2020	IV	<p>2.Social approaches to conservation, Biodiversity awareness , Programmes, Sustainable development.</p> <p><b>Role of plants in relation to Human Welfare</b></p> <ol style="list-style-type: none"> <li>1.Importance of forestry, their utilization and commercial aspects-             <ol style="list-style-type: none"> <li>a) Avenue trees, b) ornamental plants of India.</li> <li>c) Alcoholic beverages Through ages</li> </ol> </li> </ol>
MAR-2020	V	<ol style="list-style-type: none"> <li>2 Fruits and nuts: Important fruit crops their commercial importance. Wood, fiber and their uses.</li> </ol>

**Paper – VIII-A-2 Ethnobotany AND MEDICINAL BOTANY BOT-603 (CE)**

Month	Unit No.	Topic to be covered
NOV-2019	I	<p><b>Ethnobotany</b></p> <p>1. Introduction, concept, scope and objectives</p> <p>2. Major and minor ethnic groups or Tribals of India, and their lifestyles.</p> <p>3. Plants used by the tribal populations:</p> <p>a) Food plants, b) intoxicants and beverages, c) Resins and oils and miscellaneous uses.</p>
DEC -2019	II	<p><b>Role of ethnobotany in modern Medicine (12hrs)</b></p> <p>1. Role of Ethnobotany in modern medicine with special example; <i>Rauwolfiaserpentina</i>, <i>Artemisia annua</i>, <i>Withaniasomnifera</i>.</p> <p>2. Significance of the following plants in ethno botanical practices (along with their habitat And morphology) a) <i>Azadirachta indica</i>, b) <i>Vitexnegundo</i>, c) <i>Ocimum sanctum</i>, d) <i>phyllanthus niruri</i></p> <p>3. Role of ethnic groups in the conservation of plant genetic resources.</p>
JAN-2020	III	<p><b>Ethno botany as a tool to protect interests of ethnic groups</b></p> <p>1. Sharing of wealth concept with few examples from India.</p> <p>2. Biopiracy, Intellectual Property Rights and Traditional Knowledge</p>
FEB-2020	IV	<p><b>History, Scope and Importance of Medicinal Plants. Indigenous Medicinal Sciences</b></p> <p>1. Definition and Scope-Ayurveda: History, origin, panchamahabhutas, saptadhatu and tridosha concepts, Rasayana, plants used in ayurvedic treatments.</p> <p>2 Homeopathy: Origin of Homeopathy medicinal systems, Basis of Homeopathy, plants used in Homeopathy medicine.</p>
MAR-2020	V	<p><b>Conservation of endangered and endemic medicinal plants</b></p> <p>1. Definition: endemic and endangered medicinal plants,</p> <p>2. Red list criteria</p> <p>3. <i>In situ</i> conservation: sacred groves, National Parks</p> <p>4. <i>Ex situ</i> conservation: Botanical Gardens.</p>

**Paper – VIII-A-3 Pharmacognosy and Phytochemistry**

Month	Unit No.	Topic to be covered
NOV-2019	I	<p><b>Pharmacognosy</b></p> <ol style="list-style-type: none"> <li>1. Definition, Importance</li> <li>2. Classification of drugs - Chemical and Pharmacological</li> <li>3. Drug evaluation methods.</li> </ol> <p><b>Organoleptic and microscopic studies: (12hrs)</b></p> <ol style="list-style-type: none"> <li>1. Organoleptic and microscopic studies with reference to nature of active principles and common adulterants of</li> </ol>
DEC -2019	II	<ol style="list-style-type: none"> <li>2. a) <i>Adhatoda vasica</i>(leaf) b) <i>Strychnosnuxvomica</i> (seed), c)<i>Rauwolfia serpentina</i>(root) d)<i>Zinziberofficinalis</i> e)<i>Catharanthusroseus</i>.</li> </ol>
JAN-2020	III	<p><b>Secondary Metabolites:</b></p> <ol style="list-style-type: none"> <li>1. Definition of primary and secondary metabolites and their differences, Major types terpenes, Phenolics, alkaloids, terpenoids, steroids.</li> <li>2. A brief idea about extraction of alkaloids. Origin of secondary metabolites–detailed account of Mevalonate pathway, Shikimate pathway.</li> </ol>
FEB-2020	IV	<p><b>Phytochemistry</b></p> <p>ˆBiosynthesis and sources of drugs:</p> <ol style="list-style-type: none"> <li>1. Structural type biosynthesis importance of simple Phenolic compounds, coumarins, Flavonoids.</li> <li>2. Steroids, sterols: Biosynthesis, commercial importance.</li> <li>3. Alkaloids: Different groups, biosynthesis, bioactivity.</li> <li>4. Volatile oils, aromatherapy.</li> </ol>
MAR-2020	V	<p><b>Enzymes, proteins and amino acids as drugs</b></p> <ol style="list-style-type: none"> <li>1. Vaccines, toxins and toxoids, immune globulins, antiserums,</li> <li>2. Vitamins, Antibiotics – chemical nature, mode of action.</li> <li>3. Pharmacological action of plant drugs – tumor inhibitors, PAF antagonists, antioxidants, phytoestrogens and others.</li> </ol>

**A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYURU**  
**DEPARTMENT OF ZOOLOGY**  
**2019-2020**  
**SEMESTER – I**  
**CURRICULAR PLAN/ TEACHING PLAN**

SEMESTER-I

**Subject Code: Zoo-101 Title: Biology of Non – Chordates year: 2019-20**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
JUNE-2019	I	Significance of Diversity of Invertebrates. <b>Phylum - Protozoa:</b> Type study: <i>Elphidium</i> . <b>Phylum - Porifera :</b> Type study: <i>Sycon</i> - Morphology, histology, spicules. Canal system in Sponges.
JULY -2019	II	<b>Phylum - Coelenterata :</b> Type study : <i>Obelia</i> - Morphology, Structure of Polyp & Medusa. Polymorphism in Coelenterates. Coral & Coral reef formation <b>Phylum- Platyhelminthes :</b> Type study: <i>Fasciola hepatica</i> – Morphology, Excretory system, Reproductive system, Life history & Pathogenicity. <b>Phylum - Nematelminthes:</b> Type study: <i>Ancylostomaduodenale</i> - Morphology & Life history
AGU-2019	III	<b>Phylum - Annelida:</b> Type study: <i>Hirudinaria granulose</i> – Morphology, Digestive system, excretory system & Reproductive system. Coelomoducts. <b>Vermiculture:</b> Scope, Significance of Vermiculture, Earthworms Sps, Processing of Vermiculture, Vermicompost, and Economic Importance of Vermicompost.
SEP-2019	IV	<b>Phylum - Arthropoda :</b> Type study: <i>Prawn</i> – External characters [Except appendages], Respiratory system & Circulatory system. <i>Peripatus</i> : Structure & affinities. <b>Phylum – Mollusca:</b> Pearl Formation in Pelecypoda. Torsion in Gastropoda.
OCT 2019	V	<b>Phylum - Echinodermata :</b> Water vascular system of Star Fish. <b>Hemichordata :</b> Balanoglossus: Structure , Affinities. <b>Invertebrates Larval forms :</b> Amphiblastula, Ephyra, Trochophore, Nauplius, Glochidium, Bipinnaria, Tornaria.

## SEMESTER -II

Subject Code: Zoo-201 Title: **Biology of Chordates** Year:2019-20

Month	Unit No.	Topic to be covered
NOV-2019	I	. Prochordata. Structure of <i>Branchiostoma</i> Affinities of Cephalochordata Structure and Life History of <i>Herdmania</i> Significance of Retrogressive metamorphosis
DEC -2019	II	.Cyclostomata Differences between Petromyzon and <i>Myxine</i> . Pisces. <i>Scoliodon</i> - External features, Digestive System, Respiratory System, Heart, Brain. Migration in Fishes Dipnoi
JAN-2020	III	Amphibia. <i>Rana hexadactyla</i> - External features, Digestive System, Respiratory System, Heart, Brain. Parental care in Amphibians Reptilia <i>Calotes</i> - External features, Digestive System, Respiratory System, Heart, Brain
FEB-2020	IV	Aves : <i>Columbalivia</i> - Exoskeleton, Digestive System, Respiratory System, Heart, Brain Migration in Birds Flight adaptations in Birds
MAR-2020	V	.Mammalia . Differences between Prototheria & Metatheria Dentition in Mammals.

### SEMESTER -III

Subject Code: ZOO301 Title: **Cytology, Genetics and Evolution YEAR:2019-20**

Month	Unit No.	Topic to be covered
JUNE-2019	I	<b>Cytology</b> - :-Electron microscopic structure of cell . Plasma membrane - Fluid mosaic model, Transport functions of plasma membrane (Active &Passive)
	II	<b>Cell Organelles</b> :- Stricture and functions of Endoplasmic reticulum, Golgi body, Ribosome's, Lysosomes, Mitochondria.
JULY -2019	II	DNA: Watson & Crick model , Semi Conservative Replication. RNA - Structure, types & functions of RNA. Chromosomes - Structure, types &functions, Giant Chromosomes (lamp brush & Polytene)
	III	<b>Genetics-I:-</b> Mendel's Laws of Inheritance, Incomplete dominance and co-dominance <b>3.2</b> Lethal alleles, Epistasis , Linkage and crossing over.
AGU-2019	IV	<b>Genetics – II</b> :- Sex determination - Genic balance theory / Bridges theory, Barr bodies. Sex linked inheritance. Extra chromosomal inheritance (Kappa particles in Paramecium) Blood group inheritance.
SEP-2019	V	<b>Evolution:-</b> Origin of life,. Hardy -Weinberg Equilibrium, Lamarckism ,Darwinism, Neo – Darwinism Isolation, Speciation (Allopatric and Sympatric).



**SEMESTER -IV**Subject Code: ZOO401 Title: **Embryology, Physiology and Ecology** Year:2019-20

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
NOV-2019	I	<b>Developmental Biology and Embryology</b> Gametogenesis (Spermatogenesis, Oogenesis in mammals) Fertilization Types of eggs Types of cleavages Foetal membranes in Chick Development - Types and functions of Placenta in mammals.
DEC -2019	II	Elementary study of digestive process. Absorption of digested food. <b>Respiration</b> – Structure of mammalian Lung & Mechanism of respiration, transport of oxygen and carbon dioxide <b>Circulation</b> - Structure and functioning of mammalian heart, Cardiac cycle. <b>Excretion</b> - Structure of nephron, urine formation, counter current mechanism.
JAN-2020	III	Structure & functional properties of Nerve Cell; Production & propagation of nerve Impulse. Synaptic transmission. Muscle contraction - Ultra structure of muscle fibre, molecular and chemical basis of muscle contraction. Endocrine glands - Structure, secretions and the functions (of hormones) of Pituitar Thyroid, parathyroid, adrenal glands and pancreas.Hormonal control of reproduction in Mammals.
FEB-2020	IV	Abiotic factors of Ecosystem – Temperature & Light. Nutrient cycles - Nitrogen, Carbon and Phosphorus. Energy flow in ecosystem.
MAR-2020	V	Community interactions - Mutualism, commensalism, parasitism.. Ecological succession. <b>Zoogeography</b> .Study of physical and faunal peculiarities of Oriental, Australian and Ethiopian regions.

## SEMESTER -V

Subject Code: ZOO501 Title: Animal Biotechnology Year:2019-20

Month	Unit No.	Topic to be covered
JUNE-2019	I	<p><b>Tools of Recombinant DNA technology - Enzymes and Vectors</b>  <b>Restriction modification systems</b> : : Types I, II and III- Nomenclature, Mode of action.            Applications of Type II restriction enzymes in genetic engineering  <b>DNA modifying enzymes and their applications:</b>            DNA polymerases, Terminal deoxynucleotidyl transferase, kinases and phosphatases, and DNA ligases  <b>Cloning Vectors:</b>            Properties of Cloning Vectors            Plasmid vectors: pBR and pUC 18, Bacteriophage lambda and M13 based vectors, Cosmids.            Artificial Chromosome Vectors: BACs, YACs,</p>
JULY -2019	II	<p>Procedure of gene cloning Use of linkers and adaptors  <b>Gene delivery</b>: : Microinjection, electroporation, biolistic method (gene gun), Calcium method.  <b>PCR</b>:: Basics of PCR: Definition, Principle and Procedure of PCR.  <b>DNA Sequencing</b>: Sanger's method of DNA sequencing- traditional and automated sequencing: DNA finger printing.  <b>Hybridization techniques</b>: Southern, Northern and Western blotting. <b>Genomic and cDNA libraries</b>:            : Preparation and uses</p>
AGU-2019	III	<p><b>Cell culture media</b>: : Natural and Synthetic  <b>Types Cell cultures</b>: primary culture, secondary culture, Protocols for Primary Cell Culture Continuous cell lines , Established Cell lines (common examples such as MRC, HeLa, CHO, BHK, Vero)            Cryopreservation of cultures. <b>Hybridoma Technology</b>:            Cell fusion, Production of Monoclonal antibodies (mAb)            Applications of mAb <b>Stem cells</b>: : Types of stem cells- Embryonic and Adult Stem Cell: Applications of Stem Cell Technology in Cell based therapy- Diabetes and Parkinson's diseases</p>
SEP-2019	IV	<p><b>: Reproductive Technologies &amp; Transgenic Animals</b>  <b>Manipulation of reproduction in animals</b>:: Artificial Insemination, <i>In vitro</i> fertilization .: super ovulation, Embryo transfer, Embryo cloning  <b>Transgenic Animals</b>: Production of Transgenic Animals- sheep, fish</p>
OCT 2019	V	<p><b>Applied Biotechnology</b>  <b>Industry</b>: Fermentation: Different types of Fermentation. Submerged &amp; Solid state, batch, Fed batch &amp; Continuous (Short notes only)            Downstream processing - Filtration, centrifugation, extraction, chromatography, spray drying and lyophilization Fisheries            Polyploidy in fishes</p>

**SEMESTER -V**

Subject Code: ZOO502 Title: Animal Husbandry Year: 2019-20

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
JUNE-2019	I	General introduction to poultry farming. Principles of poultry housing. Poultry houses. Systemsof poultry farming. Management of chicks, growers, layers, and Broilers.
JULY -2019	II	Poultry feed management – Principles of feeding. Nutrient requirements for different stages of layers and broilers. Methods of feeding- Whole grain feeding system, Grain and mash method, All mash method, Pellet feeding. Poultry diseases – viral, bacterial, fungal and parasitic (two each); symptoms, control and management.
AGU-2019	III	Selection, care and handling of hatching eggs. Egg testing. Methods of hatching. Brooding and rearing. Sexing of chicks
SEP-2019	IV	Breeds of Dairy Cattle and Buffaloes – Definition of breed; Classification of Indian Cattlebreeds,exotic breeds and Indian buffalo breeds. Systems of inbreeding and crossbreeding. Housing of dairy animals – Selection of site for dairy farm; systems of housing – loose, housing system.Conventional dairy barn
OCT 2019	V	Care and management of dairy animals - Care and management of calf, heifer, milk animal, dry and pregnant animal, bulls and bullocks. Cleaning and sanitation of programme. Records to be maintained in a dairy farm.

## SEMESTER -VI

Subject Code: ZOO601 Title: Immunology Year: 2019-20

Month	Unit No.	Topic to be covered
NOV-2019	I	<b>Overview of Immune system</b> Introduction to basic concepts in Immunology. Innate and adaptive immunity <b>Cells and organs of Immune system</b> Cells of immune system Organs of immune system
DEC -2019	II	<b>Antigens:</b> Basic properties of antigens B and T cell epitopes, haptens and adjuvants Factors influencing immunogenicity
JAN-2020	III	<b>Antibodies:</b> Structure of an antibody Classes and functions of antibodies Antigen and antibody interactions. Monoclonal antibodies and their production
FEB-2020	IV	<b>Working of an Immune system:</b> Structure and functions of major histocompatibility complexes Exogenous and Endogenous pathways of antigen presentation and processing Basic properties and functions of mediator molecules. (cytokines interferons and complement proteins. Mechanisms of humoral and cell mediated immunities
MAR-2020	V	<b>Immune system in health and disease:</b> Classification and brief description of various types of hyper sensitivities Introduction to concepts of autoimmunity and immunodeficiency <b>Vaccines:</b> General introduction to vaccines Types of vaccines

**SEMESTER -VI**

Subject Code: ZOO602      Title: Principles of Aquaculture Year:2019-20

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
NOV-2019	I	Introduction / Basics of Aquaculture:- Definition, Significance and History of Aquaculture Present status of Aquaculture – Global and National scenario Major cultivable species for aquaculture: freshwater, brackish water and marine. Criteria for the selection of species for culture
DEC -2019	II	<b>Types of Aquaculture :-</b> Freshwater, Brackishwater and Marine Concept of Monoculture, Polyculture, Composite culture, Monosex culture and Integrated fish farming <b>Culture systems :-</b> Ponds, Raceways, Cages, Pens, Rafts and water recirculating systems <b>Culture practices :-</b> Traditional, extensive, modified extensive, semi-intensive and intensive cultures of Fish and shrimp
JAN-2020	III	<b>Design and construction of aqua farms :-</b> Criteria for the selection of site for freshwater and brackish water pond farms, Design and construction of fish and shrimp farms <b>Seed resources :-</b> Natural seed resources and Procurement of seed for stocking: Carp and shrimp <b>Nutrition and feeds :-</b> Nutritional requirements of a cultivable fish and shellfish Natural food and Artificial feeds and their importance in fish and shrimp culture
FEB-2020	IV	<b>Management of carp culture ponds:-</b> Culture of Indian major carps: Pre-stocking management – Dewatering, drying, Predators, weeds and algal blooms and their control, Liming and Fertilization; Stocking management – Stocking density and stocking; Post-stocking Management – Feeding, water quality, growth and health care; and harvesting of ponds <b>Culture of giant freshwater prawn, <i>Macrobrachium rosenbergii</i></b>
MAR-2020	V	<b>Culture of shrimp (<i>Penaeus monodon</i> or <i>Litopenaeus vannamei</i>)</b> <b>Culture of pearl oysters</b> <b>Culture of seaweeds-</b> species cultured, culture techniques, important by-products, prospects <b>Culture of ornamental fishes –</b> Setting up and maintenance of aquarium; and breeding.

## SEMESTER -VI

Subject Code: ZOO603 Title: Aquaculture Management Year:2019-20

Month	Unit No.	Topic to be covered
NOV-2019	I	<b>Breeding and Hatchery Management:-</b> Bundh Breeding and Induced breeding of carp by Hypophysation; and Use of synthetic hormones. Types of fish hatcheries; Hatchery management of Indian major carps Breeding and Hatchery management of <i>Penaeus monodon</i> / <i>Litopenaeus vannamei</i> Breeding and Hatchery management of giant freshwater prawn.
DEC -2019	II	<b>Water quality Management:-</b> Water quality and soil characteristics suitable for fish and shrimp culture Identification of oxygen depletion problems and control mechanisms in culture ponds Liming materials, Organic manures and Inorganic fertilizers commonly used and Their implications in fish ponds
JAN-2020	III	<b>Feed Management :-</b> Live Foods and their role in shrimp larval nutrition. Supplementary feeds: Principal foods in artificial diets; Types of feeds; Feed additives and Preservatives; role of probiotics. Feed formulation and manufacturing; Feed storage Feeding strategies: Feeding devices, feeding schedules and ration size; Feed evaluation- feed conversion efficiencies and ratios
FEB-2020	IV	<b>Disease Management :-</b> Principles of disease diagnosis and health management; Prophylaxis, Hygiene and Therapy of fish diseases Specific and non-specific defense systems in fish; Fish immunization and Vaccination Etiology, Symptoms, prophylaxis and therapy of common fish diseases in fish ponds Etiology, Symptoms, prophylaxis and therapy of common shrimp diseases in shrimp ponds
MAR-2020	V	<b>Economics and Marketing :-</b> Principles of aquaculture economics – variable costs, cost-benefit analysis , Fish marketing methods in India; Basic concepts in demand and price analysis. <b>5.2 Fisheries Extension :</b> Fisheries Training and Education in India; Role of extension in community development. <b>5.3 Fish Genetics</b> Genetic improvement of fish stocks – Hybridization of fish. Gynogenesis, Androgenesis, Polyploidy, Transgenic fish, Cryopreservation of gametes,

## SEMESTER -VI

Subject Code: ZOO604 Title: Postharvest Technology Year:2019-20

Month	Unit No.	Topic to be covered
NOV-2019	I	<b>Handling and Principles of fish Preservation :-</b> Handling of fresh fish, storage and transport of fresh fish, post mortem changes (Rigor mortis and spoilage), spoilage in marine fish and freshwater fish. Principles of preservation– cleaning, lowering of temperature, rising of temperature, use of salt, use of fish preservatives, exposure to low radiation
DEC -2019	II	<b>Methods of fish Preservation :-</b> Traditional methods - sun drying, salt curing, pickling and smoking. Advanced methods – chilling or icing, refrigerated sea water, freezing, canning, Irradiation and Accelerated Freeze drying (AFD).
JAN-2020	III	<b>Processing and preservation of fish and fish by-products :-</b> Fish products – fish minced meat, fish meal, fish oil, fish liquid (ensilage), fishprotein concentrate, fish chowder, fish cake, fish sauce, fish salads, fish powder, petfood from trash fish, fish manure. Fish by-products – fish glue, ising glass, chitosan, pearl essence, shark fins, fishleather and fish maws. <b>Seaweed Products :-</b> Preparation of agar, algin and carrageen. Use of seaweeds as food for human consumption.
FEB-2020	IV	<b>Sanitation and Quality control :-</b> Sanitation in processing plants - Environmental hygiene and Personal hygiene inprocessing plants. Quality Control of fish and fishery products – pre-processing control, control duringprocessing and control after processing. Regulatory affairs in industries
MAR-2020	V	<b>Quality Assurance, Management and Certification :-</b> Seafood Quality Assurance and Systems: Good Manufacturing Practices (GMPs); GoodLaboratory Practices (GLPs); Standard Operating Procedures (SOPs); Concept ofHazard Analysis and Critical Control Points (HACCP) in seafood safety. National and International standards – ISO 9000: 2000 Series of Quality Assurance System.

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**DEPARTMENT OF ZOOLOGY**

**AQUACULTURE**

**CURRICULAR PLAN/ TEACHING PLAN**

**2019-2020**

**SEMESTER – I**

**Subject Code: AQU 101C**

**Title: Basic principles of aquaculture**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
<b>JUNE 2019</b>	I	Concept of Blue Revolution - History and definition of Aquaculture. Scope of Aquaculture at global Level, India and Andhra Pradesh. Fresh water aquaculture, brackish water aquaculture and mariculture Different Aquaculture systems – Pond, Cage, Pen, Running water, Extensive, Intensive and & Semi- Intensive Systems and their significance. Monoculture, Polyculture and Monosex culture systems Aquaculture versus Agriculture; Present day needs with special reference to Andhra Pradesh
<b>JULY2019</b>	II	General Concepts of Ecology, Carrying Capacity and Food Chains Lotic and lentic systems, streams and springs Nutrient Cycles in Culture Ponds – Phosphorus, Carbon and Nitrogen Importance of Plankton and Benthos in culture ponds, nutrient dynamics and algal blooms, Concepts of Productivity, estimation and improvement of productivity
<b>AUG 2019</b>	III IV	Classification of ponds based on water resources – spring, rain water, flood water, well water and water course ponds Functional classification of ponds – head pond, hatchery, nursery, rearing, production, stocking and quarantine ponds Hatchery design. Important factors in the construction of an ideal fish pond – site selection, topography, nature of the soil, water resource
<b>SEP 2019</b>	IV V	Lay out and arrangements of ponds in a fish farm, Construction of an ideal fish pond – space allocation, structure and components of barrage pond. <b>Pond management factor</b> Need of fertilizer and manure application in culture ponds; role of nutrients; NPK contents of different fertilizers and manures used in aquaculture; and precautions in their application
<b>OCT2019</b>	V	Physico-chemical conditions of soil and water optimum for culture –temperature, depth, turbidity, light, water and shore currents, PH, DOD, CO <sub>2</sub> and nutrients; measures to increase oxygen and reduce ammonia & hydrogen sulphide in culture ponds; correction of PH Eradication of predators and weed control – advantages and disadvantages of weed, weed plants in culture ponds, aquatic weeds, weed fish, toxins used for weed control and control of predators



**DEPARTMENT OF ZOOLOGY**  
**SEMESTER – II**  
**CURRICULAR PLAN/ TEACHING PLAN**  
**2019-2020**

**Subject Code: AQU 201C**

**Title: Biology of fin fish & shell fish**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
	I	General Characters and classification of fishes & crustaceans up to the level of Class Fish and Crustaceans of commercial importance Sense organs of fishes and crustaceans. Specialized organs in fishes – electric organ, venom and toxins Buoyancy in fishes- swim bladder and mechanism of gas secretion
	II	Natural fish food, feeding habits, feeding intensity, stimuli for feeding, utilization of food, gut content analysis, forage ratio Principles of Age and growth determination; growth regulation, Growth rate measurement – scale method, otolith method, skeletal parts as age indicators Length-frequency method, age composition, age-length keys, absolute and specific growth, back calculation of length and growth, annual survival rate, Length-weight relationship.
	III	Breeding in fishes, breeding places, breeding habits & places, breeding in natural environment and in artificial ponds, courtship and reproductive cycles Induced breeding in fishes Breeding in shrimp, oysters, mussels, clams, pearl oyster, pila, and cephalopods.
	IV	Parental care in fishes, ovo-Vivi parity, oviparity, Vivi parity, nest building & brooding Embryonic and larval development of fishes. Embryonic and larval development of shrimp, crabs and molluscs of commercial importance Environmental factors affecting reproduction and development of cultivable aquatic fin & shell fish
	V	Endocrine system in fishes. Neurosecretory cells, androgenic gland, ovary, chromatophores, Molting, molting stages, metamorphosis in crustacean shell fish

## DEPARTMENT OF ENGLISH

### SEMESTER – I

#### 2020-2021 CURRICULAR PLAN

Subject Code: **ENG101C**

Title: **A COURSE IN COMMUNICATION AND SOFT SKILLS**

Month	Unit No.	Topic to be covered
Dec-2020	I	<b>Listening Skills</b> – 1. Importance of Listening 2. Types of Listening
Jan - 2021	I II III	<b>Listening Skills</b> – Barriers to Effective Listening <b>Speaking Skills</b> – Sounds of English: Vowels and Consonants <b>Grammar</b> –Concord and Modals
Feb-2021	II III	<b>Speaking Skills</b> – Word Accent and Intonation <b>Grammar</b> – Articles, Prepositions and Tenses (Present/Past/Future)
Mar-2021	III IV	<b>Grammar</b> – Question Tags, Sentence Transformation (Voice, Reported Speech & Degrees of Comparison) and Error Correction <b>Writing</b> – Punctuation and Spelling
April-21	V	<b>Soft Skills</b> –Positive Attitude and Emotional Intelligence, Telephone Etiquette

### SEMESTER – II

#### CURRICULAR PLAN

Subject Code: **ENG 201C**

Title: **A COURSE IN READING & WRITING SKILLS**

Month	Unit No.	Topic to be covered
June -'21	I II III IV	Netaji Subhas Chandra Bose on students & politics Upagupta An Astrologer's Day Vocabulary: Conversion of Words
July-'21	I II III IV V	The Night Train at Deoli Coromandel Fishers Girls One Word Substitutes, Collocations Notices, Agendas and Minutes
Aug-'21	I II III IV V	The Doll's House Ode to the West Wind Florence Nightingale Phrasal Verbs and Idioms Expansion of Ideas and Paragraph Writing
Sep-'21	IV V V V	Note Making/Taking Curriculum Vitae and Resume Official Letters E-Correspondence

**SEMESTER – III****2020-2021 CURRICULAR PLAN**Subject Code: **ENG 301C**Title : **GENERAL ENGLISH - II**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Nov-2020	I II V	Shyness My Shield Once Upon A Time Expansion of an idea
Dec-2020	I II V	Aurangzeb's Letter To His Teacher Our Casuarina Tree JAM Sessions, Information Transfer
Jan-'21	I III V	A Letter from Abraham Lincoln To His Son's Teacher The Open Window Note Taking. Brain Storming the topic through Diagram
Feb-'21	III IV V	The Beloved Charioteer Kanyasulkam Reporting for the Media
Mar-'21	V	Note Making, Writing for the Media Describing a Picture

**SEMESTER – III****2020-21 CURRICULAR PLAN**Subject Code: **CSS 301C**Title : **COMMUNICATION AND SOFT SKILLS – II**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Nov-2020	I II	Pronunciation – 1 : The Sounds of English Pronunciation – 2 : Word Accent
Dec-2020	II III	Pronunciation - 2 : Intonation Speaking Skills – 1: Conversation Skills Interview Skills Presentation Skills Public Speaking
Jan-'21	IV	Speaking Skills – 2 : Role Play Debate Group Discussion
Feb-'21	V	Writing Skills : Spelling Punctuation Report Writing
Mar-'21		Revision



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SEMESTER – IV

2020-2021 CURRICULAR PLAN

Subject Code: CSS 401C

Title : COMMUNICATION AND SOFT SKILLS – III

Month	Unit No.	Topic to be covered
June -'21	I IV V	Soft Skills – Positive Attitude, Body Language Letter Writing Resume & Curriculum Vitae
July-'21	I II	Emotional Intelligence, SWOT/C Analysis Paragraph Writing – Paragraph Structure, Development of Ideas
Aug-'21	I III	Emotional Intelligence, Netiquette Paraphrasing – Elements of Effective Paraphrasing, Techniques for Paraphrasing
Sep-'21	III IV V	Summarizing – What makes a good summary? Stages of Summarizing E-Correspondence Dialogue Writing

  
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**DEPARTMENT OF TELUGU**

SEMESTER – I

2020-2021 CURRICULAR PLAN

Subject Code: TEL101

Title: GENERAL TELUGU

Month	Unit No.	Topic to be covered
Dec-2020	I	మధుర స్నేహం
Jan - 2021	II III	రాజనీతి దౌమ్య ధర్మోపదేశం
Feb-2021	IV V	సుభద్రా పరిణయం సీతా రావణ సంవాదం
Mar-2021	V	సంధులు, సమాసాలు, అలంకారాలు
April-2021	V	ఛందస్సు

**SEMESTER – II**  
**CURRICULAR PLAN**

Subject Code: **TEL 201 C** Title: **GENERAL TELUGU**

Month	Unit No.	Topic to be covered
June -'21	I	1. ఆధునిక కవిత్వం 2. మనిషి 3. హరిజన శతకం
July-'21	II	1. తెలుగు కథానిక 2. భయం (కథ) 3. ఆకలి (కథ)
Aug-'21	III	1. తెలుగు నవల 2. రథ చక్రాలు (నవల)
	IV	1. తెలుగు నాటకం
Sep-'21	IV	2. యక్షగానం (నాటిక)
	V	1. తెలుగు సాహిత్య విమర్శ 2. విమర్శ స్వరూప స్వభావాలు

**SEMESTER – III**

**2020-2021 CURRICULAR PLAN**

Subject Code: **TEL 301C** Title: **GENERAL TELUGU - II**

Month	Unit No.	Topic to be covered
Nov-2020	I	ప్రాచీన కవిత్వం 1. వామనావతారం
Dec-2020	I	2. శాలివాహన విజయం
	II	II. ఆధునిక కవిత్వం 1. హరిజన శతకం
Jan-'21	II	2. మనిషి
	III	గద్యభాగం 1. తెలుగు భాష
Feb-'21	III	2. వ్యక్తిత్వ వికాసం
	IV	చందస్సు
Mar-'21	V	అలంకారాలు

**SEMESTER – IV**

**2020-2021 CURRICULAR PLAN**Subject Code: **LEP 401**Title : **LEADERSHIP EDUCATION**

Month	Unit No.	Topic to be covered
June -'21	I	1. వ్యవస్థ 2. నిర్వహణ
July-'21	II	3. నాయకత్వం 4. అభ్యాసం
Aug-'21	IV	5. ప్రేరణ 6. వ్యక్తిత్వం 7. గ్రూపులు
Sep-'21	V	8. సంఘర్షణ 9. జట్టు నిర్మాణం

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Month	Unit No.	Topic to be covered
Dec-2020	I వ్యాकरण	साहित्यकीमहत्ता विलोमशब्द
Jan - 2021	II III व्याकरण	मुक्तिधन सच्चीवीरता लिंग वचन
Feb-2021	IV V व्याकरण	गूढडसाई मित्रता काल
Mar-2021	VI व्याकरण	उसनेकहाथा पत्रलेखन अनुवाद

**SEMESTER – II**

**CURRICULAR PLAN**Subject Code: **HIN 201C**Title: **GENERAL HINDI**

Month	Unit No.	Topic to be covered
June -'21	I II व्याकरण	संकृतिऔरसाहित्य जरिया संधिविच्छेद
July-'21	III IV व्याकरण	भारतएकहै भूखहड़ताल वाक्योंकीशुद्धि
Aug-'21	V व्याकरण	एचआईवी/एड्सHIV/AIDS अनुवाद पत्रलेखन कारक
Sep-'21	VI	परमात्माकुता Rivision

**SEMESTER – III****2020-2021 CURRICULAR PLAN**Subject Code: **HIN301C**Title : **GENERAL HINDI**

Month	Unit No.	Topic to be covered
Nov-2020	I II	कबीरदास-साखी मातृभूमि अनुवाद
Dec-2020	III IV	सूरदासबालवर्णन हिन्दीसाहित्यकाइतिहास ज्ञानाश्रयीशाखा प्रेमाश्रयीशाखा
Jan-'21	V व्याकरण	मातृभाषाकेप्रति परिपत्र जापन सूचना
Feb-'21	VI सामान्यनिबंध (General essay s)	तोड़तीपत्थर समाचारपत्र पर्यावरणऔरप्रदूषण कंप्यूटर बेकारीकीसमस्या

# DEPARTMENT OF COMMERCE

## 2020-2021 CURRICULAR PLANS

### SEMESTER – I

**Subject Code: COMT11B Title: FUNDAMENTALS OF ACCOUNTING**

Month	Unit	Learning Units
Dec-2020	I	<b>Introduction</b> Need for Accounting – Definition – Objectives, – Accounting Concepts and Conventions – GAAP - Accounting Cycle - Classification of Accounts and its Rules – Book Keeping and Accounting - Double Entry Book-Keeping - Journalizing - Posting to Ledgers, Balancing of Ledger Accounts (including Problems).
Jan - 2021	II	<b>Subsidiary Books:</b> Types of Subsidiary Books - Cash Book, Three-column Cash Book- Petty Cash Book (including Problems).
Feb-2021	III	<b>Trial Balance and Rectification of Errors:</b> Preparation of Trial balance - Errors – Meaning – Types of Errors – Rectification of Errors – Suspense Account (including Problems)
Mar-2021	IV	<b>Bank Reconciliation Statement:</b> Need for Bank Reconciliation - Reasons for Difference between Cash Book and Pass Book Balances- Preparation of Bank Reconciliation Statement - Problems on both Favourable and Unfavourable Balance (including Problems).
April-21	V	<b>Final Accounts:</b> Preparation of Final Accounts: Trading account – Profit and Loss account – Balance Sheet – Final Accounts with Adjustments (including Problems).

**Subject Code:COMT12A Title: Business Organization and Management**

Month	Unit	Learning Units
Dec-2020	I	<b>Introduction Concepts of Business, Trade, Industry and Commerce:</b> Business – Meaning, Definition, Features and Functions of Business - Trade Classification – Aids to Trade – Industry Classification and Commerce - Factors Influencing the Choice of Suitable form of Organization.
Jan - 2021	II	<b>Forms of Business Organizations:</b> Features, Merits and Demerits of Sole Proprietor Ship and Partnership Business - Features Merits and Demerits of Joint Stock Companies - Public Sector Enterprises (PSEs) - Multinational Corporations (MNCs)- Differences between Private Limited Public Limited Company.
Feb-2021	III	<b>Company Incorporation:</b> Preparation of Important Documents for Incorporation of Company - Certificate of Incorporation and Certificate of Commencement of Business - Contents of Memorandum and Articles of Association – Content of Prospectus.



Mar-2021	IV	<b>Management:</b> Meaning Characteristics - Fayol's 14 Principles of Management - Administration Vs. Management - Levels of Management.
April-21	V	<b>Functions of Management:</b> Different Functions of Management - Meaning – Definition – Characteristics Merits and Demits of Planning - Principles of Organization – Line and staff of Organization.

Subject Code: Title: **BusinessEnvironment**

Month	Unit	Learning Units
Dec-2020	I	<b>Overview of Business Environment:</b> Business Environment – Meaning – Characteristics – Scope -Macro and Micro Dimensions of Business Environment -Environmental Analysis- Purpose & Techniques.
Jan - 2021	II	<b>Economic Environment:</b> Economic Environment – Nature of the Economy – Structure of Economy – Economic Policies & Planning the Economic Condition – NITI Ayog – National Development Council – Five Year Plans
Feb-2021	III	<b>Economic Policies:</b> Economic Reforms and New Economic Policy – New Industrial Policy – Competition Law – Fiscal Policy – Objectives and Limitations – Monetary Policy and RBI
Mar-2021	IV	<b>Social, Political and Legal Environment:</b> Concept of Social Responsibility of Business towards Stakeholders - Demonetization, GST and their Impact - Political Stability - Legal Changes
April-21	V	<b>Global Environment:</b> Globalization – Meaning – Role of WTO – WTO Functions -IBRD– Trade Blocks, BRICS, SAARC, ASEAN in Globalization

Subject Code:Title: **ENTREPRENEURSHIP DEVELOPMENT**

Month	Unit	Learning Units
	I	<b>Entrepreneurship:</b> Entrepreneur characteristics – Classification of Entrepreneurships –Role of Entrepreneurship in economic development –Start-ups.
	II	<b>Idea Generation and Project Formulation:</b> Sources of New Ideas in Entrepreneurships – Techniques for generating ideas - Preparation of Project Report –Content; Guidelines for Report preparation – Project Appraisal techniques – Economic Analysis; Financial Analysis; Market Analysis
	III	<b>Institutions Supporting and Taxation Benefits:</b> Central level Institutions: NABARD; SIDBI, NSIC – state level Institutions –DICs- SFC- SSIDC- Government Policy for SSIs- tax Incentives and Concessions –Non-tax Concessions Rehabilitation and Investment Allowances.

Subject Title: **ONLINE BUSSINESS**

Unit	Learning Units	Lecture Hours
I	Introduction to Online-Business-Definition-Characteristics-Advantages of Online Business-Challenges- Differences between off-line business, e-commerce and Online Business.	10
II	Online-business Strategies-Strategic Planning Process-Procurement -Logistics & Supply Chain Management- Customer Relationship management.	10
III	Designing Online Business Website – Policies - Security & Legal Issues - Online Advertisements - Payment Gateways - Case Study	10

Subject Code: *CAA-302G/C* Title: **Advanced Accounting**

Month	Unit	Learning Units
Nov-2020	I	<b>Accounting for Non-Profit Organisations:</b> Non-Profit Entities-Meaning - Features of Non-Profit Entities –Provisions as per Sec 8 - Accounting Process- Preparation of Accounting Records - Receipts and Payments Account- Income and Expenditure Account - Preparation of Balance Sheet (including problems)
Dec-2020	II	<b>Single Entry System:</b> Features – Differences between Single Entry and Double Entry – Disadvantages of Single Entry-Ascertainment of Profit and Preparation of Statement of Affairs (including Problems).
Jan-'21	III	<b>Hire Purchase System:</b> Features –Difference between Hire Purchase and Instalment Purchase Systems - Accounting Treatment in the Books of Hire Purchaser and Hire Vendor - Default and Repossession (including Problems)
Feb-'21	IV	<b>Partnership Accounts-I:</b> Meaning – Partnership Deed - Fixed and Fluctuating Capitals-Accounting Treatment of Goodwill - Admission and Retirement of a Partner (including problems)
Mar-'21	V	<b>Partnership Accounts-II:</b> Dissolution of a Partnership Firm – Application of Garner v/s Murray Rule in India – Insolvency of one or more Partners (including problems).

Subject Code: CBS-303G/C Title: **Business Statistics**

Month	Unit	Learning Units
Nov-2020	I	<b>Introduction to Statistics:</b> Definition, Importance and limitation of statistics, Collection of data, Schedule and questionnaire, Frequency distribution, Tabulation
Dec-2020	II	<b>Measures of Central Tendency:</b> Characteristics of measures of central tendency, Types of Averages, Arithmetic Mean, Geometric Mean, Harmonic Mean, Median, Mode
Jan-'21	III	<b>Measures of dispersion and Skewness:</b> Properties of dispersion, Range, Quartile Deviation, Mean deviation, Standard deviation, Coefficient of Variation, Skewness Definition, Karl Pearson's and Bowley's Measures Of skewness
Feb-'21	IV	<b>Measures of Relation:</b> Meaning and use of correlation, Types of correlation, Karl Pearson's correlation coefficient, Probable Error, Spearman's Rank correlation, Regression analysis comparison between correlation and Regression, Regression Equations
Mar-'21	V	<b>Analysis of Time Series &amp; Index Numbers</b> Meaning and utility of time series, Components of Time series, Measurement of trend and Seasonal Variations, Techniques of Time series analysis, Methods of averages(Semi , Moving averages), Least square method, Index Numbers, Methods of Construction of Index numbers, Price index numbers, Limitations of index numbers

Subject Code: **CM 304 G** Title: **Marketing**

Month	Unit	Learning Units
Nov-2020	I	<b>Introduction:</b> Concepts of Marketing: Need, Wants and Demand - Marketing Concepts – Marketing Mix - 4 P's of Marketing – Marketing Environment.
Dec-2020	II	<b>Consumer Behaviour and Market Segmentation:</b> Buying Decision Process – Stages – Buying Behaviour – Market Segmentation –Bases of Segmentation - Selecting Segments – Advantages of Segmentation
Jan-'21	III	<b>Product Management:</b> Product Classification – Levels of Product - Product Life Cycle - New Products, Product Mix and Product Line Decisions - Design, Branding, Packaging and Labelling.

Feb-'21	IV	<b>Pricing Decision:</b> Factors Influencing Price – Determination of Price - Pricing Strategies: Skimming and Penetration Pricing.
Mar-'21	V	<b>Promotion and Distribution:</b> Promotion Mix - Advertising - Sales promotion - Publicity – Public Relations - Personal Selling and Direct Marketing - Distribution Channels – Online Marketing

Subject Code:CBL-501(U) Title Business Leadership

	Unit	Learning Units
	I	<b>Unit-I: Introductory: Leadership</b> - Traits, Skills and Styles- Leadership Development - Qualities of a Good Leader.
	II	<b>Unit-II: Decision-Making and Leadership:</b> Leadership for Sustainability - Power, Influence, Impact - Leadership Practices - Organizations and Groups: Organizational Culture and Leadership - Leadership in Business Organizations
	III	<b>Unit-III: Special Topics:</b> Profiles of a few Inspirational Leaders in Business – Jemshedji Tata - Aditya Birla - Swaraj Paul - L N Mittal - N R Narayana Murthy - AzimPremji, etc.

Subject Code: **CCOA-502 G/C C** Title:**Cost Accounting**

Month	Unit	Learning Units
Nov-2020	I	<b>Introduction:</b> Distinguish between Financial Accounting, Cost Accounting and management accounting - Cost Concepts and Classification – Cost Centre and Cost Unit – Preparation of Cost Sheet.
Dec-2020	II	<b>Elements of Cost: Materials:</b> Material control – Selective control, ABC technique – Methods of pricing issues – FIFO, LIFO, Weighted average, Base stock methods, choice of method(including problems).
Jan-'21	III	<b>Labour and Overheads:</b> Labour: Control of labour costs – time keeping and time booking – Idle time –Methods of remuneration – labour incentives schemes - Overheads: Allocation and apportionment of overheads – Machine hour rate.
Feb-'21	IV	<b>Methods of Costing: Job costing</b> – Process costing - treatment of normal and abnormal process losses – preparation of process cost accounts – treatment of waste and scrap, joint products and by products (including problems).
Mar-'21	V	<b>Costing Techniques:</b> Marginal Costing – Standard costing – Variance Analysis (including problems).

Subject Code: **CTAX 503 CC**Title: **TAXATION**

Month	Unit	Learning Units
Nov-2020	I	<b>Introduction:</b> Objectives - Principles of Taxation - Brief History - Basic Concepts; Capital and Revenue; Basis of Charge - Exempted Incomes - Residential Status – Incidence of Taxation.
Dec-2020	II	<b>Direct and Indirect Taxes</b> – Service Tax – VAT – Central Sales Tax – Latest Developments.
Jan-‘21	III	<b>Computation of income under different heads:</b> Income from Salary; Income from House Property; Deductions u/s 80C to 80U - Income from Capital Gains; Income from Other Sources (simple problems).
Feb-‘21	IV	<b>Taxation System in India:</b> Objectives; Tax Holiday; Modes of Tax Recovery (Section 190 and 202); Payments and Refunds; Filing of Returns.
Mar-‘21	V	<b>Tax Planning:</b> Tax Avoidance and Tax Evasion; Penalties and Prosecutions; Income Tax Authorities.

Subject Code: **CGST-503G/C**Title : **GOODS&SERVICE TAX FUNDAMENTALS**

Month	Unit	Learning Units
Nov-2020	I	<b>Introduction: Overview of GST</b> - Concepts – Limitations of VAT – Need for Tax Reforms - Justification for introduction of GST - Shortcomings and advantages at the Central Level and State Level on introduction of GST - Process of Introduction of GST - Constitutional Amendments.
Dec-2020	II	<b>GST: Principles</b> – Models of GST: Australian, Canadian, Kelkar-Shah – Bagchi Poddar - Comprehensive structure of GST model in India: Single, Dual GST – Transactions covered under GST.
Jan-‘21	III	<b>Taxes and Duties:</b> Subsumed under GST - Taxes and Duties outside the purview of GST: Tax on items containing Alcohol – Tax on Petroleum products - Tax on Tobacco products - Taxation of Services
Feb-‘21	IV	<b>Inter-State Goods and Services Tax:</b> Major advantages of IGST Model – Interstate Goods and Service Tax: Transactions within a State under GST – Interstate Transactions under GST - Illustrations
Mar-‘21	V	<b>Time of Supply of Goods &amp; Services:</b> Value of Supply - Input Tax Credit – Distribution of Credit - Matching of Input Tax Credit - Availability of credit in special circumstances- Cross utilization of ITC between the Central GST and the State GST.

**Subject Code:CCG-504G/C C Title:Commercial Geography**

Month	Unit	Learning Units
Nov-2020	<b>I</b>	The Earth: Internal structure of the Earth – Latitude – Longitude – Realms of the Earth –Evolution of the Earth – Environmental pollution - Global Warming - Measures to be taken to protect the Earth.
Dec-2020	<b>II</b>	India – Agriculture: Land Use - Soils - Major crops – Food and Non-food Crops – Importance of Agriculture – Problems in Agriculture – Agriculture Development.
Jan-‘21	<b>III</b>	India – Forestry: Forests – Status of Forests in Andhra Pradesh – Forest (Conservation)Act, 1980 – Compensatory Afforestation Fund (CAF) Bill, 2015 - Forest Rights Act, 2006 and its Relevance – Need for protection of Forestry.
Feb-‘21	<b>IV</b>	India – Minerals and Mining: Minerals – Renewable and non Renewable – Use of Minerals – Mines – Coal, Barites, etc. – Singareni Coal mines and Mangampeta Barites – Districtwise Profile.
Mar-‘21	<b>V</b>	India – Water Resources – Rivers: Water resources - Rationality and equitable use of water – Protection measures - Rivers - Perennial and peninsular Rivers - Interlinking of Rivers -Experience of India and Andhra Pradesh.

**Subject Code CCB 505CE G/C Title: Central Banking**

Month	Unit	Learning Units
Nov-2020	<b>I</b>	Introduction: Evolution and Functions of Central Bank - Development of Central Banks in Developed and Developing countries - Trends in Central Bank Functions.
Dec-2020	<b>II</b>	Central banking in India: Reserve Bank of India - Constitution and Governance, Recent Developments, RBI Act. - Interface between RBI and Banks.
Jan-‘21	<b>III</b>	Monetary and Credit Policies: Monetary policy statements of RBI - CRR - SLR – Repo Rates - Reverse Repo Rates - Currency in circulation - Credit control measures.
Feb-‘21	<b>IV</b>	Inflation and price control by RBI: Intervention mechanisms - Exchange rate stability -Rupee value - Controlling measures.
Mar-‘21	<b>V</b>	Supervision and Regulation: Supervision of Banks - Basle Norms, Prudential Norms, Effect of liberalization and Globalization - Checking of money laundering and frauds.

Month	Unit	Learning Units
Nov-2020	I	Rural Credit: Objectives and Significance of Rural credit - Classification of rural credit -General Credit Card (GCC) – Financial Inclusion - Rupay Card.
Dec-2020	II	Rural Credit Agencies: Institutional and Non-institutional Agencies for financingagriculture and Rural development - Self-Help Groups (SHG) - Financing for Rural Industries.
Jan-'21	III	Farm Credit: Scope - Importance of farm credit - Principles of Farm Credit - Types- Cost of Credit - - problems and remedial measures - Kisan Credit Card (KCC) Scheme
Feb-'21	IV	Sources of Farm Credit: Cooperative Credit: PACS - APCOB - NABARD SLBC- Lead Bank Scheme - Role of Commercial and Regional Rural Banks - Problems of recovery and over dues.
Mar-'21	V	Farm Credit Analysis: Eligibility Conditions - Analysis of 3 R's (Return, RepaymentCapacity and Risk-bearing Capacity) - Analysis of 3 C's of Credit (Character, Capacity and Capital) - Crop index reflecting use and farm credit - Rural Credit Survey Reports..

Subject Code:**CACC201G/C C** Title :**Financial Accounting**

Month	Unit	Learning Units
June -'21	I	Depreciation: Meaning and Causes of Depreciation - Methods of Depreciation: Straight Line – Written Down Value –Annuity and Depletion Method (including Problems).
July-'21	II	Provisions and Reserves: Meaning – Provision vs. Reserve – Preparation of Bad Debts Account – Provision for Bad and Doubtful Debts – Provision for Discount on Debtors – Provision for Discount on Creditors - Repairs and Renewals Reserve A/c (including Problems).
Aug-'21	III	Bills of Exchange: Meaning of Bill – Features of Bill – Parties in the Bill – Discounting of Bill – Renewal of Bill – Entries in the Books of Drawer and Drawee (including Problems).
Sep-'21	IV	Consignment Accounts: Consignment - Features - Proforma Invoice - Account Sales – Del-credere Commission - Accounting Treatment in the Books of Consigner and Consignee - Valuation of Closing Stock - Normal and Abnormal Losses (including Problems).
Oct-10	V	Joint Venture Accounts: Joint Venture - Features - Difference between Joint Venture and Consignment – Accounting Procedure – Methods of Keeping Records–One Vendor Keeps the Accounts and Separate Set off Books Methods (including Problems).

Month	Unit	Learning Units
June -'21	I	<b>Overview of Business Environment:</b> Business Environment – Meaning – Characteristics – Scope -Macro and Micro Dimensions of Business Environment -Environmental Analysis- Purpose & Techniques.
July-'21	II	<b>Economic Environment:</b> Economic Environment – Nature of the Economy – Structure of Economy – Economic Policies & Planning the Economic Condition – NITI Ayog – National Development Council – Five Year Plans
Aug-'21	III	<b>Economic Policies:</b> Economic Reforms and New Economic Policy – New Industrial Policy – Competition Law – Fiscal Policy – Objectives and Limitations – Monetary Policy and RBI
Sep-'21	IV	<b>Social, Political and Legal Environment:</b> Concept of Social Responsibility of Business towards Stakeholders - Demonetization, GST and their Impact - Political Stability - Legal Changes
Oct-10	V	<b>Global Environment:</b> Globalization – Meaning – Role of WTO – WTO Functions -IBRD– Trade Blocks, BRICS, SAARC, ASEAN in Globalization

Month	Unit	Learning Units
June -'21	I	Non-Trading/ Service Organizations: Concept - Types of Service Organizations – Section (8) and other Provisions of Companies Act, 2013.
July-'21	II	Electricity Supply Companies: Accounts of Electricity supply companies: Double Accounting system – Revenue Account – Net Revenue Account – Capital Account – General Balance Sheet (including problems).
Aug-'21	III	Bank Accounts Bank Accounts – Books and Registers to be maintained by Banks – Banking Regulation Act, 1969 - Legal Provisions Relating to preparation of Final Accounts (including problems).
Sep-'21	IV	Life Insurance Companies Life Insurance Companies –Preparation of Revenue Account, Profit and Loss Account, Balance Sheet (including problems) – LIC Act, 1956.
Oct-10	V	General Insurance Principles – Preparation of final accounts – with special reference to fire and marine insurance (including problems) – GIC Act, 1972.



Month	Unit	Learning Units
June -'21	I	<b>Contract</b> Meaning and Definition of Contract-Essential elements of valid Contract -Valid, Void and Voidable Contracts - Indian Contract Act, 1872 Definition of Valid Offer, Acceptance and Consideration - Essential elements of a Valid Offer, Acceptance and Consideration.
July-'21	II	<b>Capacity of the Parties and Contingent Contract</b> Rules regarding to Minors contracts - Rules relating to contingent contracts – Different modes of discharge of contracts-Rules relating to remedies to breach of contract.
Aug-'21	III	<b>Sale of Goods Act 1930</b> Contract of sale – Sale and agreement to sell – Implied conditions and warranties –Rights of unpaid vendor.
Sep-'21	IV	<b>Consumer Protection Act, 1986</b> Introduction, Aims and objectives of the Act - Definition - Consumer Rights - Unfair and restrictive trade practices - consumer protection Councils - Consumer disputes Redressal agencies - Penalties for violation.
Oct-10	V	<b>Cyber Laws</b> Cyber Law and Contract Procedures - Digital Signature - Safety Mechanisms

## Subject Code: CIT-403G CTitle:Income Tax

Month	Unit	Learning Units
Nov-2020	I	Introduction: Income Tax Law – Basic concepts: Income, Person, Assesses, Assessment year, Agricultural Income, Residential status, Income exempt from tax (Theory only).
Dec-2020	II	Income from salary: Allowances, perquisites, profits in lieu of salary, deductions from salary income, computation of salary income and qualified savings eligible for deduction u/s 80C(Simple- problems).
Jan-'21	III	Income from House Property: Annual value, let-out/self occupied/deemed to be let-out house, deductions from annual value - computation of income from house property (Simple- problems)
Feb-'21	IV	Income from Capital Gains – Income from other sources – (from Individual point of view) -chargeability – and assessment (Simple- problems).
Mar-'21	V	Computation of total income of an individual – Deductions under section - 80 (Simple- problems).

**Subject Code CBTP-401C CTitle: Banking Theory & Practice**

Month	Unit	Learning Units
Nov-2020	I	Introduction Meaning & Definition of Bank – Functions of Commercial Banks – Kinds of Banks -Central Banking Vs. Commercial Banking.
Dec-2020	II	Banking Systems Unit Banking , Branch Banking, Investment Banking- Innovations in banking – e-banking - Online and Offshore Banking , Internet Banking - Anywhere Banking - ATMs- RTGS.
Jan-‘21	III	Banking Development Indigenous Banking - Cooperative Banks, Regional Rural banks, SIDBI, NABARD -EXIM Bank.
Feb-‘21	IV	Banker and Customer Meaning and Definition of Banker and customer – Types of Customers - General Relationship and Special Relationship between Banker and Customer - KYC Norms.
Mar-‘21	V	Collecting Banker and Paying Banker

Subject Code : **CEM -601G/C C**Title: **Event Management**

Unit	Learning Units
I	Event Concept: Corporate Events and Customer’s needs - Types of Events - Corporate hospitality – Exhibitions – Trade Fairs – Conferences –Business and Government Meets - Corporate event packages - Menu Selection - Customization.
II	. Outdoor Events: Logistics, Types of Outdoor events, Risk management - Health and safety, Marketing and sponsorship, HR Management, Programming and Entertainment.
III	Celebrity Events: Launches, Fashion shows, National festivals and high-profile charity events - Liaison with agents, Contract Negotiations, Client briefings, Celebrity wish lists and expectations - Liaisoning with Govt. Departments.

Month	Unit	Learning Units
Nov-2020	I	Introduction: Concepts of Marketing: Product Concept – Selling Concept - Societal Marketing Concept – Marketing Mix - 4 P's of Marketing – Marketing Environment.
Dec-2020	II	Consumer Markets and Buyer Behaviour: Buying Decision Process – Stages – Buying Behaviour – Market Segmentation – Selecting Segments – Advantages of Segmentation.
Jan-'21	III	Product Management: Product Life Cycle - New products, Product mix and Product line decisions - Design, Branding, Packaging and Labelling.
Feb-'21	IV	: Pricing Decision: Factors influencing price determination, Pricing strategies: Skimming and Penetration pricing.
Mar-'21	V	Promotion and Distribution: Promotion Mix - Advertising - Publicity – Public relations - Personal selling and Direct marketing - Distribution Channels – Online marketing- Global marketing.

**Subject Code:CAU-603GE G/CTitle:Auditing**

Month	Unit	Learning Units
Nov-2020	I	<b>Introduction:</b> Meaning – Objectives – Importance of Auditing – Characteristics - Book Keeping vs Auditing - Accounting vs Auditing – Role of Auditor in Checking Corporate Frauds.
Dec-2020	II	<b>Types of Audit:</b> Based on Ownership, Time and Objective - Independent, Financial, Internal, Cost, Tax, Government, Secretarial Audits
Jan-'21	III	<b>Planning of Audit:</b> Steps to be taken at the Commencement of a New Audit – Audit Programme - Audit Note Book– Audit Working Papers - Audit Evidence - Internal Check, Internal Audit and Internal Control.
Feb-'21	IV	<b>Vouching and Investigation:</b> Definition and Importance of Vouching – Objectives of Vouching -Vouching of Cash and Trading Transactions – Investigation - Auditing vs. Investigation
Mar-'21	V	<b>Company Audit and Auditors Report:</b> Auditor's Qualifications – Appointment and Reappointment – Rights, Duties, Liabilities and Disqualifications - Audit Report: Contents –Preparation - Relevant Provisions of Companies Act, 2013.

**Subject Code : CMA 604GE G/C Title Management Accounting**

Month	Unit	Learning Units
Nov-2020	I	Management Accounting: Interface with Financial Accounting and Cost Accounting - Financial Statement analysis and interpretation: Comparative analysis – Common size analysis and trend analysis (including problems).
Dec-2020	II	Ratio Analysis: Classification, Importance and limitations - Analysis and interpretation of Accounting ratios - Liquidity, profitability, activity and solvency ratios (including problems).
Jan-'21	III	Fund Flow Statement: Concept of fund: Preparation of funds flow statement. Uses and limitations of funds flow analysis (including problems).
Feb-'21	IV	Cash Flow Statement: Concept of cash flow – Preparation of cash flow statement – Uses and limitations of cash flow analysis (including problems).
Mar-'21	V	Break-Even Analysis and Decision Making: Calculation of Break-even point - Uses and limitations - Margin of safety – Make/Buy Decision - Lease/own Decision (including Problems).

**Subject Code : CFS 605 CE G/C Title Financial Services**

Month	Unit	Learning Units
Nov-2020	I	Financial Services: Role of Financial Services - Banking and Non Banking Companies – Activities of Non Banking Finance Companies- Fund Based Activities - Fee Based Activities .
Dec-2020	II	Merchant Banking Services: Scope and importance of merchant banking services - Venture Capital - Securitization - Demat services - Commercial Papers – Treasury bills
Jan-'21	III	Leasing and Hire-Purchase: Types of Lease, Documentation and Legal aspects – Fixation of Rentals and Evaluation - Hire Purchasing- Securitization of debts - House Finance.
Feb-'21	IV	Credit Rating: Purpose – Types – Credit Rating Symbols – Agencies: CRISIL and CARE – Equity Assessment vs. Grading – Mutual funds.
Mar-'21	V	Break-Even Analysis and Decision Making: Calculation of Break-even point - Uses and limitations - Margin of safety – Make/Buy Decision - Lease/own Decision (including Problems).

Subject Code : **CMFS 606 CE G/C**Title: **Marketing of Financial Services**

Month	Unit	Learning Units
Nov-2020	I	Difference between Goods and Services: Managing Service Counters – Integrated Service Management – Service Elements.
Dec-2020	II	:Constructing Service Environment – Managing People for service Advantage – Service Quality and Productivity – Customer Loyalty.
Jan-'21	III	Pricing and Promotion Strategies: Pricing strategies – Promotion strategies – B2B Marketing – Marketing Planning and Control for services.
Feb-'21	IV	Distributing Services: Cost and Revenue Management – Approaches for providing services - Channels for Service provision – Designing and managing Service Processes.
Mar-'21	V	: Retail Financial Services - Investment services – Insurance services - Credit Services - Institutional Financial Services - Marketing practices in select Financial Service Firms.

## **DEPARTMENT OF ECONOMICS**

### **SEMESTER – I**

#### **2020-2021 CURRICULAR PLAN**

Subject Code: **ECO - 101C.**Title: **MICRO ECONOMIC ANALYSIS**

Month	Unit No.	Topic to be covered
Dec-2020	I	ECONOMIC ANALYSIS and METHODOLOGY
Jan - 2021	II	THEORY OF CONSUMPTION
Feb-2021	III	THEORY OF PRODUCTION
Mar-2021	IV V	THEORY OF EXCHANGE THEORY OF DISTRIBUTION
April-21	V	THEORY OF DISTRIBUTION

### **SEMESTER – II**

**2020-2021 CURRICULAR PLAN**Subject Code: **ECO - 201C.**Title: **MACRO ECONOMIC ANALYSIS**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
JUNE - 21	I	NATIONAL INCOME
JULY - 21	II	THEORY OF EMPLOYMENT
AUGUST - 21	II	THEORY OF EMPLOYMENT
	III	MONEY and BANKING
SEPTEMBER - 21	IV	INFLATION and TRADE CYCLES
	V	FINANCE and INSURANCE
OCTOBER - 21	V	FINANCE and INSURANCE

**A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU****DEPARTMENT OF ECONOMICS****SEMESTER – III****2020-2021 CURRICULAR PLAN**Subject Code: **ECO - 301C**Title :- **DEVELOPMENT ECONOMICS**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Nov-2020	I	ECONOMIC GROWTH and DEVELOPMENT
Dec-2020	II	MODERN ECONOMIC GROWTH
Jan-'21	III	MODERN ECONOMIC GROWTH THEORIES OF DEVELOPMENT and UNDER DEVELOPMENT
Feb-'21	IV	STRATEGIES OF ECONOMIC DEVELOPMENT
Mar-'21	V	INSTITUTIONS and ECONOMIC DEVELOPMENT

**SEMESTER – IV**

**2020-21 CURRICULAR PLAN**Subject Code: **ECO - 401C**Title : **BANKING and INTERNATIONAL TRADE**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
JUNE - 21	I	TRADE CYCLES and INFLATION
JULY - 21	II	BANKING
AUGUST - 21	III	NON BANKING FINANCIAL INSTITUTIONS
SEPTEMBER - 21	IV V	CONCEPTS OF SHARES - DEBENTURES MACRO ECONOMIC POLICY
OCTOBER - 21	V	MACRO ECONOMIC POLICY

**SEMESTER – V****2020-2021 CURRICULAR PLAN**Subject Code: **ECO - 501C**Title : **ECONOMIC DEVELOPMENT and INDIAN ECONOMY**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Nov-'20	I	CONCEPT OF ECONOMIC GROWTH
Dec-'20	II	SUSTAINABLE DEVELOPMENT
Jan-'21	III	BASIC FEATURES OF INDIAN ECONOMY
Feb-'21	IV V	NATIONAL INCOME IN INDIA ECONOMIC REFORMS
Mar -21	V	ECONOMIC REFORMS

**SEMESTER – V****2020-21 CURRICULAR PLAN**Subject Code: **ECO - 502C**Title : **INDIAN and ANDHRAPRADESH ECONOMY**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
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Nov-'20	I	INDIAN AGRICULTURE
Dec-'20	II	STRUCTURE and GROWTH OF INDIAN INDUSTRY
Jan-'21	III	DISINVESTMENT IN INDIA
Feb-'21	IV V	PLANING IN INDIAN ECONOMY ANDHRA PRADESH ECONOMY
Mar -21	V	ANDHRA PRADESH ECONOMY

**SEMESTER – VI**  
**2020-21 CURRICULAR PLAN**

Subject Code: **ECO – 601GE**

Title : **AGRICULTURAL ECONOMICS**

Month	Unit No.	Topic to be covered
JUNE - 21	I	NATURE and SCOPE OF AGRICULTURAL ECONOMICS
JULY - 21	II	CONCEPT OF PRODUCTION FUNCTION
AUG - 21	III	GROWTH and PRODUCTIVITY TRENDS in INDIAN AGRICULTURE
SEP- 21	IV V	SYSTEMS OF FARMING EMERGING TRENDS IN PRODUCTION
OCT - 21	V	EMERGING TRENDS IN PRODUCTION

**A.G.&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**

**DEPARTMENT OF HISTORY**

**SEMESTER – I**

**2020-2021 CURRICULAR PLAN**

Subject Code: **HIS - 101C**. Title: **ANCIENT INDIAN HISTORY and CULTURE**



(FROM INDUS VALLEY CIVILIZATION)

Month	Unit No.	Topic to be covered
Dec-2020	I	ANCIENT INDIAN CIVILIZATION
Jan - 2021	II	ANCIENT INDIAN HISTORY & CULTURE
Feb-2021	III	HISTORY& CULTURE OF SOUTH INDIA
Mar-2021	IV	INDIA FROM 3 <sup>rd</sup> CENTURY AD TO 8 <sup>th</sup> CENTURY AD
April-21	V	HISTORY & CULTURE OF SOUTH INDIA

**DEPARTMENT OF HISTORY**

SEMESTER – II

**2020-2021 CURRICULAR PLAN**

Subject Code: **HIS- 201C** Title: **MEDIEVAL INDIAN HISTORY& CULTURE ( 1206A.D to 1764A.D )**

Month	Unit No.	Topic to be covered
JUNE - 21	I	IMPACT OF TURKISH INVASION
JULY - 21	II	IMPACT OF ISLAM ON INDIAN SOCIETY AND CULTURE
AUGUST - 21	III	EMERGENCE OF MUGHAL EMPIRE
SEPTEMBER - 21	IV	MUGHALs ADMINISTRATION – RISE OF MARATHAS
OCTOBER - 21	V	INDIA UNDER COLONIAL HEGEMONY

**SEMESTER – III**

**2020-2021 CURRICULAR PLAN**

Subject Code: **HIS - 301C** Title :- **MODERN INDIAN HISTORY & CULTURE( 1764-1947 A.D )**

Month	Unit No.	Topic to be covered
Nov-2020	I	1857 REVOLTS

Dec-2020	II	SOCIOAL, RELIGIOUS & SELF – RESPECT MOVEMENTS
Jan-‘21	III	CAUSES FOR THE GROWTH OF NATIONALISM
Feb-‘21	IV	FREEDOM STRUGGLE FROM 1920 to 1947
Mar-‘21	V	MUSLIM LEAGUE& THE GROWTH OF COMMUNALISM

**SEMESTER – IV**

**2020-21 CURRICULAR PLAN**

Subject Code: HIS- 401C

Title SOCIAL REFORM MOVEMENT &FREEDOM STRUGGLE

Month	Unit No.	Topic to be covered
JUNE - 21	I	SOCIO RELIGIOUS & SELF RESPECT MOVEMENT
JULY - 21	II	GROWTH OF NATIONALISM
AUGUST - 21	III	FREEDOM STRUGGLE ( 1885-1920)
SEPTEMBER - 21	IV	FREEDOM STRUGGLE ( 1920- 1947)
OCTOBER - 21	V	MUSLIM LEAGUE & GROWTH OF COMMUNALISM

**DEPARTMENT OF HOSTORY**

**SEMESTER – V**

**CURRICULAR PLAN**

Subject Code: **HIS-502 C** Title : **HISTORY & CULTURE OF ANDHRA ( FROM 1512 TO 1956 AD)**

Month	Unit No.	Topic to be covered
Nov-‘20	I	ANDHRA THROUGH 16 <sup>th</sup> & 19 <sup>th</sup> CENTURIES AD
Dec-‘20	II	ANDHRA UNDER BRITISH RULE
Jan-‘21	III	SOCIAL REFORM & NEW LITERARY MOVEMENTS
Feb-‘21	IV	FREEDOM MOVEMENT IN ANDHRA
Mar -21	V	MOVEMENT FOR SEPARATE ANDHRA STATE

**SEMESTER – VI**

**2020-21 CURRICULAR PLAN**

Subject Code:HIS– 601GE

Title : HISTORY OF MODERN EUROPE ( FROM 19<sup>th</sup> CENTURY to 1945 A.D)

Month	Unit No.	Topic to be covered
JUNE - 21	I	INDUSTRIAL REVOLUTION

JULY - 21	II	UNIFICATION MOVEMENT IN ITALY & GERMANY
AUG - 21	III	COMMUNIST REVOLUTION IN RUSSIA
SEP- 21	IV	WORLD WAR 1
OCT - 21	V	WORLD WAR 2

**A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**

**DEPARTMENT OF POLITICAL SCIENCE  
SEMESTER – I  
2020-2021 CURRICULAR PLAN**

Subject Code: POL - 101C.

Title: **Basic Concepts of Political Science**

Month	Unit No.	Topic to be covered
Dec-2020	I	Introduction scope of Political Science
Jan - 2021	II	State-Theories of Origin of the state
Feb-2021	III	Sovereignty
Mar-2021	IV	Law ,Liberty & Equality
April-21	V	Rights & Duties

**DEPARTMENT OF POLITICAL SCIENCE  
SEMESTER – II  
2020-2021 CURRICULAR PLAN**

Subject Code: **POL - 201C.**

Title: **Concept Theories and Institutions**

Month	Unit No.	Topic to be covered
JUNE - 21	I	Democracy

JULY - 21	II	Ideology
AUGUST - 21	III	Constitutionalism
SEPTEMBER - 21	IV	Executive
OCTOBER - 21	V	Popular Control

**A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**

**DEPARTMENT OF POLITICAL SCIENCE  
SEMESTER – III  
2020-2021 CURRICULAR PLAN**

Subject Code :- **301C** Title :- **Indian costitution**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Nov-2020	I	Introduction of Constitution
Dec-2020	II	Philosophy of Indian Constitution
Jan-'21	III	Union Government
Feb-'21	IV	Centro and State
Mar-'21	V	Judiciary

**DEPARTMENT OF POLITICAL SCIENCE  
SEMESTER – IV  
2020-21 CURRICULAR PLAN**

Subject Code: POL - 401C Title : Indian Political Process

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
JUNE - 21	I	Introduction to Indian Party System

JULY - 21	II	Elections in India
AUGUST - 21	III	Political Parties in India
SEPTEMBER - 21	IV	Voting Behaviour
OCTOBER - 21	V	Trends in Political System

**DEPARTMENT OF POLITICAL SCIENCE  
SEMESTER – V  
2020-2021 CURRICULAR PLAN**

**Subject Code POL- 501C      Title : Indian Political Taught**

Month	Unit No.	Topic to be covered
Nov-'20	I	Manudharma Kotilya Ardhasasthra
Dec-'20	II	Gandhi Sathyagraha Jyothirao pule Social Reforms
Jan-'21	III	Nehre Non-Alignment Ambedkar Social Momment
Feb-'21	IV V	M.N Roy Radical Humanism Jaya Prakash Narayana Sarvodaya

**DEPARTMENT OF POLITICAL SCIENCE  
SEMESTER – V  
2020-21 CURRICULAR PLAN**

Subject Code: POL - 502C      Title : Westren Political Taught

Month	Unit No.	Topic to be covered
Nov-'20	I	Plato Dharma Educational System Ideal State
Dec-'20	II	Aristotle Ideal State Theory of Revolutions

Jan-'21	III	Machiavelli Political ideas Hobbes, lock Rousseau Social Contract Theories
Feb-'21	IV	Hegel Civil Society KarlMarx Communuism

**DEPARTMENT OF POLITICAL SCIENCE**

**SEMESTER – VI**

**2020-21 CURRICULAR PLAN**

Subject Code: POL – 601GE

Title : Local Self Government in Andhra Pradesh

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
JUNE - 21	I	Local Self Government uses, Three Tire System in Local Self Government
JULY - 21	II	73 <sup>rd</sup> and 74 <sup>th</sup> Amendments in Rural and Urban Local Self Governments
AUG - 21	III	Structure and Functions of Panchayathi Raj in Andhra Pradesh
SEP- 21	IV	Structure and Functions of Urban Local Bodiesin Andhra Pradesh
OCT-21	V	Role of Leader Ship and Emerging Challenges

**DEPARTMENT OF POLITICAL SCIENCE**

**SEMESTER – VI**

**2020-21 CURRICULAR PLAN**

Subject Code: POL – 602CE

Title : International Relations

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
JUNE - 21	I	Basic Concept of International Relations
JULY - 21	II	Approaches to the study of International Relations

AUG - 21	III	International Relations 1914-1945
SEP- 21	IV	International Relations 1945 Onwards
OCT-21	V	International Organizations

**DEPARTMENT OF POLITICAL SCIENCE**

**SEMESTER – VI**

**2020-21 CURRICULAR PLAN**

Subject Code: **POL –603CE**

Title : **Indian Foreign Policy**

Month	Unit No.	Topic to be covered
JUNE - 21	I	Evolution of Indian Foreign Policy
JULY - 21	II	Non Alignment and UNO
AUG - 21	III	Indias Relation with USA and China
SEP- 21	IV	India and her Neighbours

**A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**

**DEPARTMENT OF ENVIRONMENTAL STUDIES**

**SEMESTER – I**

**2020-2021 CURRICULAR PLAN**

Subject Code: **HVPE-101.**

Title: **HUMAN VALUES AND PROFESSIONAL ETHICS**

Month	Unit No.	Topic to be covered
Dec-2020	I	Value Education, Definition, Concept and Need for Value Education 2. The Content and Process of Value Education 3. Self-Exploration as a means of Value Education 4. Happiness and Prosperity as parts of Value Education ANCIENT INDIAN CIVILIZATION
Jan - 2021	II	Human Being is more than just the Body 2.

		Harmony of the Self ('I') with the Body 3. Understanding Myself as Co-existence of the Self and the Body 4. Understanding Needs of the Self and the Needs of the Body
Feb-2021	III	Family as a basic unit of Human Interaction and Values in Relationships 2. The Basics for respect and today's Crisis : Affection, Care, Guidance, Reverence, Glory, Gratitude and Love 3. Comprehensive Human Goal : The Five dimensions of Human Endeavour
Mar-2021	IV	. The Basics for Ethical Human conduct 2. Defects in Ethical Human Conduct 3. Holistic Alternative and Universal order 4. Universal Human Order and Ethical Conduct
April-21	V	Value Based Life and Profession 2. Professional Ethics and Right Understanding 3. Competence in Professional Ethics 4. Issues in Professional Ethics – The Current scenario 5. Vision for Holistic Technologies, Production System and Management Models

## DEPARTMENT OF ENVIRONMENTAL STUDIES

### SEMESTER – III

#### 2020-2021 CURRICULAR PLAN

Subject Code: **ENE-301** Title: **ENVIRONMENTAL EDUCATION**

Nov-2020	Unit No.	Topic to be covered
Dec-2020 Jan-'21	I	Multidisciplinary nature of environmental education; scope and importance. 2. Man as an integral product and part of the Nature. 3. A brief account of land, forest and water resources in India and their importance. 4. Biodiversity : Definition; importance of Biodiversity - ecological, consumptive, productive, social, ethical and moral, aesthetic, and option value. 5. Levels of Biodiversity: genetic, species and ecosystem diversity.
Feb-'21 Mar-'21	II	1. Human population growth and its impacts on environment; land use change, land degradation, soil erosion and desertification. 2. Use and over-exploitation of surface and ground water,



		<p>construction of dams, floods, conflicts over water (within India). 3. Deforestation: Causes and effects due to expansion of agriculture, firewood, mining, forest fires and building of new habitats. 4. Non-renewable energy resources, their utilization and influences. 5. A brief account of air, water, soil and noise pollutions; Biological, industrial and solid wastes in urban areas. Human health and economic risks. 6. Green house effect - global warming; ocean acidification, ozone layer depletion, acid rains and impacts on human communities and agriculture. 7. Threats to biodiversity: Natural calamities, habitat destruction and fragmentation, over exploitation, hunting and poaching, introduction of exotic species, pollution, predator and pest control</p>
Nov-2020	III	<p>1. Concept of sustainability and sustainable development with judicious use of land, water and forest resources; afforestation. 2. Control measures for various types of pollution; use of renewable and alternate sources of energy. 3. Solid waste management: Control measures of urban and industrial waste. 4. Conservation of biodiversity: In-situ and ex-situ conservation of biodiversity. 5. Environment Laws: Environment Protection Act; Act; Wildlife Protection Act; Forest Conservation Act. 6. International agreements: Montreal and Kyoto protocols; Environmental movements: Bishnois of Rajasthan, Chipko, Silent valley.</p>

**A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYURU**

**DEPARTMENT OF MATHEMATICS**

**SEMESTER – I**

**2020-2021 CURRICULAR PLANS**

Subject Code: **MAT101C**

Title: **Differential Equations**

Month	Unit No.	Topic to be covered
Jan - 2021	III	Bridge Course and basic definitions of D.E
Feb-2021	III	Higher order linear differential equations - I
Mar-2021	IV	Higher order linear differential equations - II
April-2021	V	Higher order linear differential equations – III
	I	D.E of First order and First degree
May - 2021	II	Orthogonal Trajectories, D.E of First order and but not of First degree

**SEMESTER – II**

**CURRICULAR PLAN**

Subject Code: **MAT 201C**

Title: **SOLID GEOMETRY**

Month	Unit No.	Topic to be covered
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June -'21	I	The Planes
July-'21	II	The Lines
Aug-'21	II III	The Lines The Sphere
Sep-'21	III IV	The Sphere The Cone - I
Oct – '21	V	The Cone - II

**SEMESTER – III**

**2020-2021 CURRICULAR PLAN**

Subject Code: **MAT 301C**

Title: **Abstract Algebra and Real Analysis - I**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Nov-2020	I	The Groups
Dec-2020	II	The Sub Groups and Cosets and Lagrange's theorem
Jan-'21	III	Normal Sub Groups
Feb-'21	IV	Real Numbers, Sequences and Series
Mar-'21	V	Infinite Series

**SEMESTER – IV**

**2020-2021 CURRICULAR PLAN**

Subject Code: **MAT401C**

Title : **Abstract Algebra and Real Analysis - II**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
May – '21	I	Homeomorphisms and Isomorphisms
June -'21	II	Permutations Groups and Cyclic Groups
July-'21	III IV	Limits and Continuity Differentiation and Mean Value theorems
Aug-'21	V	Riemann Integration

**SEMESTER – IV**

**2020-2021 CURRICULAR PLAN**

Subject Code: **ANS402C**

Title : **Analytical Skills**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
May – '21	I	Test of Reasoning - I
June -'21	II	Test of Reasoning - II
July-'21	III IV	Arithmetic Ability Quantitative Aptitude
Aug-'21	V	Business Computations

**SEMESTER – V**

**2020-2021 CURRICULAR PLAN**

Subject Code: **MAT 501C**

Title: **Ring Theory and Vector Calculus**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Nov-2020	I	Vector differentiation

Dec-2020	II	Vector Integration
Jan-'21	III	Vector Integration and its applications
Feb-'21	IV	Rings - I
Mar-'21	V	Rings - II

**SEMESTER – V**

**2020-2021 CURRICULAR PLAN**

Subject Code: **MAT 502C**

Title: **Linear Algebra**

Month	Unit No.	Topic to be covered
Nov-2020	I	Matrices
Dec-2020	II	Vector Space - I
Jan-'21	III	Vector Space - II
Feb-'21	IV	Linear Transformations
Mar-'21	V	Inner Product Space

**SEMESTER – VI**

**2020-2021 CURRICULAR PLAN**

Subject Code: **MAT601GE**

Title :**Numerical Analysis**

Month	Unit No.	Topic to be covered
May – '21	I	Errors in Numerical Computations
	II	Solution of Algebraic and Transcendental equations
June -'21	III	Finite Differences and Interpolation
July-'21	IV	Central Differences
Aug-'21	V	Interpolation with unequal intervals

**SEMESTER – VI**

**2020-2021 CURRICULAR PLAN**

Subject Code: **MAT602CE**

Title :**Integral Transforms**

Month	Unit No.	Topic to be covered
May – '21	I	Application of L.T to solutions of D.E - I
June -'21	II	Application of L.T to solutions of D.E - II
July-'21	III	Application of L.T to solutions of I.E I
	IV	Fourier Transforms - I
Aug-'21	V	Fourier Transforms - II

**SEMESTER – VI**

**2020-2021 CURRICULAR PLAN**

Subject Code: **MAT603CE**

Title :**Advanced Numerical Analysis**

Month	Unit No.	Topic to be covered
May – '21	I	Curve fitting
	II	Numerical Differentiation
June -'21	III	Numerical Integration
July-'21	IV	Solutions of Simultaneous linear systems of equations
Aug-'21	V	Numerical solution of O.D.E

A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU

## DEPARTMENT OF PHYSICS

SEMESTER – I

2020-2021 CURRICULAR PLAN

Subject Code : PHY 101C

Title: **Mechanics, waves & oscillations**

Month	Unit No.	Topic to be covered
Dec-2020	I	<p><b>1. Mechanics of Particles</b> Review of Newton's Laws of Motion, Motion of variable mass system, Motion of a rocket, Multistage rocket, Concept of impact parameter, scattering cross-section, Rutherford scattering-concept only.</p> <p><b>2. Mechanics of Rigid bodies</b> Rigid body, rotational kinematic relations, Equation of motion for a rotating body, Angular momentum and Moment of inertia tensor, Euler equations, Precession of a spinning top, Gyroscope, Precession of atom and nucleus in magnetic field, Precession of the equinoxes</p>
Jan - 2021	II	<p><b>3. Motion in a Central Force Field</b> Central forces, definition and examples, characteristics of central forces, conservative nature of central forces, Equation of motion under a central force, Kepler's laws of planetary motion- Proofs, Kepler's third law from inverse-square law of Gravitation. Motion of satellites, Basic idea of Global Positioning System (GPS).</p>
Feb-2021	III	<p>Introduction to relativity, Frames of reference, Galilean transformations, absolute frames, Michelson-Morley experiment, Postulates of Special theory of relativity, Lorentz transformation, time dilation, length contraction, variation of mass with velocity, Einstein's mass-energy relation</p>
Mar-2021	IV	<p><b>5. Undamped, Damped and Forced oscillations:</b> Simple harmonic oscillator and solution of the differential equation, Damped harmonic oscillator, Forced harmonic oscillator – Their differential equations and solutions, Resonance, Logarithmic decrement, Relaxation time and Quality factor.</p> <p><b>6. Coupled oscillations:</b> Coupled oscillators-Introduction, Two coupled oscillators, N-coupled oscillators and wave equation.</p>
		<p><b>7. Vibrating Strings:</b> Transverse wave propagation along a stretched string, General solution of wave equation and its significance, Modes of vibration of stretched string clamped at ends, Overtones and Harmonics, Melde's strings.</p>

April-21	V	<b>8. Ultrasonics:</b> Ultrasonics, General Properties of ultrasonic waves, Production of ultrasonics by piezoelectric and magnetostriction methods, Detection of ultrasonics, Applications of ultrasonic waves, Ultrasonic interferometer.
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## SEMESTER – II

### CURRICULAR PLAN

Subject Code : **PHY-201C**

Title: **WAVE OPTICS**

Month	Unit No.	Topic to be covered
June -'21	I	<b>1. Aberrations:</b> Introduction – monochromatic aberrations, spherical aberration, methods of minimizing spherical aberration, coma, astigmatism and curvature of field, distortion. Chromatic aberration-the achromatic doublet. Achromatism for two lenses ( i )in contact and (ii) separated by a distance.
	II	<b>2. Interference : Division of wavefront:</b> Principle of superposition-coherence-conditions for interference of light..Fresnel's biprism-determination of wavelength of light. Determination of thickness of a transparent material using biprism –Determination of the thickness of a thin sheet of transparent material. Change of phase on reflection – Stoke's Law.
July-'21	III	<b>3. Division of Amplitude:</b> Oblique incidence of a plane wave on a thin film due to reflected and transmitted light (cosine law) –colors of thin films-Non reflecting films-interference by a plane parallel film illuminated by a point source- Interference by a film with two non-parallel reflecting surfaces (Wedge shaped film). Determination of diameter of wire- Newton's rings in reflected light-Determination of wavelength of monochromatic light. Michelson interferometer- Determination of wavelength of monochromatic light.
Aug-'21	IV	<b>4. Diffraction:</b> Introduction,distinction between Fresnel and Fraunhofer diffraction, Fraunhofer diffraction –Diffraction due to single slit and circular aperture-Limit of resolution-Fraunhofer diffraction due to double slit-Fraunhofer diffraction pattern with N slits (diffraction grating).Resolving power of grating-Determination of wavelength of light in normal and oblique incidence methods using diffraction grating.Fresnel's half period zones-area of the half period zones-zone plate-comparison of zone plate with convex lens-difference between interference and diffraction.
		<b>5. Polarisation :</b>  Polarized light: methods of polarization polarization by reflection, refraction, double refraction, scattering of light-

Sep-'21	V	<p>Brewster's law-Mauls law-Nicol prism polarizer and analyzer-Quarter wave plate, Half wave plate-optical activity, analysis of light by Laurent's half shade polarimeter-Babinet's compensator.</p> <p><b>6. Lasers and Holography:</b></p> <p>Lasers: introduction,spontaneous emission, stimulated emission. Population Inversion, Laser principle-Einstein coefficients-Types of lasers-He-Ne laser, Ruby laser- Applications of lasers.</p> <p>Holography: Basic principle of holography-Gabor hologram and its limitations, Applications of holography</p>
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## SEMESTER – III

### CURRICULAR PLAN

Subject Code: **PHY-301C**

Title: **WAVE OPTICS**

Month	Unit No.	Topic to be covered
NOV-20	I	<p><b>1. Aberrations:</b> Introduction – monochromatic aberrations, spherical aberration, methods of minimizing spherical aberration, coma, astigmatism and curvature of field, distortion. Chromatic aberration-the achromatic doublet. Achromatism for two lenses ( i )in contact and (ii) separated by a distance.</p>
	II	<p><b>2. Interference : Division of wavefront:</b> Principle of superposition-coherence-conditions for interference of light..Fresnel's biprism-determination of wavelength of light. Determination of thickness of a transparent material using biprism –Determination of the thickness of a thin sheet of transparent material. Change of phase on reflection – Stoke's Law.</p>
DEC-20	III	<p><b>3. Division of Amplitude:</b> Oblique incidence of a plane wave on a thin film due to reflected and transmitted light (cosine law) –colors of thin films-Non reflecting films-interference by a plane parallel film illuminated by a point source- Interference by a film with two non-parallel reflecting surfaces (Wedge shaped film). Determination of diameter of wire- Newton's rings in reflected light-Determination of wavelength of monochromatic light. Michelson interferometer- Determination of wavelength of monochromatic light.</p>
JAN-'21	IV	<p><b>4. Diffraction:</b> Introduction,distinction between Fresnel and Fraunhofer diffraction, Fraunhofer diffraction –Diffraction due to single slit and circular aperture-Limit of resolution-Fraunhofer diffraction due to double slit-Fraunhofer diffraction pattern with N slits (diffraction grating).Resolving power of grating-</p>

		Determination of wavelength of light in normal and oblique incidence methods using diffraction grating. Fresnel's half period zones-area of the half period zones-zone plate-comparison of zone plate with convex lens-difference between interference and diffraction.
FEB-'21	V	<p><b>5. Polarisation :</b></p> <p>Polarized light: methods of polarization polarization by reflection, refraction, double refraction, scattering of light-Brewster's law-Mauls law-Nicol prism polarizer and analyzer-Quarter wave plate, Half wave plate-optical activity, analysis of light by Laurent's half shade polarimeter-Babinet's compensator.</p> <p><b>6. Lasers and Holography:</b></p> <p>Lasers: introduction,spontaneous emission, stimulated emission. Population Inversion, Laser principle-Einstein coefficients-Types of lasers-He-Ne laser, Ruby laser- Applications of lasers.</p> <p>Holography: Basic principle of holography-Gabor hologram and its limitations, Applications of holography</p>
MAR-21	V	

## SEMESTER – IV

### 2020-2021 CURRICULAR PLAN

Subject Code: **PHY-401C**

Title: **Thermodynamics & Radiation physics**

Month	Unit No.	Topic to be covered
Apr-2021	I	<p><b>1. Kinetic theory of gases</b></p> <p>Introduction –Deduction of Maxwell's law of distribution of molecular speeds, Transport phenomena-Viscosity of gases-thermal conductivity-diffusion of gases.</p>
May-2021	II	<p><b>2. Thermodynamics</b></p> <p>Introduction- Isothermal and adiabatic process- Reversible and irreversible processes-Carnot's engine and its efficiency-Carnot's theorem-Second law of thermodynamics. Kelvin's and Clausius statements-Entropy, physical significance – Change in entropy in reversible and irreversible processes-Entropy and disorder-Entropy of Universe-Temperature-Entropy (T-S) diagram-Change of entropy of a perfect gas-change of entropy when ice changes into steam.</p>
Jun-2021	III	<p><b>3. Thermodynamic potentials and Maxwell's equations</b></p> <p>Thermodynamic potentials-Derivation of Maxwell's thermodynamic relations-Clausius-Clayperon's equation-Derivation for ratio of specific heats-Derivation for difference of two specific heats for perfect gas. Joule Kelvin effect-expression for Joule Kelvin coefficient for perfect.</p>

Jul-2021	IV	<p><b>4. Low temperature Physics</b></p> <p>Introduction-Joule Kelvin effect-liquefaction of gas using porous plug experiment Joule expansion-Distinction between adiabatic and Joule Thomson expansion-Expression for Joule Thomson cooling-Liquefaction of helium, Kapitza's method-Adiabatic demagnetization, Production of low temperatures - applications of substances at low-temperature-effects of chloro and fluoro carbons on ozone layer.</p>
Jul-2021	V	<p><b>5. Quantum theory of radiation</b></p> <p>Blackbody-Ferry's black body-distribution of energy in the spectrum of black body-Wein's displacement law, Wein's law, Rayleigh-Jean's law-Quantum theory of radiation-Planck's law-Measurement of radiation-Types of pyrometers –Angstrom pyroheliometer-determination of solar constant, Temperature of Sun.</p>

## SEMESTER – V

### 2020-2021 CURRICULAR PLAN

Subject Code : **PHY 501C**

Title : **Electricity, Magnetism and Electronics**

Dec-2020	I	<p><b>1.Electrostatics</b> Gauss's law Statement and its proof-Electric field intensity due to (1) Uniformly charged sphere and (2) an infinite conducting sheet of charge. Electric potential- Equipotential surface – potential due to i) a point charge ii) charged spherical shell .</p> <p><b>2.Dielectrics</b> Electric dipole moment and molecular polarizability- Electric displacement D, electric polarization P – relation between D, E, and P- Dielectric constant, susceptibility .</p>
Jan - 2021	II	<p><b>3. Electric and magnetic field</b> Biot – Savart's law and calculation of B due to long straight wire, a circular current loop and solenoid. Hall effect-determination of Hall coefficient and applications.</p> <p><b>4.Electromagnetic induction</b> Faraday's law – Lenz's law self and mutual inductance, coefficient of coupling, calculation of self inductance of a long solenoid, energy stored in magnetic field. Transformer- energy losses and efficiency.</p>
Feb-2021	III	<p><b>5.Alternating current and electro magnetic waves</b> Alternating current –Relation between current and voltage in LR and CR circuits, vector diagrams, LCR series and parallel resonant circuit , Q- factor, power in AC circuits.</p> <p><b>6.Maxwell's equations</b></p>



		Idea of displacement current- Maxwell's equations (integral and differential forms ) (no derivation) Maxwell's wave equation(with derivation), Transverse nature of electromagnetic wave. Pointing Vector (statement and proof) production of electromagnetic wave Hertz experiment.
Mar-2021	IV	<b>7.Basic electronics:</b> PN junction diode Zener diode ,I-V characteristics, PNP and NPN Transistors, CB,CE and CC configuration Relation between $\alpha$ $\beta$ and $\Gamma$ transistors (CE) characteristics,Transistor as an amplifier.
April-21	V	<b>Digital electronics:</b> Number systems-conversion of binary to decimal system and vice versa. Binary addition and subtraction (1's and 2's complement methods) laws of Boolean algebra-De Morgan's laws- statement and proof basic logic gates, NAND and NOR as universal gates Half adder and FULL adder.

## SEMESTER – V

### 2020-2021 CURRICULAR PLAN

**Subject Code: PHY- 502C**

**Title : MODERN PHYSICS**

Dec-2020	I	<b>1. Atomic and molecular physics</b> Introduction – Drawbacks of Bohr's atomic model – Sommerfeld's elliptical orbits- relativistic correction (no derivation). Vector atom model and Stern & Gerlach experiment - quantum numbers associated with it. L-S and j-j coupling schemes. Zeeman Effect and its experimental study. Raman effect, stokes and Anti stokes lines . Quantum theory of Raman effect. Experimental arrangement – Applications of Raman effect.
Jan - 2021	II	<b>2. Matter waves &amp; Uncertainty Principle</b> Matter waves, de Broglie's hypothesis – wavelength of matter waves, Properties of matter waves – Davisson and Germer experiment, uses of electron diffraction-Phase velocity and Group velocity (definitions only)- relation between phase velocity and Group velocity–Heisenberg's uncertainty principle for position and momentum (x and p) & energy and time (E and t). Experiment verification.
Feb-2021	III	<b>3.Quantum (wave) mechanics</b> Basic postulates of quantum mechanics – Schrodinger time independent and time dependent wave equation – derivations. Physical interpretation of wave function. Applications of Schrodinger wave equation to particle in one dimensional infinite box. Harmonic oscillator.
		<b>4.General properties of Nuclei</b> Basic ideas of nucleus – size,mass,charge density(matter energy),

Mar-2021	IV	binding energy, angular momentum, parity, magnetic moment, electric quadrupole moments. Liquid drop model and shell model (qualitative aspects only)- Magic numbers. <b>5. Radioactivity decay</b> Alpha decay : basis of $\alpha$ – decay processes. Range of $\alpha$ -particles , Geiger’s Law, Geiger- Nuttal law. $\beta$ – decay, $\beta$ ray continuous and discrete spectrum, neutrino hypothesis.
April-21	V	<b>6. Crystal structure</b> Amorphous and crystalline materials, unit cell, Miller indices, reciprocal lattice, types of lattices, diffraction of X- rays by crystals, Bragg’s law, experimental techniques, Laue’s method and powder diffraction method. <b>7. Superconductivity:</b> Introduction – experimental facts, critical temperature – critical field – Meissner effect – isotope effect – Type I and Type II superconductors – BCS theory (elementary ideas only) – applications of superconductors.

## SEMESTER – VI

### 2020-2021 CURRICULAR PLAN

Subject Code: **PHY 601 GE** Title : **ANALOG AND DIGITAL ELECTRONICS**

Apr-2021	I	<b>1. FET</b> Construction ,Working ,Characteristics and uses; MOSEFT-enhancement MOSEFT, Depletion MOSEFT, Construction and Working, drain Characteristics of MOSEFT, applications of MOSEFT. <b>2. Photo electric devices:</b> structure and operation, Characteristics and applications of LED and LCD.
May-2021	II	<b>3. Operational amplifier:</b> Characteristics of ideal and practical OP-amp (IC-741), Basic differential OP-amp supply voltage, IC identification, internal blocks of OP-amp, its parameter off set voltages and currents, CMRR, slew rate, Concept of Virtual ground.
Jun-2021	III	<b>4. Applications of OP-amp:</b> OP-amp as voltage amplifier, inverting amplifier, Non- inverting amplifier, Voltage follower, summing amplifier, difference amplifier, comparator, Integrator, Differentiator.
Jul-2021	IV	<b>5. Data processing circuits:</b> Multiplexers, De –Multiplexers, encoders, decoders, Characteristics <b>6. For Digital IC’s</b> –RTL, DTL, TTL, CMOS (NAND&NOR Gates
Jul-2021	V	<b>7. Sequential digital circuits:</b> Flip-flops, RS, clocked SR, JK, D, T, Master-Slave Flip-flops . <b>8. Counters:</b> Asynchronous counters-modulo 4 counter-modulo 16 ripple counter, Decade counter, Synchronous counter.

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## SEMESTER – VI

### 2020-2021 CURRICULAR PLAN

Subject Code: **PHY 602 CE**

Title : **INTRODUCTION TO MICROPROCESSOR AND MICROCONTROLLER**

Apr-2021	I	<b>MICROPROCESSOR:</b> General architecture of microprocessor, architecture of 8085 microprocessor, 8085 pin diagram, Concept of data bus, address bus, and control bus, 8085 programming instruction classification.
May-2021	II	<b>8085 Interfacing Memory</b> Introduction-Memory structure and its requirements-basic concepts in memory interfacing. Address Decoding-Interfacing circuit. Port-mapped I/O or Direct I/O interface (8-bit Addressing)-Memory Indirect I/O mapped Interfaces (16-bit Addressing)-Port mapped versus Memory mapped I/O. I/O Device Interfacing.
Jun-2021	III	<b>8085 Microprocessor Applications</b> Introduction-Programmed data transfer scheme. Direct Memory Access (DMA) –Types. 8255A PPI-Block diagram. 8259A PIC-Pin diagram and functional description. 8257 Programmable DMA controller-Block diagram and Pin description.
Jul-2021	IV	<b>8051 Architecture-I:</b> Types of microcontrollers- microcontroller architecture, CISC, RISC, operation of microcontroller, basic building blocks of microcontroller, comparison of microcontroller and microprocessor- block diagram of 8051-I/o pins and ports.  Microcontroller Resources.
Jul-2021	V	<b>8051 Architecture-II:</b> 8051 Flag bits and PSW register and DPTR register- Memory Organization- Special function registers- PSW register-Counters and Timers-Serial I/O-8051 Microcontroller Interrupts.

## SEMESTER – VI

### 2020-2021 CURRICULAR PLAN

Subject Code: **PHY 603C**

Title:**Computational Methods and Programming**

Apr-2021	I	<ol style="list-style-type: none"> <li>Fundamentals of C language: C character set – Identifiers and keywords – structure of c program. Constants-variables- Data types- Declarations of variables – Declaration of storage class – Defining symbolic constants – Assignment statement.</li> <li>Operators : Arithmetic operators- Relational operators – Logic operators – Assignment operators – Increment and decrement operators – Conditional operators</li> </ol>
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May-2021	II	<p>3.Expressions and I/O statements : Arithmetic expressions – precedence of arithmetic operators – Type converters in expressions – Mathematical ( Library) functions – Data input and output – The getchar and putchar functions – Scanf – Printf simple programs.</p> <p>4.Control statements: IF – ELSE statements – Switch statements – The operators – GO TO- while, DO-While, FOR statements – BREAK and CONTINUE statements.</p>
Jun-2021	III	<p>5.Arrays: One dimensional and two dimensional arrays – Initialization –Type declaration – Inputting and outputting of data for arrays – Programs of matrices addition, subtraction and multiplication.</p> <p>6.User defined functions: The form of C functions – Return values and their types – Calling a function – Category of functions. Nesting of functions. Recursion. ANSI C functions – Function declaration. Scope and life of variables in functions.</p>
Jul-2021	IV	<p>7.Linear and Non-Linear equations: Solution of Algebra and transcendental equations – Bisection, Falsi position and Newton – Rhapsom methods – Basic principles – Formulae – algorithms.</p> <p>8.Simultaneous equations: Solutions of simultaneous linear equations – Guass elimination and Guass seidel iterative methods – Basic principles – Formulae- Algorithms</p>
Jul-2021	V	<p>Interpolations : Concept of linear interpolation – Finite differences –</p> <p>Newton’s and Lagrange’s interpolation formulae – principles and Algorithms.</p> <p>9.Numerical differentiation and integration : Numerical differentiation –</p> <p>algorithm for evaluation of first order derivatives using formulae based on Taylor’s series – Numerical integration – Trapezodal and Simpson’s 1/3 rule – Algorithms.</p>

## SEMESTER – VI

### 2020-2021 CURRICULAR PLAN

Subject Code: **PHY 604 CE**

Title: : **Electronic Instrumentation**

Apr-2021	I	<ol style="list-style-type: none"> <li>1. Basic of measurements: Instruments accuracy, precision, sensitivity- errors in measurements- Basic meter movement-PMMC (Permanent Magnetic Moving Coil).</li> <li>2. Measurement of dc current: DC ammeter- multi range ammeters-the ARYTON Shunt or universal Shunt.</li> <li>3. Measurement of dc voltage: DC Voltmeter – Multi Range Voltmeter- Voltmeter sensitivity.</li> </ol>
May-2021	II	<p><b>4.Analog Multimeter:</b> Multimeter - as dc ammeter-as dc voltmeter-as ac voltmeter- as ohm meter-Multimeter operating instructions.</p> <p>5.Digital instruments: Principle and working of digital instruments, characteristics of a digital meter, working principle of digital voltmeter.</p>

Jun-2021	III	6.CRO: Block diagram of basic CRO, construction of CRT, electron gun, electrostatic focusing and acceleration (only explanation), time base operation, synchronization, front panel controls, specifications of CRO and their significance. 7.Applications CRO: Measurement of voltage- dc and ac, frequency, time period. Special features of dual trace CRO. Digital storage oscilloscope: block diagram and principle of working.
Jul-2021	IV	8.Diode as Rectifier – Half wave rectifier, Full wave rectifier – construction, working and efficiency. (no derivation) 9.Feedback in Electronic circuits – Positive and Negative feedback, expressions for gains, advantages of negative feedback, Oscillators, Barkhausen criteria, RC phase shift oscillator (no derivation)
Jul-2021	V	10.Signal Generators: Block diagram, working and specifications of low frequency signal generators, pulse generator, function generator . 11.Bridges: Measurement of resistance by Wheat stone's Bridge- Sensitivity of Wheat stone's Bridge- Applications of Wheat stone's Bridge-Limitations of Wheat stone's Bridge.

**A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYURU**  
**DEPARTMENT OF CHEMISTRY**  
**SEMESTER – I**  
**2020-2021 CURRICULAR PLAN**

Subject Code:**CHE101C**      Title: **Inorganic and Physical chemistry**

Month	Unit No.	Topic to be covered
Dec-2020	1	Chemistry of P block elements
Jan - 2021	4	Liquid crystals
Feb-2021	3	Solid state,Gaseous state
Mar-2021	2	Transition elements,Inner transition elements
April-21	5	Colligative properties

**SEMESTER – II**

**CURRICULAR PLAN**

Subject Code:**CHE 201C**      Title: **Organic and General chemistry**

Month	Unit No.	Topic to be covered
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June -'21	4	Chemical bonding & Surface chemistry
July-'21	5	Stereo chemistry of carbon compounds
Aug-'21	3&1	Benzene and its reactivity Saturated hydro carbons Cyclo alkanes
Sep-'21	2	Unsaturated hydro carbons

**SEMESTER – III**

**2020-2021 CURRICULAR PLAN**

Subject Code: **CHE 301C**

Title :Inorganic and organic chemistry

Month	Unit No.	Topic to be covered
Nov-2020	5	Carboxylic acids and their derivatives Active methylene compounds
Dec-2020	1	Chemistry of d block elements
Jan-'21	2	Theories of bonding in metals
Feb-'21	3	Halogen compounds
Mar-'21	4	Carbonyl compounds

**SEMESTER – IV**

**2020-2021 CURRICULAR PLAN**

Subject Code: **CHE 401C**

Title :Spectroscopy and Physical chemistry

Month	Unit No.	Topic to be covered
June -'21	1	Spectrophotometry Electronic spectroscopy
July-'21	2	Infrared spectroscopy NMRspectroscopy

Aug-'21	4&5	Electro chemistry-1 Electro chemistry-2 Phase rule
Sep-'21	3	Dilute solutions

**SEMESTER – V(501)**

**2020-21 CURRICULAR PLAN**

Subject Code: CHE-501

Title :Inorganic, Organic & Physical Chemistry

Month	Unit No.	Topic to be covered
June	1	Co ordination chemistry
July	2	Magnetic properties of metal complexes
August	3	Nitro hydro carbons
September	4	Nitrogen compounds
October	5	thermodynamics

**SEMESTER – V(502)**

**2020-21 CURRICULAR PLAN**

Subject Code: CHE-502

Title :Inorganic, Organic & Physical Chemistry

Month	Unit No.	Topic to be covered
June	3	Carbohydrates
July	4	Amino acids and Proteins
August	2	Hetero cyclic compounds
September	1	Reactivity of Metal complexes
October	5	Chemical kinetics

**SEMESTER – VI(GE)**

**2020-21 CURRICULAR PLAN**

Subject Code: CHE-601GE

Title :Analytical methods in Chemistry

Month	Unit No.	Topic to be covered
November	4	Ion exchange,paper chromatography
December	5	TLC,Column chromatography
January	3	Separation techniques in chemical analysis
February	2	Treatment of Analytical data

March	1	Quantitative analysis
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**SEMESTER – VI**

**2020-21 CURRICULAR PLAN**

Subject Code: **CHE-602CE** Title : **Organic spectroscopic techniques**

Month	Unit No.	Topic to be covered
November	1	NMR spectroscopy
December	2	NMR spectroscopy
January	3	Electronic spectra of poly atomic molecules
February	4	UV& Visible spectroscopy
March	5	Electron spin resonance spectroscopy

**SEMESTER – VI(CHE-603CE)**

**2020-21 CURRICULAR PLAN**

Subject Code: CHE-603CE Title :Advanced organic reactions

Month	Unit No.	Topic to be covered
November	1	Organic photo chemistry
December	2	Organic photo chemistry
January	3	Protecting groups and organic reactions
February	4	Synthetic reactions
March	5	New synthetic reactions

**SEMESTER – VI**

**2020-21 CURRICULAR PLAN**

Subject Code: **CHE-604CE** Title :**Pharmaceutical and Medicinal chemistry**

Month	Unit No.	Topic to be covered
November	1	Pharmaceutical terminology
December	2	Nomenclature
January	3	Synthesis and therapeutic activity of drugs
February	4	Pharmacodynamic drugs



March	5	HIV-AIDS
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A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU

## DEPARTMENT OF BOTANY

SEMESTER – I

2020-2021 CURRICULAR PLAN

Subject Code: **BOT-101C**

Title: **Microbial diversity, Algae and Fungi.**

Month	Unit No.	Topic to be covered
Dec-2020	I	<b>Origin and Evolution of Life, Microbial diversity</b> Origin of life - theories introduction: Lamarckism, Darwinism and Neo Darwinism. Geological time scale Microbial diversity: Mycoplasma - Chlamydia – Archaeobacteria – Actinomycetes.
Jan - 2021	II	<b>VIRUSES AND BACTERIA</b> Viruses: General account of Viruses, structure, replication and transmission of Plant Diseases caused by Viruses. Bacteria: Structure, nutrition, reproduction and economic importance. Outlines of Plant diseases of important crop plants caused by Bacteria (Citrus canker, leaf blight of rice, Angular leaf spot of Cotton) and their control.
Feb-2021	III	<b>CYANOBACTERIA AND LICHENS</b> Cyanobacteria: General account of cell structure, thallus organization and their uses as Biofertilizers. Structure, reproduction and life history of Nostoc and Scytonema. Lichens – Morphology – Anatomy – Reproduction – Economic importance.
Mar-2021	IV	<b>Algae</b> General account, Fritsch classification of Algae and economic importance. Structure, reproduction, life history of Oedogonium, Vaucheria and Ectocarpus.
April-21	V	<b>FUNGI</b> General characters, classification (Alexopolous) and economic importance. Structure, reproduction and life history of Albugo, Penicillium, Puccinia. General account of plant diseases caused by Fungi (Late blight of potato, Red rot of Sugarcane and Paddy Blast) and their control.

SEMESTER – II

CURRICULAR PLAN

Subject Code: **BOT- 201C**

Title: **Basics of vascular plants and phytogeography**

Month	Unit No.	Topic to be covered
June -'21	I	<b>Pteridophytes</b> General characteristics of Pteridophyta; classification of Smith (1955)uptodivisions.

		Occurrence, morphology, anatomy, reproduction (developmental details are not needed) and life history of (a) <i>Lycopodium</i> (Lycopsida) and (b) <i>Marsilea</i> (Filicopsida). Stelar evolution in Pteridophytes Heterospory and seed habit.
July-'21	II	<b>Gymnosperms</b> General characteristics of Gymnosperms; Sporne classification upto classes. Occurrence, morphology, anatomy, reproduction (developmental details are not needed) and life history of (a) <i>Cycas</i> (Cycadopsida) and (b) Gnetum (Gnetopsida) Outlines of geological time scale. A brief account on Cycadeoidea
Aug-'21	IV	<b>Basic aspects of Taxonomy</b> Aim and scope of taxonomy; Species concept: Taxonomic hierarchy, species, genus and family. Plant nomenclature: Binomial system, ICBN- rules for nomenclature. Herbarium and its techniques, BSI herbarium and Kew herbarium; concept of digital herbaria. Bentham and Hooker system of classification
Sep-'21	V	<b>Systematic Taxonomy</b> Systematic description and economic importance of the following families: (a) Asteraceae (b) Asclepiadaceae (c) Amaranthaceae (d) Euphorbiaceae (e) Arecaceae and (f) Poaceae (g) Annonaceae (h) Curcubitaceae (i) Orchidaceae 4.2 Outlines of Angiosperm Phylogeny Group (APG IV).
Sep-'21	V	<b>Phytogeography</b> Principles of Phytogeography, Distribution (wides, endemic, discontinuous species) Endemism – types and causes. Phytogeographic regions of World. Pytogeographic regions of India. Vegetation types in Andhra Pradesh

### SEMESTER – III

#### 2020-2021 CURRICULAR PLAN

Subject Code: **BOT- 301C**

Title: **Plant Taxonomy and plant physiology**

Month	Unit No.	Topic to be covered
Nov-2020		<b>Plant physiology :</b> 1. Importance of water to plant life, physical properties of water,

	IV	<p>2. Diffusion, Imbibition and osmosis; water potential, osmotic potential and pressure potential.</p> <p>3. Absorption, transport of water, ascent of sap.</p> <p>4. Transpiration – types, stomata structure, movements and significance.</p>
Dec-2020	V	<p><b>Mineral nutrition, Fertilizers and Enzymes</b></p> <p>1. Mineral Nutrition: Essential macro and micro mineral nutrients and their role, mineral uptake (active and passive), deficiency symptoms.</p> <p>2. Nitrogen cycle- biological nitrogen fixation.</p> <p>3. Enzymes: Nomenclature, characteristics, mechanism and regulation of enzyme action, enzyme kinetics, factors regulating enzyme action.</p>
Jan-‘21	I	<p><b>Introduction to Plant Taxonomy</b></p> <p>1. Fundamental components of taxonomy (identification, nomenclature, classification types and phylogeny)</p> <p>2. Salient features of Bentham &amp; Hooker classification.</p> <p>3. Role of chemotaxonomy, Cytotaxonomy and Embryology in relation to Taxonomy.</p> <p>4. APG IV System of Classification – 2016.</p>
Feb-‘21	II	<p><b>Systematic Taxonomy</b></p> <p>1. Nomenclature and Taxonomic resources: An introduction to International Code of Botanical Nomenclature; Principles, Rules and Recommendations.</p> <p>2. Systematic study and economic importance of plants belonging to the following families: Annonaceae, Capparidaceae, Rutaceae, Cucurbitaceae and Apiaceae</p>
Mar-‘21	III	<p><b>Systematic Taxonomy</b></p> <p>1. Systematic study and economic importance of plants belonging to the following families: Asteraceae, Asclepiadaceae, Lamiaceae, Euphorbiaceae, Orchidaceae and Poaceae.</p>

#### SEMESTER – IV

#### 2020-2021 CURRICULAR PLANS

Subject Code: **BOT - 401C**

Title: – **Plant Embryology and Plant Physiology**

Month	Unit No.	Topic to be covered
June -‘21	I	<p><b>EMBRYOLOGY</b></p> <p>Introduction: History and Importance of Embryology.</p> <p>Anther structure, Microsporogenesis and development of male</p>

		gametophyte. Ovule structure and types; Megasporogenesis; Monosporic; Bisporic and Tetrasporic types of female gametophyte / embryosac development. Pollination -Types, Fertilization.
July-'21	II	<b>EMBRYOLOGY AND PALYNOLOGY</b> Endosperm Development and types. Embryo - development and types. Polyembryony and Apomixis - an outline. Palynology: Principles and applications.
Aug-'21	III	<b>PLANT METABOLISM- I</b> Photosynthesis: Electromagnetic spectrum, absorption and action spectra; Red drop and Emerson enhancement effect, concept of Z scheme in photosystems, Photosynthetic pigments, mechanism of photosynthetic electron transport and evolution of oxygen, photo phosphorylation, carbon assimilation pathways: C <sub>3</sub> , C <sub>4</sub> & CAM and Photorespiration. Translocation of organic substances: Mechanism of phloem transport, source-sink relationships
Sep-'21	IV	<b>PLANT METABOLISM- II</b> Respiration: Aerobic and Anaerobic, Glycolysis, Krebs cycle, electron transport system, mechanism of oxidative phosphorylation, pentose phosphate pathway. Lipid Metabolism: Structure and functions of lipids, conversion of lipids to carbohydrates, Beta-oxidation.
Aug-'21	V	<b>GROWTH AND DEVELOPMENT</b> Growth and development: Definition, phases and kinetics of growth, Physiological effects of phytohormones - auxins, gibberellins, cytokinins, ABA and ethylene Physiology of flowering and photoperiodism, role of phytochrome in flowering. Stress Physiology: Concept and plant responses to water, salt and temperature stresses.

### SEMESTER – V

### 2020-21 CURRICULAR PLAN

Subject Code: BOT- 501C

Title: **Cell Biology, Biology, Genetics and Plant Breeding.**

Month	Unit No.	Topic to be covered
Nov-2020	I	<b>Cell Biology</b> Cell, Ultra Structure and functions of cell wall. Molecular Organization of cell membranes.

	III	Chromosomes; morphology, organization of DNA in a chromosome (Nucleosome model) Euchromatin and Heterochromatin. <b>Mendelian Inheritance</b> Mendelian Inheritance (Mono – Di-hybrid Crosses), Back cross and Textcross. Linkage: concept, complete and In-complete Linkage, Coupling and Repulsion; Linkage Maps Based on Two and Three Point cross. Crossing over concept and significance.
Dec-2020	II	<b>Genetic Material</b> DNA as the Genetic Material: Griffith's and Avery's Transformation Experiment. Hershey - Chase Bacteriophage experiment. DNA Structure (Watson & crick model) and replication of DNA (SemiConservative). Types of RNA (mRNA, tRNA, rRNA), their structure and function.
Jan-'21	IV	<b>Gene Expression</b> Organization of gene, Transcription and Translation. Mechanism and regulation of Gene Expression in Prokaryotes (Lacoperon). Mutations: Chromosomal Aberrations, Gene Mutations and Transposable Elements
Feb-'21	V	<b>Plant Breeding</b> Introduction and objectives of Plant Breeding. Methods of Crop Improvement: Procedure, Advantages and limitations of Introduction, Selection and Hybridization (Out lines only).
Mar-'21		Revision

### SEMESTER – V

### 2020-21 CURRICULAR PLAN

Subject Code: BOT- 502C

Title: **Plant Ecology and Phytogeography.**

Month	Unit No.	Topic to be covered
Nov-2020	I	Ecology: Definition, branches and significance of ecology. Claimatic factors: Light, Temperature. Edaphic factor: Origin, formation, composition and soil profile.

		Biotic factor, Ecological adaptations of Plants.
Dec-2020	II	<b>Ecosystem Ecology</b> Ecosystem: concept and components, energy flow, food chain, food web, Ecological Pyramids. Productivity of ecosystem-Primary, Secondary and Net productivity. Biogeochemical cycles- Carbon, Nitrogen and Phosphorous.
Jan-'21	III	<b>Population &amp; Community ecology.</b> Population-defination, characteristics and importance (Density,Natality, Mortality, Growth Curves) outlines-ecotypes. Plant communities- characters of a community, outlines – Frequency,density, cover, life forms, Biological Spectrum. Ecological Succession: Hydrosere and Xerosere
Feb-'21	IV	<b>Phytogeography</b> Principles of Phytogeography, Distribution (Wides, Endemic, Discontinuous species). Phytogeographic regions of India. Endemism – types and Causes.
Mar-'21	V	<b>Plant Biodiversity and its Importance</b> Definition, Levels of Biodiversity – genetic, species and ecosystem. Biodiversity and Hot-spots of India: North Eastern, Himalayas and Western Ghats. Loss of Biodiversity-causes and Conservation (In-situ and Ex-Situ Methods).  Revision

## SEMESTER – VI

### CURRICULAR PLAN

Subject Code: **BOT- 601C**

Title: **Plant tissue culture and its Biotechnological Applications**

Month	Unit No.	Topic to be covered
Apr-'21	I	<b>PLANT TISSUE CULTURE – 1</b>

		<p>History of plant tissue culture research - basic principles of plant tissue callus culture, meristems culture, organ culture, Totipotency of cells.</p> <p>Sterilization procedures, culture media composition and preparations of explants. Murashige and Skoog's (MS medium), Cell and protoplast culture.</p> <p>Somatic Hybrids and Cybrids (out lines), Artificial Seeds, Somaclonal variations. Applications of Tissue culture (Brief account).</p>
May -'21	II	<p><b>Plant Tissue culture -2</b></p> <p>Endosperm culture – Embryo culture -culture requirements – applications, embryo rescue technique. Cryopreservation; Germ plasm conservation.</p>
Jun-'21	III	<p><b>Recombinant DNA technology</b></p> <p>r- DNA technology: Steps in r-DNA technology and tools.</p> <p>Cloning Vectors: Prokaryotic (pBR322, Ti plasmid and Lambda phage, Eukaryotic Vectors (YAC and briefly PAC).</p> <p>Gene cloning (Bacterial Transformation and selection of recombinant clones, PCR Mediated gene cloning)</p>
Jul –'21	IV	<p><b>Methods of gene transfer</b></p> <p>Methods of gene transfer- Agrobacterium-mediated, direct gene transfer By Electroporation, Microinjection, Micro projectile bombardment. Selection of transgenics– selectable marker and reporter genes (Luciferase, GUS, GFP).</p>
Jul -'21	V	<p><b>Applications of Biotechnology</b></p> <p>Applications of Plant Genetic Engineering – crop improvement, herbicide resistance, Insect resistance, virus resistance. Genetic modification – transgenic plants for pest resistant (Bt-cotton); herbicide resistance (Round Up Ready soybean); improved agronomic traits flavar savar tomato, Golden rice.</p>

## SEMESTER – VI

### CURRICULAR PLAN

Subject Code: **BOT- 602 C**

Title: **Plant Diversity and Human Welfare.**

Month	Unit No.	Topic to be covered
		<b>Plant diversity and its scope:</b>

Apr-'21	I	Genetic diversity, Species diversity, Plant diversity at the ecosystem level, Agro biodiversity and Vavilov Crop centers. Values and uses of biodiversity: Ethical and aesthetic values, Uses of plants.
May -'21	II	<b>Loss of biodiversity:</b> Loss of genetic diversity, Loss of species diversity, Loss of ecosystem diversity, Loss of agro biodiversity, projected scenario for biodiversity loss. Management of plant biodiversity: Organizations associated with biodiversity Management-Methodology for execution-IUCN, UNEP, UNESCO, WWF, NBPGR; Biodiversity legislation and conservations, Biodiversity information management and Communication.
Jun-'21	III	<b>Contemporary practices in resource management:</b> Environmental Impact Assessment (EIA), Geographical Information System GIS, Solid and liquid waste management.
Jul -'21	IV	<b>Conservation of biodiversity</b> Conservation of genetic diversity, species diversity. Social approaches to conservation, Biodiversity awareness Programmes, Sustainable development.
Jul -'21	V	<b>Role of plants in relation to Human Welfare</b> Importance of forestry, their utilization and commercial aspects- a) Avenue trees, b) ornamental plants of India. Fruits and nuts: Important fruit crops their commercial importance. Wood, fiber and their uses.

### SEMESTER – VI

### CURRICULAR PLAN

Subject Code: **BOT- 602 C**

Title: **Ethno Botany and Medicinal Botany**

Month	Unit	Topic to be covered
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	No.	
Apr-'21	I	<b>Ethnobotany</b> Introduction, concept, scope and objectives Major and minor ethnic groups or Tribal's of India, and their lifestyles. Plants used by the tribal populations: a) Food plants, b) Intoxicants c) Beverages, d) Resins and oils and miscellaneous uses.
May -'21	II	<b>Role of ethnobotany in modern Medicine</b> Role of Ethnobotany in modern medicine with special example; Rauvolfiaserpentina, Artemisia annua, Withaniasomnifera. Significance of the following plants in ethno botanical practices (along with their habitat and morphology) a)Azadirachta indica, b)Vitexnegundo,c)Ocimum sanctum,,d) phyllanthus niruri Medico-Ethnobotanical Sources of India.
Jun-'21	III	<b>Ethno botany as a tool to protect interests of ethnic groups</b> Sharing of wealth concept with few examples from India. Biopiracy, Intellectual Property Rights and Traditional Knowledge.
Jul -'21	IV	<b>History, Scope and Importance of Medicinal Plants, Indigenous Medicinal Sciences</b> Definition and Scope-Ayurveda: History, origin, panchamahabhutas, saptadhatu and tridosha concepts, Rasayana, plants used in ayurvedic treatments. Homeopathy: Origin of Homeopathy medicinal systems, Basis of Homeopathy, plants used in Homeopathy medicine.
Jul -'21	V	<b>Conservation of endangered and endemic medicinal plants.</b> Definition: endemic and endangered medicinal plants, Red list criteria In situ conservation: Sacred groves, National Parks Ex situ conservation: Botanical Gardens, Seed Banks

## SEMESTER – VI

### CURRICULAR PLAN

Subject Code: **BOT- 602 C**

Title: **Pharmacognosy and Phyto chemistry.**

Month	Unit No.	Topic to be covered
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Apr-'21	I	<b>Pharmacognosy</b> Definition, Importance Classification of drugs - Chemical and Pharmacological Drug evaluation methods
May - '21	II	<b>Organoleptic and microscopic studies:</b> Organoleptic and microscopic studies with reference to nature of active principles and common adulterants of a) Adhatoda vasica(leaf) b) Strychnosnuxvomica (seed), c)Rauwolfia serpentina(root) d)Zinziberofficinalis e)Catharanthusroseus
Jun-'21	III	<b>Secondary Metabolites:</b> Definition of primary and secondary metabolites and their differences, Major types - terpenes, Phenolics, alkaloids, terpenoids, steroids. A brief idea about extraction of alkaloids. Origin of secondary metabolites–detailed account of Mevalonate pathway,Shikimate pathway.
Jul –'21	IV	<b>Phytochemistry:</b> `Biosynthesis and sources of drugs: Structural type biosynthesis importance of simple Phenolic compounds, coumarins, Flavonoids. Steroids, sterols: Biosynthesis, commercial importance. Alkaloids: Different groups, biosynthesis, bioactivity. Volatile oils, aromatherapy.
Jul -'21	V	<b>Enzymes, proteins and amino acids as drugs:</b> Vaccines, toxins and toxoids, immune globulins, antiserums, Vitamins, Antibiotics – chemical nature, mode of action. Pharmacological action of plant drugs – tumor inhibitors, PAF antagonists, antioxidants, phytoestrogens and others.

**A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**  
**DEPARTMENT OF ENGLISH**  
**SEMESTER – I**  
**2020-2021 CURRICULAR PLAN**

Subject Code: **PNT -501C**

Title: **PLANT NURSERY**

Month	Unit No.	Topic to be covered
Feb-2021	I	<p><b>Introduction to plant nursery</b></p> <p>Plant nursery: Definition, importance.</p> <p>Different types of nurseries –on the basis of duration, plants produced, structure used.</p> <p>Basic facilities for a nursery; layout and components of a good nursery.</p> <p>Plant propagation structures in brief.</p> <p>Bureau of Indian Standards (BIS-2008) related to nursery</p>
Mar-2021	II	<p><b>Necessities for nursery</b></p> <p><b>Nursery beds – types and precautions to be taken during preparation.</b></p> <p>Growing media, nursery tools and implements, and containers for plant nursery, in brief.</p> <p>Seeds and other vegetative material used to raise nursery in brief.</p> <p>Outlines of vegetative propagation techniques to produce planting material.</p> <p>Sowing methods of seeds and planting material.</p>
April-21	III	<p><b>Management of nursery</b></p> <p>Seasonal activities and routine operations in a nursery.</p> <p>Nursery management – watering, weeding and nutrients; pests and diseases.</p> <p>Common possible errors in nursery activities.</p> <p>Economics of nursery development, pricing and record maintenance.</p> <p>Online nursery information and sales systems.</p>

## DEPARTMENT OF ZOOLOGY

SEMESTER – I

2020-2021 CURRICULAR PLAN

Subject Code: ZOO101C

Title: **Biology of Non – Chordates**

Month	Unit No.	Topic to be covered
Dec-2020	I	Whittaker's five kingdom concept and classification of Animal Kingdom. General Characters and classification of protozoa up to classes with suitable examples <b>Phylum - Protozoa:</b> Type study: <i>Elphidium</i>
Jan - 2021	II	Phylum Porifera General characters and classification up to classes with suitable examples Skelton in Sponges, Canal system in sponges <b>Phylum – Coelenterata</b> General characters and classification up to classes with suitable examples type study: Obelia – Morphology, Structure of polyp & Medusa Polymorphism in coelenterates Corals and coral reefs
Feb-2021	III  IV	General characters and classification up to classes with suitable examples Life cycle and pathogen city of Fasciola hepatica Parasitic Adaptations in helminthes Phylum Nematelminthes Life cycle and pathogen city of Ascarislumbricoides General characters and classification up to classes with suitable examples Evolution of Coelom and Coelomoducts Vermiculture - Scope, significance, earthworm species, processing, Vermicompost, economic importance of vermicompost
Mar-2021	IV  V	Phylum Arthropoda Vision and respiration in Arthropoda Peripatus - Structure and affinities <b>Phylum Mollusca</b> General characters and classification up to classes with suitable examples Pearl formation in Pelecypoda
April-21	V	Water vascular system in star fish Larval forms of Echinodermata Phylum Hemichordata Balanoglossus - Structure and affinities

**SEMESTER – II**

**CURRICULAR PLAN**

Subject Code: **ZOO 201C**

Title: Animal Diversity – Biology of Chordates

Month	Unit No.	Topic to be covered
June -'21	I	General characters and classification of Chordata up to classes Protochordata- Salient features of Cephalochordata, Affinities of Cephalochordata. Salient features of Urochordata Structure and life history of <i>Herdmania</i> Retrogressive metamorphosis –Process and Significance
July-'21	II	Cyclostomata, General characters, Comparison of <i>Petromyzon</i> and <i>Myxine</i> Pisces: General characters of Fishes <i>Scoliodon</i> : External features, Digestive system, Respiratory system, Structure and function of Heart, Structure and functions of the Brain. Migration in Fishes Types of Scales
	III	Dipnoi General characters of Amphibia Classification of Amphibia up to orders with examples
Aug-'21	III	Reptilia: General characters of Reptilia, Classification of Reptilia up to orders with examples <i>Calotes</i> : External features, Digestive system, Respiratory system, Structure and function of Heart, structure and function of Brain Identification of Poisonous snakes and Skull in reptiles
	IV	Aves General characters of Aves <i>Columba livia</i> : External features, Digestive system, Respiratory system, Structure and function of Heart, structure and function of Brain
Sep-'21	IV	Migration in Birds Flight adaptation in birds
	V	General characters of Mammalia Classification of Mammalia up to sub - classes with examples Comparison of Prototherians, Metatherians and Eutherians Dentition in mammals

**SEMESTER – III**

**2020-2021 CURRICULAR PLAN**

Subject Code: **ZOO 301C**

Title: ***Cytology, Genetics and Evolution.***

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Nov-2020	I	<b>Cytology - I</b> :-Electron microscopic structure of cell Plasma membrane - Fluid mosaic model, Transport functions plasma membrane (Active &Passive)
	II	<b>Cell Organelles</b> :- Structure and functions of Endoplasmic reticulum, Golgi body, Ribosome's, Lysosomes, Mitochondria
Dec-2020	II	DNA: Watson & Crick model , Semi Conservative Replication. RNA - Structure, types & functions of RNA. Chromosomes - Structure, types & functions, Giant Chromosomes (lamp brush & Polytene)
Jan-'21	III	<b>Genetics-I:-</b> Mendel's Laws of Inheritance, Incomplete dominance and co-dominance Lethal alleles, Epistasis , Linkage and crossing over.
	IV	<b>Genetics – II</b> :- Sex determination - Genic balance theory / Bridges theory, Barr bodies. Sex linked inheritance.
Feb-'21	IV	Extra chromosomal inheritance (Kappa particles in Paramecium) Blood group inheritance
Mar-'21	V	<b>Evolution:-</b> Origin of life,. Hardy -Weinberg Equilibrium, Lamarckism ,Darwinism, Neo – Darwinism Isolation, Speciation (Allopatric and Sympatric).

**SEMESTER – IV****2020-21 CURRICULAR PLAN**

Subject Code: ZOO 401C

Title: **Embryology, Physiology and Ecology.**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Nov-2020	I	Developmental biology and embryology Gametogenesis (Spermatogenesis, Oogenesis in mammals) Fertilization, Types of eggs. Types of cleavage Formation and function of fetal membrane in chick embryo Development, types of placenta in mammals
Dec-2020	II	Physiology-I Elementary study of process of digestion Absorption of digested food Structure of mammalian Lung & mechanism of respiration, transport of oxygen and carbon dioxide circulation- structure and function of heart and cardiac cycle excretion- structure of nephron, urine formation, counters current mechanism Physiology-II Structure & functional properties of Nerve Cell; Production & propagation of nerve Impulse. Synaptic transmission.
Jan-'21	III	Muscle contraction – ultra structure of muscle fiber, molecular and chemical basis of muscle contraction Endocrine glands – structure, secretions and the functions (of hormones) of pituitary gland, thyroid, parathyroid, adrenal gland and pancreas Hormonal control of reproduction in mammals
Feb-'21	IV	Ecology-I Important abiotic factors of ecosystem – temperature, light, water, oxygen and CO <sub>2</sub> Nutrient cycles- Nitrogen, Carbon and Phosphorous Components of ecosystem (example: lake), food chains and food web, energy flow in ecosystem
Mar-'21	V	Ecology-II Community interactions- mutualism, commensalism, parasitism, competition, predation. Ecological succession Zoogeography Study of physical faunal peculiarities of Oriental, Australian and Ethiopian regions

**SEMESTER – V**

**2020-2021 CURRICULAR PLAN**

Subject Code: **ZOO 501C**

Title : Animal Biotechnology

Dec-2020	I	Restriction modification systems : Types I, II and III- Nomenclature, Applications of Type II restriction enzymes in genetic engineering ,DNA polymerases, transferase, kinases and phosphatases,and DNA ligases Cloning Vectors: : Properties of Cloning Vectors Plasmid vectors:pBR and pUC 18, Bacteriophage and, Cosmids.Artificial Chromosome Vectors: BACs, YACs,
Jan - 2021	II	Cloning: Procedure of gene cloning, Use of linkers and adaptors. Microinjection, electroporation, biolistic method (gene gun). PCR:- Basics of PCR, Principle and Procedure of PCR. DNA Sequencing: Sanger's method of DNA sequencing- traditional and automated sequencing. Southern, Northern and Western blotting. DNA finger printing,
Feb-2021	III	Cell culture media: Natural and Synthetic, Types Cell cultures:- primary culture, secondary culture. Continuous cell lines , Established Cell lines (common examples such as MRC, HeLa, CHO, BHK, ) Cryopreservation of cultures, Hybridoma Technology:- Cell fusion, Production of Monoclonal antibodies (mAb), Applications of mAb .Stem cells: Types of stem cells- Embryonic and Adult Stem Cells, Diabetes and Parkinson's diseases.
Mar-2021	IV	Manipulation of reproduction in animals, Artificial Insemination, <i>In vitro</i> fertilization. Super ovulation, Embryo transfer, Embryo cloning. Transgenic Animals- Production of Transgenic Animals- sheep, fish.
April-21	V	Industry: Fermentation- Different types of Fermentation. Submerged & Solid state, batch, Fed batch & Continuous (Short notes only) Downstream processing - Filtration, centrifugation, chromatography, spray drying , Fisheries : Polyploidy in fishes



## SEMESTER – V

### 2020-2021 CURRICULAR PLAN

Subject Code: **ZOO 502C**

Title : : Animal Husbandry.

Dec-2020	I	General introduction to poultry farming, Principles of poultry housing. Poultry houses. Systems of poultry farming. Management of chicks, growers, layers, and Broilers.
Jan - 2021	II	Poultry feed management – Principles of feeding, Nutrient requirements for different stages of layers and broilers. Methods of feeding- Whole grain feeding system, Grain and mash method, All mash method, Pellet feeding. Poultry diseases – viral, bacterial, fungal and parasitic (two each); symptoms, control and management.
Feb-2021	III	Selection, care and handling of hatching eggs, Egg testing. Methods of hatching. Brooding and rearing, Sexing of chick
Mar-2021	IV	Breeds of Dairy Cattle and Buffaloes – Definition of breed; Classification of Indian Cattle breeds, exotic breeds and Indian buffalo breeds. Systems of inbreeding and crossbreeding. Housing of dairy animals – Selection of site for dairy farm; systems of housing – loose, housing system. Conventional dairy
April-21	V	Care and management of dairy animals - Care and management of calf, heifer, milk animal, dry and pregnant animal, bulls and bullocks. Cleaning and sanitation of programme. Records to be maintained in a dairy farm.



**SEMESTER – VI**

**2020-2021 CURRICULAR PLAN**

Subject Code: **ZOO 602C**

Title: Principles of Aquaculture

Apr-2021	I	<p>Introduction / Basics of Aquaculture:- Definition, Significance and History of Aquaculture Present status of Aquaculture – Global and National scenario Major cultivable species for aquaculture: freshwater, brackish water and marine. Criteria for the selection of species for culture</p>
May-2021	II	<p><b>Types of Aquaculture:</b> - Freshwater, Brackishwater and Marine Concept of Monoculture, Polyculture, Composite culture, Monosex culture and integrated fish Farming <b>Culture systems:</b> - Ponds, Raceways, Cages, Pens, Rafts and water recirculating systems <b>Culture practices:-</b>Traditional, extensive, modified extensive, semi-intensive and intensive cultures of Fish and shrimp.</p>
Jun-2021	III	<p><b>Design and construction of aqua farms :-</b>Criteria for the selection of site for freshwater and brackish Water pond farms, Design and construction of fish and shrimp farms <b>Seed resources:</b> - Natural seed resources and Procurement of seed for stocking: Carp and shrimp <b>Nutrition and feeds:</b> - Nutritional requirements of a cultivable fish and shellfish Natural food and Artificial feeds and their importance in fish and shrimp culture</p>
Jul-2021	IV	<p><b>Management of carp culture ponds:-</b> Culture of Indian major carps: Pre-stocking management – Dewatering, drying, Predators, weeds and algal blooms and their control, Liming and Fertilization; Stocking management – Stocking density and stocking; Post-stocking Management – Feeding, water Quality, growth and health care; and harvesting of ponds <b>Culture of giant freshwater prawn</b></p>
Jul-2021	V	<p><b>Culture of shrimp (<i>Penaeus monodon</i> or <i>Litopenaeus vannamei</i>)</b> <b>Culture of pearl oysters</b> <b>Culture of seaweeds-</b>species cultured, culture techniques, important by-products, prospects <b>Culture of ornamental fishes</b> – Setting up and maintenance of aquarium; and breeding.</p>

**SEMESTER – VI**

**2020-2021 CURRICULAR PLAN**

Subject Code: **ZOO 603C**

Title: Aquaculture Management

Apr-2021	I	<p><b>Breeding and Hatchery Management:-</b> Bundh Breeding and Induced breeding of carp by Hypophysation; and Use of synthetic hormones. Types of fish hatcheries; Hatchery management of Indian major carps Breeding and Hatchery management of <i>Penaeus monodon</i>/ <i>Litopenaeus vannamei</i> Breeding and Hatchery management of giant freshwater prawn</p>
May-2021	II	<p><b>Water quality Management:-</b>Water quality and soil characteristics suitable for fish and shrimp culture Identification of oxygen depletion problems and control mechanisms in culture ponds Liming materials, Organic manures and Inorganic fertilizers commonly used and Their implications in fish ponds</p>
Jun-2021	III	<p><b>Feed Management :-</b> Live Foods and their role in shrimp larval nutrition. Supplementary feeds: Principal foods in artificial diets; Types of feeds; Feed additives and Preservatives; role of probiotics. Feed formulation and manufacturing; Feed storag Feeding strategies: Feeding devices, feeding schedules and ration size; Feed evaluation-feed conversion efficiencies and ratios</p>
Jul-2021	IV	<p><b>Disease Management :-</b> Principles of disease diagnosis and health management; Prophylaxis, Hygiene and Therapy of fish diseases Specific and non-specific defense systems in fish; Fish immunization and Vaccination Etiology, Symptoms, prophylaxis and therapy of common fish diseases in fish ponds Etiology, Symptoms, prophylaxis and therapy of common shrimp diseases in shrimp ponds</p>
Jul-2021	V	<p><b>Economics and Marketing :-</b> Principles of aquaculture economics – variable costs, cost-benefit analysis , Fish marketing methods in India; Basic concepts in demand and price analysis. <b>Fisheries Extension</b> :Fisheries Training and Education in India; Role of extension in community development. <b>Fish Genetics</b> Genetic improvement of fish stocks – Hybridization of fish. Gynogenesis, Androgenesis, Polyploidy, Transgenic fish, Cryopreservation of gametes,</p>

**SEMESTER – VI**

**2020-2021 CURRICULAR PLAN**

Subject Code: **ZOO 604C**

Title: Postharvest Technology

Apr-2021	I	<b>Handling and Principles of fish Preservation:</b> - Handling of fresh fish, storage and transport of fresh fish, post mortem changes (Rigor mortis and spoilage), spoilage in marine fish and freshwater fish. Principles of preservation– cleaning, lowering of temperature, rising of temperature, use of salt, use of fish preservatives, exposure to low radiation
May-2021	II	<b>Methods of fish Preservation :-</b> Traditional methods - sun drying, salt curing, pickling and smoking. Advanced methods – chilling or icing, refrigerated sea water, freezing, canning, Irradiation and Accelerated Freeze drying (AFD).
Jun-2021	III	<b>Processing and preservation of fish and fish by-products:-</b> Fish products – fish minced meat, fish meal fish oil, fish liquid (ensilage), fish protein concentrate, fish chowder, fish cake, fish sauce, fish salads, fish Powder, pet food from trash fish, fish manure. Fish by-products – fish glue, ising glass, chitosan, pearl essence, shark fins, fish leather and fish maws. <b>Seaweed Products:</b> - Preparation of agar, algin and carrageen. Use of seaweeds as food for human consumption
Jul-2021	IV	<b>Sanitation and Quality control :-</b> Sanitation in processing plants - Environmental hygiene and Personalhygiene in processing plants. Quality Control of fish and fishery products – pre-processing control, control during processing and control after processing. Regulatory affairs in industries
Jul-2021	V	<b>Quality Assurance, Management and Certification :-</b> Seafood Quality Assurance and Systems: Good Manufacturing Practices (GMPs); Good Laboratory Practices (GLPs); Standard Operating Procedures (SOPs) Concept of Hazard Analysis and Critical Control Points (HACCP) in seafood safety. National and International standards – ISO 9000: 2000 Series of Quality Assurance System.



**DEPARTMENT OF ZOOLOGY**

SEMESTER – I

2020-2021 CURRICULAR PLAN

Subject Code: AQU 101C

Title: Basic principles of aquaculture

Month	Unit No.	Topic to be covered
Mar-2020	I	<p>Concept of Blue Revolution - History and definition of Aquaculture.</p> <p>Scope of Aquaculture at global Level, India and Andhra Pradesh.</p> <p>Fresh water aquaculture, brackish water aquaculture and mariculture</p> <p>Different Aquaculture systems – Pond, Cage, Pen, Running water, Extensive, Intensive and &amp; Semi- Intensive Systems and their significance. Monoculture, Polyculture and Monosex culture systems Aquaculture versus Agriculture; Present day needs with special reference to Andhra Pradesh</p>
Apr - 2020	II	<p>General Concepts of Ecology, Carrying Capacity and Food Chains</p> <p>Lotic and lentic systems, streams and springs</p> <p>Nutrient Cycles in Culture Ponds – Phosphorus, Carbon and Nitrogen</p> <p>Importance of Plankton and Benthos in culture ponds, nutrient dynamics and algal blooms ,Concepts of Productivity, estimation and improvement of productivity</p>
May-2020	III IV	<p>Classification of ponds based on water resources – spring, rain water, flood water, well water and water course ponds</p> <p>Functional classification of ponds – head pond, hatchery, nursery, rearing, production, stocking and quarantine ponds</p> <p>Hatchery design.Important factors in the construction of an ideal fish pond – site selection, topography, nature of the soil,water resource</p>
Jun-2020	IV V	<p>Lay out and arrangements of ponds in a fish farm</p> <p>Construction of an ideal fish pond – space allocation, structure and components of barrage pond.</p> <p><b>Pond management factor</b></p> <p>Need of fertilizer and manure application in culture ponds; Role of nutrients; NPKcontents of different fertilizers and manures used in aquaculture; and precautions in their application</p>
Jul-2020	V	<p>Physico-chemical conditions of soil and water optimum for culture –temperature, depth, turbidity, light, water and shore currents, PH, DOD, CO<sub>2</sub> and nutrients; measures to increase oxygen and reduce ammonia &amp; hydrogen sulphide in culture ponds; correction of PH,eradication of predators and weed control – advantages and disadvantages of weed, weed plants in culture ponds, aquatic weeds, weed fish, toxins used for weed control and control of predators</p>

**DEPARTMENT OF ZOOLOGY**  
**SEMESTER – II**  
**2020-2021 CURRICULAR PLAN**

Subject Code: AQU 201C

Title: **Biology of fin fish & shell fish**

Month	Unit No.	Topic to be covered
Aug-2020	I	General Characters and classification of fishes & crustaceans up to the level of Class Fish and Crustaceans of commercial importance Sense organs of fishes and crustaceans. Specialized organs in fishes – electric organ, venom and toxins Buoyancy in fishes- swim bladder and mechanism of gas secretion
Aug - 2020	II	Natural fish food, feeding habits, feeding intensity, stimuli for feeding, utilization of food, gut content analysis, forage ratio Principles of Age and growth determination; growth regulation, Growth rate measurement – scale method, otolith method, skeletal parts as age indicators Length-frequency method, age composition, age-length keys, absolute and specific growth, back calculation of length and growth, annual survival rate, Length-weight relationship.
Sep-2020	III	Breeding in fishes, breeding places, breeding habits & places, breeding in natural environment and in artificial ponds, courtship and reproductive cycles Induced breeding in fishes Breeding in shrimp, oysters, mussels, clams, pearl oyster, pila, and cephalopods.
Sep 2020	IV	Parental care in fishes, ovo-viviparity, oviparity, viviparity, nest building & brooding Embryonic and larval development of fishes. Embryonic and larval development of shrimp, crabs and molluscs of commercial importance Environmental factors affecting reproduction and development of cultivable aquatic fin & shell fish
Oct-2020	V	Endocrine system in fishes. Neurosecretory cells, androgenic gland, ovary, chromatophores, Molting, molting stages, metamorphosis in crustacean shell fish



**DEPARTMENT OF ZOOLOGY**  
**SEMESTER – III**  
**2020-2021 CURRICULAR PLAN**

Subject Code: AQU 301C

Title: **Fish nutrition & Feed technology**

Month	Unit No.	Topic to be covered
Nov-2020	I	Requirements for energy, proteins, carbohydrates, lipids, fiber, micronutrients for different stages of cultivable fish and prawns Essential amino acids and fatty acids, protein to energy ratio, nutrient interactions and protein sparing effect Dietary sources of energy, effect of ration on growth, determination of feeding rate, check tray factors affecting energy partitioning and feeding
Dec - 2020	II	Fed conversion efficiency, feed conversion ratio and protein efficiency ratio Wet feeds, moist feeds, dry feeds, mashes, pelleted feeds, floating and sinking pellets, advantages of pelletization Manual feeding, demand feeders, automatic feeders, surface spraying, bag feeding and tray feeding Frequency of feeding
Jan-2021	III	Feed ingredients and their selection, nutrient composition and nutrient availability of feed ingredients Feed formulation – extrusion processing and steam pelleting, grinding, mixing and drying, pelletization, and packing Water stability of feeds, farm made aqua feeds, micro-coated feeds, micro-encapsulated feeds and micro-bound diets Microbial, insect and rodent damage of feed, chemical spoilage during storage period and proper storage methods.
Feb-2021	IV V	Binders, anti-oxidants, probiotics Feed attractants and feed stimulants Enzymes, hormones, growth promoters and pigments Anti-metabolites, aflatoxins and fiber . Protein deficiency, vitamin and mineral deficiency symptoms Nutritional pathology and ant-nutrients
Mar-2021	V	Importance of natural and supplementary feeds, balanced diet.

**DEPARTMENT OF ZOOLOGY**  
**SEMESTER – IV**  
**2020-2021 CURRICULAR PLAN**

Subject Code: AQU 401C

Title: **Fresh water & Brackish water Aquaculture**

Month	Unit No.	Topic to be covered
Mar-2021	I	Status, scope and prospects of fresh water aquaculture in the world, India and AP Different fresh water aquaculture system
Apr - 2021	II	Major cultivable Indian carps – Labeo, Catla and Cirrhinus & Minor carps Exotic fish species introduced to India – Tilapia, Pangassius and Clarius sp. Composite fish culture system of Indian and exotic carps Impact of exotic fish, Compatibility of Indian and exotic carps and competition among them
May-2021	III	Recent developments in the culture of clarius, anabas, murrels, Advantages and constraints in the culture of air-breathing and cold water fishes- seed resources, feeding, management and production Special systems of Aquaculture- brief study of culture in running water, re-circulatory systems, Cages and pens, sewage-fed fish culture
Jun-2021	IV	Fresh water prawns of India - commercial value Macrobrachium rosenbergii and M. Malcomsonii– biology, seed production, pond preparation stocking, management of nursery and grow-out ponds, feeding, morphotypes and harvesting
Jul-2021	V	Culture of P.mondon – Hatchery technology and Culture practices including feed and disease management Culture of L. vannamei – hatchery technology and culture practices including feed and disease management. Mixed culture of fish and prawns.

**DEPARTMENT OF ZOOLOGY**  
**SEMESTER – V**  
**2020-2021 CURRICULAR PLAN**

Subject Code: AQU 501C

**Title: Fish health management**

Month	Unit No.	Topic to be covered
Aug-2021	I	Introduction to fish diseases – Definition and categories of diseases – Disease and environment
Sep- 2021	I	Disturbance in cell structure – changes in cell metabolism, progressive and retrogressive tissue changes, types of degeneration, infiltration, necrosis, cell death and causes Atrophy, hypertrophy, neoplasms, inflammation, healing and repair  Fungal diseases (both of shell and finfish) – Saprolegniosis, brachiomycosis, ichthyophorus diseases – Lagenidium diseases – Fusarium disease, prevention and therapy
	II	
Oct-2021	II	Viral diseases – Emerging viral diseases in fish, haemorrhagic septicemia, spring viremia of carps, infectious hematopoietic necrosis in trout, infectious pancreatic necrosis in salmonids, swim-bladder inflammation in cyprinids, channel cat fish viral disease, prevention and therapy  Bacterial diseases – Emerging bacterial diseases, aeromonas, pseudomonas and vibrio infections, columnaris, furunculosis, epizootic ulcerative syndrome, infectious abdominal dropsy, bacterial gill disease, enteric red mouth, bacterial kidney disease, proliferative kidney disease, prevention and therapy
Nov-2021	III	Major shrimp viral diseases – Baculovirus penaeii, Monodon Baculovirus, Baculoviral midgut necrosis, Infectious hypodermal and hematopoietic necrosis virus, Hepatopancreatic parvo like virus, Yellow head baculovirus, white spot baculovirus.  Bacterial diseases of shell fish – aeromonas, pseudomonas and vibrio infections, luminous bacterial disease, filamentous bacterial disease. Prevention and therapy
	IV	Protozoan diseases- Ichthyophthiriasis, Costiasis, whirling diseases, trypanosomiasis. Prevention and therapy  Nutritional pathology – lipid liver degeneration, Vitamin and mineral deficiency diseases.  Aflatoxin and dinoflagellates.
Dec-2021	IV V	Antibiotic and chemotherapeutics. Nutritional cataract. Genetically and environmentally induced diseases.  Diagnostic tools – immune detection- DNA/RNA techniques, General preventive methods and prophylaxis. Application and development of vaccines.  Quarantine – Significance, methods and regulations for transplants. Production of disease-free seeds. Evaluation criteria of healthy seeds. Good Feed management for healthy organisms, Zero water exchange, Probiotics in health management, Issues of biosecurity.

**DEPARTMENT OF ZOOLOGY**  
**SEMESTER – V**  
**2020-2021 CURRICULAR PLAN**

Subject Code: AQU 502C

Title: **Extension, Economics & Marketing**

Month	Unit No.	Topic to be covered
Aug-2021	I	1-1 Meaning and scope of economics with reference to fisheries
Sep- 2021	I	Basic concepts of economics – goods, services, wants and utility, demand and supply, value price, market demand and individual demand, elasticity of demand, law of diminishing marginal utility Theory of production, production function in fisheries various factors influencing the fishery product's price <b>Fisheries marketing</b>
	II	Basic marketing functions, consumer behavior and demand, fishery market survey and test marketing a product
Oct-2021	II	Fish marketing – prices and price determination of fishes Marketing institutions- primary (producer fishermen, fishermen cooperatives, and fisheries corporations) and secondary (merchant/agent/speculative middlemen) Methods of economic analysis of business organizations Preparation of project and project appraisal
	III	<b>Fisheries economics</b> Aquaculture economics- application of economics principles to aquaculture operations Various inputs and production function. Assumptions of production function in aquaculture analysis, least cost combination of inputs, laws of variable proportions
Nov-2021	III	Cost and earnings of aquaculture systems – carp culture, shrimp farming systems, hatcheries, Cost and earnings of fishing units and freezing plants Socio-economic conditions of fishermen in Andhra Pradesh, Role of Matsyafed and NABARD in uplifting fishermen's conditions, fishermen cooperatives Contribution of fisheries to the national economy
	IV	<b>Fisheries extension</b> Fisheries extension – scope and objectives, principles and features of fisheries extension education
Dec-2021	IV	Fisheries extension methods and rural development Adoption and diffusion of innovations
	V	<b>Transfer of technology</b> ICAR programs – salient features of ORP, NDS, LLP, IRDP, ITDA, KVK, FFDA, FCS, FTI, TRYSEM Training – meaning, training vs. education and teaching DAATT centers and their role in tot programs, video conferencing, education of farmers through print and electronic media.

## DEPARTMENT OF CHEMISTRY (PG)

A.G.& S.G. Siddhartha Degree College of Arts & Science, Vuyyuru-521165 SEMESTER TEACHING PLAN	
Department: Chemistry(PG)	Course Code: CH1T1
Semester: I	Course Name: General Chemistry
Month	Topics to be covered during the month
July	<p><b>Treatment of analytical data</b> : Classification of errors – Determinate and indeterminate errors –Minimisation of errors – Accuracy and precision – Distribution of random errors – Gaussian distribution – Measures of central tendency – Measures of precision – Standard deviation – Standard error of mean – student’s t test – Confidence interval of mean – Testing for significance – Comparison of two means – F – test – Criteria of rejection of an observation – propagation of errors – Significant figures and computation rules – Control charts – Regression analysis – Linear least squares analysis.</p>
Aug	<p><b>Introduction to Molecular Spectroscopy:</b> Motion of molecules-Degrees of freedom –Energy associates with the degrees of freedom-Type of spectra.  <b>Microwave spectroscopy:</b> Classification of molecules, rigid rotator model, effect of isotopic substitution on the transition frequencies, Intensities non-rigid rotator-Microwave spectra of polyatomic molecules.</p>
Sep	<p><b>Rotational Vibrational Spectroscopy:</b> Harmonic oscillator, vibrational energies of diatomic molecules, zero-point energy, force constant and bond strengths, anharmonicity, Morse potential energy diagram. Vibration – rotation spectroscopy. PQR branches, Born–Openheimer approximation, selection rules, normal modes of vibration, group frequencies, overtones, hot bands, applications.</p>
Oct	<p><b>Titrimetric Analysis:</b>Classification of reactions in titrimetric analysis- Primary and secondary standards-Neutralisation titrations-Theory of Neutralization indicators-Mixed indicators- Neutralisation curves-Displacement titrations-Precipitation titrations-Indicators for precipitation titrations-Volhard method-Mohr method- Theory of adsorption indicators-Oxidation reduction titrations-Change of electrode potentials during titration of Fe(II) with Ce(IV)- Detection of end point in redox titrations-Complexometric titrations- Metal ion indicators-Applications of EDTA titrations-Titration of cyanide with silver ion.</p>
Nov	<p><b>Symmetry and Group theory in chemistry:</b> Symmetry elements, symmetry operation, definition of group, sub group, relation between order of a finite group and its sub group. GMT tables Abelian and non-abelian groups. Point group. Schonfiles symbols, Find out Point group of a molecule (yes or no Method). Representation of groups by Matrices (representation for the <math>C_n</math>, <math>C_{nv}</math>, <math>C_{nh}</math>, <math>D_n</math> etc. groups to be worked out, explicitly). Character of a representation. The great Orthogonality theorem (without proof) and its importance. Character tables and their use. Construction of Character tables.</p>

**A.G.& S.G. Siddhartha Degree College of Arts & Science, Vuyyuru-521165**  
**SEMESTER TEACHING PLAN**

Department: Chemistry(PG)	Course Code: CH1T2
Semester: I	Course Name: Inorganic Chemistry
Month	Topics to be covered during the month
July	<b>Introduction to Exact</b> functions, derivation of wave equation using operator concept. Discussion of solutions of Schrodinger's equation to some model systems viz. particle in one dimensional box (applications), three-dimensional box, Rigid rotator system and the Hydrogen atom. Variation theorem, linear variation principle, perturbation theory (first order and non-degenerate), Application of variation method to the Hydrogen atom. <b>Quantum Mechanical Results:</b> Schrodinger equation, importance of wave function, Operators, Eigen values and Eigen
Aug	<b>Metal-ligand bonding:</b> Crystal Field Theory of bonding in transition metal complexes-Splitting of d-orbitals in octahedral, tetrahedral, square planar, Trigonal bipyramidal and Square pyramidal fields. Tetragonal distortions - Jahn-Teller effect. Applications and limitations of CFT. Experimental evidences for covalence in complexes. Molecular Orbital Theory of bonding for Octahedral, tetrahedral and square planar complexes. $\pi$ -bonding and MOT
Sep	<b>Metal – ligand Equilibria in solutions:</b> Step wise and over all formation constants. Trends in stepwise constants (statistical effect and statistical ratio). Determination of formation constants by Spectrophotometric method (Job's method) and pH metric method (Bjerrum's). Stability correlations - Irving - William's series. Hard and soft acids and bases (HSAB).
Oct	<b>Structure and Bonding:</b> $p\pi-d\pi$ bonding, Bent's rule, Non-valence cohesive forces, VSEPR theory. Molecular Orbital theory, Molecular orbitals in triatomic ( $\text{BeH}_2$ ) molecules and ions ( $\text{NO}_2^-$ ) and energy level diagrams. Walsh diagrams for linear ( $\text{BeH}_2$ ) and bent ( $\text{H}_2\text{O}$ ) molecules.
Nov	<b>Chemistry of non- transition elements:</b> Halogen oxides and oxyfluorides, Spectral and Magnetic properties of Lanthanides and Actinides. Analytical applications of Lanthanides and Actinides. Synthesis, properties and structure of B-N, S-N, P-N cyclic compounds. Intercalation compounds.  <b>Metal <math>\pi</math>- complexes:</b> preparation, structure and bonding in Nitrosyl, Dinitrogen and Dioxygen complexes.

Department: Chemistry(PG)	Course Code: <b>CH1T2</b>
Semester: I	Course Name: Organic Chemistry
Month	Topics to be covered during the month
July	<p><b>Nature of bonding and Aromaticity:</b>  <b>Nature of bonding:</b> Localised and Delocalized, Delocalised chemical bonding conjugation, cross conjugation, hyper conjugation, Tautomerism.  <b>Aromaticity:</b> Concept of Aromaticity, Aromaticity of five membered, six membered rings - Non benzenoid aromatic compounds:-cyclopropenylation, Cyclobutadienyldication, cyclopentadienyl anion-tropyllium cation and cyclooctatetraenyl dianion. Homoaromaticity, Anti aromaticity</p>
Aug	<p><b>Reactive intermediates &amp; Reactive Species: Reactive intermediates:</b>  Generation, Structure, Stability, Detection and Reactivity of Carbocations, Carbanions, Free radicals, Carbenes, Nitrenes and Arynes.  Reactive Species: Generation and reactivity of Electrophiles, Nucleophiles, Dienophiles, Ylids</p>
Sep	<p><b>Addition Reactions:</b> Additions: Addition to carbon – carbon multiple bonds, HX, X<sub>2</sub>, HOX, stereo chemistry of addition, formation and reaction of epoxides, syn and anti hydroxylation, hydrogenation(catalytic and Non catalytic), synthetic reactions of CO and CN and Cram's rule.</p>
Oct	<p>Eliminations Reactions:Types of elimination (E1, E1cB, E2) reactions, mechanisms, stereochemistry and orientation, Hofmann and Saytzeff's rules, Syn elimination versus anti elimination. Competitions between elimination and substitution.Dehydration, dehydrogenation, dehalogenation, decarboxylative elimination, pyrolytic eliminations.</p>
Nov	<p><b>Substitution Reactions:</b>  <b>Aliphatic Nucleophilic substitutions:</b>  The SN<sub>2</sub>, SN<sub>1</sub>, mixed SN<sub>1</sub> and SN<sub>2</sub> and S<sub>N</sub>i reactions : Mechanism, effect of structure, nucleophile, leaving group on substitutions. The neighbouring group mechanism, participation by <math>\sigma</math> and <math>\pi</math> bonds, anchimeric assistance.  <b>Aromatic Nucleophilic substitution:</b>  The S<sub>N</sub>Ar (Addition – Elimination), S<sub>N</sub>1(Ar) mechanisms and benzyne mechanism (Elimination – Addition).Reactivity- effect of substrate structure, leaving group and attacking nucleophile. The Von-Richter, Sommelet – Hauser and Smiles rearrangements.</p>

<b>Department: Chemistry(PG)</b>	<b>Course Code: CH1T2</b>
Semester: I	Course Code: CH1T2
Month	Course Name: Physical Chemistry
July	<p><b>Thermodynamics – I:</b> Classical thermodynamics - Brief review of first and second laws of thermodynamics - Entropy change in reversible and irreversible processes - Entropy of mixing of ideal gases - Entropy and disorder – Free energy functions - Gibbs-Helmholtz equation - Maxwell partial relations - Conditions of equilibrium and spontaneity - Free energy changes in chemical reactions: Van't Hoff reaction isotherm - Van't Hoff equation - Clausius Clapeyron equation - partial molar quantities - Chemical potential - Gibbs- Duhem equation - partial molar volume - determination of partial molar quantities - Fugacity - Determination of fugacity - Thermodynamic derivation of Raoult's law.</p>
Aug	<p><b>Surface phenomena and phase equilibria</b> - Surface tension - capillary action - pressure difference - across curved surface (young - Laplace equation) - Vapour pressure of small droplets (Kelvin equation) - Gibbs-Adsorption equation - BET equation - Estimation of surface area - catalytic activity of surfaces – ESCA , X- ray fluorescence and Auger electron spectroscopy.</p> <p><b>Surface active agents</b> - classification of surface active agents - Micellization -</p>
Sep	<p><b>Electrochemistry – I</b> - Electrochemical cells - Measurement of EMF - Nernst equation – Equilibrium constant from EMF Data - pH and EMF data - concentration cells with and without transference – Liquid junction potential and its determination - Activity and activity coefficients - Determination by EMF Method - Determination of solubility product from EMF measurements. Debye Huckel limiting law and its verification.</p> <p>Effect of dilution on equivalent conductance of electrolytes - Anomalous behaviour of strong electrolytes. Debye Huckel-Onsagar equation - verification and limitations, conductometric titrations</p>
Oct	<p><b>Chemical kinetics-</b> Methods of deriving rate laws - complex reactions - Rate expressions for opposing, parallel and consecutive reactions involving unimolecular steps. Theories of reaction rates -collision theory - Steric factor - Activated complex theory - Thermodynamic aspects – Unimolecular reactions - Lindemann's theory - Lindemann-Hinshelwood theory. Reactions in solutions - Influence of solvent - Primary and secondary salt effects - Elementary account of linear free energy relationships - Hammett - Taft equation - Chain reactions - Rate laws of H<sub>2</sub>-Br<sub>2</sub>, photochemical reaction of H<sub>2</sub> - Cl<sub>2</sub>, Decomposition of acetaldehyde and ethane - Rice-Herzfeld mechanism</p>
Nov	<p><b>Potentiometry:</b> Advantages of potentiometric methods - Reference electrode - Standard hydrogen electrode .Acid- alkali or Neutralisation titration, Oxidation – reduction titrations, Precipitation titrations, complexometric titrations, Methods of end point location (Graphical, Differentiation method, Pinkhof- Treadwell method). Calomel electrode -Indicator electrodes: Metal-metal ion electrodes - Inert electrodes - Membrane electrodes - theory of glass membrane potential - Direct potentiometry, potentiometric titrations - Applications.</p>



Semester: II	Course Code: CH2T2
Month	Course Name: Inorganic Chemistry
July	<b>Reaction mechanism of transition metal complexes:</b> Kinetics of octahedral substitution, acid hydrolysis, base hydrolysis-conjugate base (CB) mechanism. Direct and indirect evidences in favour of CB mechanism. Anation reactions. Reactions without metal-ligand bond cleavage. Factors affecting the substitution reactions in octahedral complexes. Trans effect on substitution reactions in square planar complexes. Mechanism of redox reactions, outer sphere mechanism, cross reactions and Marcus –Hush equation, inner sphere mechanism.
Aug	<b>Term symbols and Electronic spectra: Term symbols:</b> Term symbols and their derivation, Microstates, Hund's rules to predict ground terms and ground states. List of ground energy and higher energy terms from d1 to d9 configurations; <b>Electronic spectra of transition metal complexes:</b> Spectroscopic terms. Selection rules, Slater–Condon parameters, Racah parameters, Term separation energies for dn configurations, Orgel diagrams. Tanabe-Sugano diagrams for d1 to d9 configurations. Calculations of Dq, B and $\beta$ parameters. Charge transfer spectra.
Sep	<b>Bio-inorganic chemistry and Magnetic properties of complexes:</b> Storage and transport of dioxygen by Hemoglobin and Myoglobin, Vitamin B12 and its importance. <b>Magnetic properties of transition metal complexes:</b> Types of magnetism, factors affecting Para magnetism, anomalous magnetic moments - Orbital and spin contribution, spin-orbit coupling and magnetic moments chiro optical properties, Cotton effect and Faraday effect.
Oct	<b>Non-metal cages and metal clusters:</b> Structure and bonding in phosphorous-oxygen, phosphorous-Sulphur cages; structure and bonding in higher boranes with (special reference to B12 icosahedra). Carboranes, metalloboranes, metallocarboranes. Classification- LNCs and HNCs, Isoelectronic and Isolobal relationships, electron counting rules: Wade's and Lauher's rules. M-M multiple bonding; preparation, structure and bonding in dinuclear $[\text{Re}_2\text{Cl}_8]^{2-}$ ion, trinuclear $[\text{Re}_3\text{Cl}_9]$ , tetra nuclear $\text{W}_4(\text{OR})_{16}$ , hexa nuclear $[\text{Mo}_6\text{Cl}_8]^{4+}$ and $[\text{Nb}_6\text{Cl}_{12}]^{2-}$ .
Nov	<b>Organometallic chemistry of transition metals:</b> Classification and electron counting rules, hapticity, synthesis, structure and bonding of Olefinic complexes, Acetylene complexes, ferrocene, dibenzene chromium, cyclo heptatriene and tropylium complexes of transition metals. Reactions of organometallic compounds - oxidative addition reductive elimination, insertion and elimination. Applications of organometallic compounds, Catalytic hydrogenation, Hydroformylation, alkene polymerization.

Semester: II	Course Code: CH2T2
Month	Course Name: Inorganic Chemistry
July	<p><b>Chemistry Laboratory safety symbols – Meaning:</b>  Corrosive, carcinogenic, Harmful, toxic, dangerous to environment, Explosive, flammable, Narcotic, Oxidizing, Lachrymatory, Radioactive, irritant, gases under pressure, general laboratory safety precautions.</p>
Aug	<p><b>Environmental Chemistry:</b>  Ambient air quality standards, Acid rain, Smog, Greenhouse effect, Bhopal gas tragedy, Vishakhapatnam polymer industry tragedy, Renewable and Nonrenewable energy resources, DO, COD, BOD, Toxicity of lead, mercury, arsenic and Cadmium</p>
Sep	<p><b>Bioinorganic Chemistry:</b>  Essential elements, biological significance of Na, K, Mg, Ca, Fe, Metalloporphyrin – Structure and functions of hemoglobin, Myoglobin</p>
Oct	<p><b>Biological functions of Hormones:</b>  Introduction, Types of hormones, Role of Andosterone, Progesterone and thyroxin, action of cortisone, Insulin -.</p>
Nov	<p><b>Medicinal Chemistry:</b>  The role of vitamins – K,E,D,C,B – complex, classification of antibiotics, mechanism of antibiotics action - role of ampicillin, chloromycetin and amoxicillin as antibiotics.</p>

Semester: II	Course Code: CH2T2
Month	Course Name: Organic Chemistry
July	<p><b>Named reactions:</b>  Aldol condensation, Benzoin condensation, Cannizzaro condensation, Claisen condensation, Dieckmann condensation, Perkin condensation, Stobbe condensation, Reformatsky reaction, Mannich reaction, Reimer-Tiemann reaction, Vilsmeier-Haack reaction, Shapiro reaction, McMurray reaction, Michael addition reaction, Wittig reaction, Stork – Enamine reaction, Acyloin condensation, Robinson ringannulation and Simmon-Smith reaction</p>
Aug	<p><b>Stereo Chemistry-I:</b>  Concept of chirality, Recognition of Symmetry elements. Definition and classification of Stereoisomers, Enantiomer, Diastereomer, Homomer, Epimer, Anomer, Configuration and Conformation, Configurational nomenclature: D,L and R, S nomenclature. Molecular representation of organic molecules: Fischer, Newman and Sawhorse projections and their inter-conversions. Geometrical Isomerism. Cis-trans, E, Z- and Syn and anti nomenclature, Methods of determining configuration of Geometrical isomers using physical, spectral and chemical methods.</p>
Sep	<p><b>Stereo Chemistry-II:</b>  Definition of Conformation, Conformational analysis of acyclic molecules – alkanes and substituted alkanes. Conformational analysis of monocyclic molecules – cyclohexane – chair, boat and twist boat - mono and disubstituted cyclohexanes and conformation around carbon hetero atom bonds having C–O &amp; C–N. Confirmation and intramolecular hydrogen bonding</p>
Oct	<p><b>Green chemistry &amp; Phase transfer catalysis:</b>  Introduction to Green chemistry, Principles and concepts of Green chemistry, Green Catalysis, Biocatalysis, renewable resources, Green Reagents, examples of green reactions-synthesis of Ibuprofen, Clean Fischer-Indole synthesis comparison of the above with conventional methods. Introduction to Microwave organic synthesis: introduction, advantages and disadvantages. Applications: solvents (water and organic solvents), solvent free reactions (Solid state reactions).</p>
Nov	<p><b>Chemistry of Nanomaterials:</b>  Introduction, carbon nanotubes: structure of single and multi-walled carbon nanotubes, synthesis-solid and gaseous carbon source-based production techniques, synthesis with controlled orientation. Growth mechanism of carbon nano tubes-catalyst free growth, catalyst activated growth, general properties and applications.</p>

Semester: II	Course Code: CH2T2
Month	Course Name: Organic Spectroscopy
July	<p><b>UV- Visible Spectroscopy:</b>  Mechanics of measurement – Energy transitions – Simple chromophores – Auxochrome, Absorption shifts (Bathochromic shifts, Hypsochromic shift, Hyperchromic shift, Hypochromic shift). UV absorption of Alkenes – polyenes, unsaturated cyclic systems .  UV absorption of Carbonyl compounds <math>\alpha,\beta</math>-unsaturated carbonyl systems - UV absorption aromatic systems – solvent effects – geometrical isomerism – acid and base effects – typical examples – calculation of <math>\lambda_{max}</math> values for simple molecules using Woodward -Fieser rules</p>
Aug	<p><b>IR Spectroscopy:</b>  Mechanics of measurement – Fundamental modes of vibrations -Stretching and bending vibrations – Factors effecting vibrational frequency-hydrogen bonding. Finger print region and its importance. Typical group frequencies for – CH, -OH, -NH, -CC, -CO and aromatic systems - Application in structural determination  Examples – simple problems</p>
Sep	<p><b>Nuclear Magnetic Resonance Spectroscopy (1HNMR – First Order PMR):</b>  Introduction:Nuclear spin-Basic principle of -NMR - nuclear resonance –saturation-Larmor’s frequency-Relaxation- Instrumentation(Cw and FT) shielding and deshielding of magnetic nuclei- chemical shift and its measurements, factors influencing chemical shift, spin–spin interactions and factors influencing spin -spin coupling- Dynamic NMR- coupling constant J. and factors effecting J value.</p>
Oct	<p><b>Mass Spectrometry I</b>  Introduction- ionization methods-EI, CI, ES, MALDI and FAB – advantages and disadvantages-molecular ion peak and its importance, meta stable peak, Nitrogen rule and extension of nitrogen rule. Determination of Molecular weight and determination of molecular formulae- Isotopic Peaks- Identification of single chlorine atom and double chlorine atom single bromine atom and double bromine atoms in organic compounds. Instrumentation.</p>
Nov	<p><b>Mass Spectrometry II</b>  Fundamental fragmentation process- Stevenson’s rule- radical site initiated cleavage-charge site initiated cleavage- two bond cleavage- Retrodielalder cleavage- McLafferty rearrangement and other cleavages. Mass spectral fragmentation of alkanes, cycloalkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, phenols, thiols, ethers, carbonyl containing compounds (Aldehydes, ketones, esters and carboxylic acids), nitrogen compounds, alkyl chlorides and alkyl bromides, Examples of mass spectral fragmentation of organic compounds with respect to their structure determination</p>

Semester: II	Course Code: CH2T2
Month	Course Name: Physical Chemistry
July	<p><b>Third law of Thermodynamics and Statistical thermodynamics:</b>  Nernst Heat theorem -Third law of thermodynamics - Its limitations - Determination of absolute entropy -  Thermodynamic probability and most probable distribution, Entropy and probability - Boltzmann-Plank equation. Ensembles, Maxwell-Boltzmann distribution, Fermi-Dirac statistics, Bose Einstein statistics. Partition function - calculation of thermodynamic properties in terms of partition function- Chemical equilibrium and partition function - Translational, rotational and electronic partitionfunction - Entropy of Monoatomic gases (Sackur-Tetrode equation).</p>
Aug	<p><b>Polymer chemistry and Raman Spectroscopy:</b>  Classification of polymers - Free radical, ionic and Zeigler -Natta Polymerization - kinetics of free radical polymerization -Techniques of polymerization -Glass transition temperature - Factors influencing the glass transition temperature. Number average and Weight average, Molecular weights –molecular weights determinations –Membrane Osmometry, Light scattering phenomenon. Classical and quantum theories of Raman effects, pure rotational, vibrational and Vibrational- rotational Raman spectra, selection rules, mutual exclusion principle</p>
Sep	<p><b>Electro Chemistry-II:</b>  Reference electrode - Standard hydrogen electrode. Calomel electrode -Indicator electrodes: Metal-metal ion electrodes - Inert electrodes -Membrane electrodes-theory of glass membrane potential, potentiometric titrations, advantages of potentiometric titrations, Conductometric titrations. Electrode potentials - Double layer at the interface - rate of charge transfer - Decomposition potential - Over potential - Tafel plots - Derivation of Butler-Volmer equation for one electron transfer - electro chemical potential.</p>
Oct	<p><b>Chemical kinetics and Photo chemistry:</b>  Branching Chain Reactions – Hydrogenoxygen reaction - lower and upper explosion limits - Fast reactions - Study of kinetics by flow methods - Relaxation methods - Flash photolysis. Acid base catalysis –protolytic and prototropic mechanism. Enzyme catalysis - Michelis-Menten kinetics.  <b>Photochemistry:</b>  Quantum yield and its determination, Actinometry, Reactions with low and high quantum yields, Photo sensitization, Exciplexes and Excimers, Photochemical equilibrium, Kinetics of collisional quenching - Stern-Volmer equation.</p>
Nov	<p><b>Symmetry and Group theory in chemistry:</b> Symmetry elements, symmetry operation, definition of group, sub group, relation between order of a finite group and its sub group. GMT tables Abelian and non-abelian groups. Point group. Schonflies symbols, Find out Point group of a molecule (yes or no Method). Representation of groups by Matrices (representation for the <math>C_n</math>, <math>C_{nv}</math>, <math>C_{nh}</math>, <math>D_n</math> etc. groups to be worked out, explicitly). Character of a representation. The great Orthogonality theorem (without proof) and its importance. Character tables and their use. Construction of Character tables.</p>

Semester: III	Course Code: CH4T1
Month	Course Name: Advanced Organic Spectroscopy
July	<p><b>Proton NMR Spectroscopy:</b></p> <p>Determination of structure of organic compounds using PMR data. Spin system, Nomenclature of spin system, spin system of simple and complex PMR spectrum (Study of AB – A<sub>2</sub> – AB<sub>2</sub>. ABX – ABC – AMX interactions)</p> <p>Simplification of complex spectra- nuclear magnetic double resonance, chemical shift reagents, solvent effects on PMR Spectrum .</p>
Aug	<p><b>ORD &amp; CD Curves:</b> Optical rotatory dispersion : Theory of optical rotatory dispersion – Cotton effect –CD curves-types of ORD and CD curves-similarities and difference between ORD and CD curves. α- Halo keto rule, Octant rule – application in structural studies.</p>
Sep	<p><b><sup>13</sup>C-NMR spectroscopy:</b> Similarities and Difference between PMR and CMR-CMR recording techniques -BBC-BBD-SFORD-Gate pulse CMR spectrum.</p> <p>General considerations, chemical shift (aliphatic, olefinic, alkyne, aromatic, heteroaromatic and carbonylcarbon), coupling constants. Typical examples of CMR spectroscopy – simple problems</p>
Oct	<p><b>2D NMR spectroscopy:</b> Definitions and importance of COSY, DEPT, HOMCOR, HETCOR, INADEQUATE, INDOR, INEPT, NOESY, HOM2DJ, HET2DJ.</p> <p>Study of COSY, DEPT, HOMCOR, HETCOR, INADEQUATE INDOR INEPT ,NOESY HOM2DJ, HET2DJ, taking simple organic compounds as examples.</p>
Nov	<p>Structural Elucidation of Organic compounds Using UV, IR, <sup>1</sup>H-NMR, <sup>13</sup>C-NMR and Mass spectroscopy.</p>

Semester: III	Course Code: CH4T1
Month	Course Name: Advanced Organic Spectroscopy
July	<b>Alkaloids:</b> Introduction, Definition, occurrence, role of alkaloids in plants, classification, isolation and general methods for structural elucidation of alkaloids. Structure elucidation of Morphine, Vincristine, Quinine and Reserpine
Aug	<b>Terpenoids:</b> Introduction, Definition, nomenclature, classification, isolation, isoprene rule and general methods for structural elucidation of Terpenoids. Structure elucidation of Zingiberene, Santonin, farnesol and abietic acid.
Sep	<b>Steroids:</b> Introduction, Definition, nomenclature, classification. Occurrence, isolation, physiological action, structure elucidation of Cholesterol, Androsterone, Testosterone and Progesterone
Oct	<b>Flavonoids and Isoflavonoids:</b> Introduction, Definition, classification, isolation, physiological action, structure elucidation of Kaempferol and Quercetin
Nov	<b>Pigments:</b> Introduction, classification of natural pigments, introduction and classification of carotenoids, functions of carotenoids in plants and animals, structure and synthesis of $\alpha$ – carotene and $\beta$ – carotene.

Semester: III	Course Code: CH4T1
Month	Course Name: Advanced Organic Spectroscopy
July	<b>Oxidations:</b> Definition and types of Oxidations, oxidations with ruthenium tetroxide, iodobenzenediacetate, Tl(III) nitrate, Chromium (VI) oxidants, Lead tetra acetate, SeO <sub>2</sub> , MnO <sub>2</sub> , Ag <sub>2</sub> CO <sub>3</sub> , Oppenauer oxidation, perhydroxylation using KMnO <sub>4</sub> , OsO <sub>4</sub> , HIO <sub>4</sub> , oxidation with iodine silver carboxylate (Woodward and Prevost conditions), Definition & mechanism of epoxidation by peracids.
Aug	<b>Reductions</b> :Definition and types of reductions, reduction by dissolving metals - Reduction with metal and liquid ammonia (Birch Reduction of aromatic compounds), Reduction with metal acid - Clemensons reduction, Reduction by hydride transfer reagents, Aluminium alkoxide - Meerwein Ponderf Verley Reduction, LiAlH <sub>4</sub> , NaBH <sub>4</sub> , Diisobutylaluminium hydride(DIBAL), Sodium cyano borohydride, trialkyl borohydrides, Reduction with diimide,. Wolff-Kishner reduction
Sep	<b>Molecular Rearrangements:</b> Migration to electron deficient carbon atom. Pinacole-Pinacolone rearrangement, Wagner-Meerwein rearrangement, Dienone-Phenol rearrangement, Benzil-Benzilic acid rearrangement, Favorski rearrangement.  Migration to electron deficient hetero atom: Wolf, Hofmann, Curtius, Schmidt, Beckmann rearrangement, Baeyer-Villiger rearrangement, Stevens, Neber rearrangements. Fries, Fischer-Hepp, Orton, Bamberger, Dakin, Cumene Hydroperoxide rearrangement.
Oct	<b>Pericyclic Reactions – I:</b> Definition, classification of pericyclic reactions, Molecular Orbital energy level diagrams, electronic configuration in ground and first excited states of Ethylene, 1,3-Butadiene, 1,3,5 – Hexatriene, allyl system, stereo chemical notations – suprafacial, antarafacial, conrotatory and disrotatory modes, Woodward and Hoffmann selection rules. <b>Electrocyclic reactions:</b> Mechanism, Stereochemistry of (4n) and (4n+2) $\pi$ systems. PMO, FMO and correlation methods. <b>Cyclo additions:</b> Mechanism, stereochemistry of (2+2) and (4+2) $\pi$ systems, PMO, FMO and correlation methods. <b>Sigmatropic rearrangements:</b> Classification, mechanism for FMO and PMO approach under thermal and photo chemical conditions. (Detailed treatment of Claisen, Cope rearrangements fluxional molecules, aza-cope rearrangements).
Nov	<b>Photochemistry:</b> Photochemical processes: Energy transfer, sensitization and quenching. Singlet and triplet states and their reactivity. Photochemistry of olefins – conjugated olefins, Aromatic compounds–isomerisation–additions. Photochemistry of carbonyl compounds – Norrish type I and II reactions –Paterno – Buchi Reaction. Photoreduction, Photochemical rearrangements–Photo Fries rearrangement, Di- $\pi$ -methane rearrangement, Barton reaction.



Semester: III	Course Code: CH4T1
Month	Course Name: Advanced Organic Spectroscopy
July	<p><b>Formation of carbon-carbon single bonds:</b>  Alkylation of relatively acidic methylene groups, alkylation of ketones, enamine and related reactions, umplong (dipole inversion).  Allylic alkylation of alkenes, alkylation of <math>\alpha</math>-thiocarbanions- <math>\alpha</math>-selenocarbanions, formation of carbon carbon single bonds by the addition of free radicals to alkenes, synthetic applications of carbenes and carbenoids</p>
Aug	<p><b>Formation of carbon-carbon double bonds</b>  Pyrolytic syn elimination reactions sulphoxide-sulphonate rearrangement, synthesis of allyl alcohols, the witting reaction, alkenes from sulphones, decarboxylation of <math>\beta</math>-lactones, alkenes.  Stereo selective synthesis of tri and tetra substituted alkenes, oxidative decarboxylation of carboxylic acids, stereospecific synthesis from 1,2-diols, reductive dimerization of carbonyl compounds.</p>
Sep	<p><b>Diels–Alder and related reactions:</b> The dienophile, heterodienophile, oxygen as dienophile, The diene, acyclic dienes, heterodienes, 1,2-dimethylene cycloalkanes, vinyl cycloalkenes, and vinyl arenes, cyclic dienes and furans.  Intra molecular Diels –Alder reactions, stereochemistry and mechanism of Diels – Alder reaction, retro Diels – Alder reaction, catalysis by lewis acids, photosensitized Diels- Alder reactions and 1,3-dipolar cycloaddition reactions.</p>
Oct	<p><b>Disconnection approach</b>  Introduction to Retro-synthetic analysis, Disconnection approach with suitable examples, Definitions: FGI, Disconnection, synthons, synthetic equivalent, reagent, target molecule, General strategy: choosing a disconnection, greatest simplification, symmetry, high yielding steps, recognizable starting materials.  Chemo, regio and stereo selectivity with examples. One group C-C disconnections-Alcohols, carbonyl compounds, alkene synthesis, two group disconnections: 1,3 – dicarbonyl compounds, <math>\alpha,\beta</math> – unsaturated carbonyl compounds.</p>
Nov	<p><b>Protecting groups:</b>  Theory and importance of functional group protection and deprotection in organic synthesis:-Protecting agents for the protection of functional groups: Hydroxyl group, Amino group, Carbonyl group and Carboxylic acid group  carbon-carbon multiple bonds; chemo- and regioselective protection and deprotection. Illustration of protection and deprotection in organic synthesis.</p>

**A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**

**DEPARTMENT OF COMPUTER SCIENCE**

**SEMESTER – I**

**2020-21 CURRICULAR PLANS**

Subject Code: CSC101C

Title: **Problem Solving in ‘C’**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Feb-21	I II	<b>Introduction to Algorithms and Programming Languages: Decision Control and Looping Statements</b>
March-21	II III	Break and Continue Statement – Go to Statement <b>Functions:</b> Introduction – using functions – Function declaration/prototype – Function definition.
April-21	IV	<b>Arrays:</b> Declaration of Arrays – Accessing elements of the Array. <b>Strings:</b> Introduction String and Character functions
May-21	V	<b>Pointers:</b> Introduction to Pointers – declaring Pointer Variables Passing Arguments to Functions using Pointer. Structure, Union.
June-21		Revision

**SEMESTER – I**

**2020-21 CURRICULAR PLANS**

Subject Code: CCSC103C

Title: Information Technology

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Feb-21	I II	<b>INTRODUCTION:</b> RAM – ROM – EPROM - PROM and Other types of memory. <b>OPERATING SYSTEM:</b> Meaning - Definition & Functions, Types of OS - Booting process
March-21	II III	Windows: Using the Start Menu –Control Panel – Using multiple. <b>SOFTWARE:</b> System software, Application software, Programming Languages
April-21	IV	<b>Data communication:</b> LAN, WAN, VAN, virtual private network (VPN).
May-21	V	<b>New technologies:</b> Introduction to hyper media, AI, KDD, OLAP,OLTP.
June-21		Revision

**SEMESTER – II****2020-21 CURRICULAR PLANS**

Subject Code: CSC201C

Title: Data Structures Using ‘C’

Month	Unit No.	Topic to be covered
June-21	I II	Introduction to Data Structures, Principles of Programming and Analysis of Algorithms . Arrays: Introduction to Linear and Non- Linear Data Structures
July-21	II III	<b>Linked Lists:</b> Introduction to Lists and Linked Lists, Dynamic Memory Allocation. Stacks, Queue Circular Queues, Double Ended Queues-Dequeues, Priority Queues, Application of Queues
August-21	IV	Binary Trees , Applications of Binary Tree, Properties of Binary Trees
Sep-21	V	Graphs , Searching and sorting
Oct-21		Revision

**SEMESTER – II****2020-21 CURRICULAR PLANS**

Subject Code: CCSC203C

Title: E-Commerce with Web Designing

Month	Unit No.	Topic to be covered
June-21	I II	Meaning, Nature, Concepts, Advantages, Disadvantages and reasons for Transacting Online, Types of E-Commerce, e-commerce Business Models. Models and methods of e-payments (Debit Card, Credit Card, Smart Cards, e-money),
July-21	II III	Risks Involved in e-payments. <b>On-line Business Transactions:</b> Meaning, Purpose, Advantages and Disadvantages of Transacting Online, E- Commerce Applications in Various Industries
August-21	IV	<b>Website designing</b> : Introduction to HTML, Basic html, Document body text, Hyperlinks, Lists, Tables, Images, Frames, Forms and XHTML
Sep-21	V	<b>Security and Encryption</b> : Need and Concepts, E-Commerce Security Environment: (Dimension, Definition and Scope Of E-Security), Security Threats in The E-Commerce Environment
Oct-21		Revision

**SEMESTER – III****2020-21 CURRICULAR PLANS**

Subject Code: CSC 301C

Title: **Object Oriented Programming through JAVA**

Month	Unit No.	Topic to be covered
Nov-2020	I II	<b>Introduction to Java:</b> Naming Conventions and Data Types, Operators in Java, Input and Output, Arrays, Strings, Introduction to OOPs, Classes and Objects
Dec-2020	II III	Methods in Java, Inheritance. Polymorphism, Type Casting, Abstract Classes, Interfaces, Packages, Exception Handling
Jan-'21	IV	Streams, Threads: Tasking, Multi Tasking, Uses of Threads, Creating a Thread and Running it, Terminating the Thread, Single Tasking Using a Thread, Multi Tasking Using Threads, Multiple Threads
Feb-'21	V	<b>Applets, Java Database Connectivity:</b> Database Servers, Database Clients, JDBC (Java Database Connectivity), Working with Oracle Database, Working with MySQL Database.
Mar-'21		Revision

**SEMESTER – III****2020-21 CURRICULAR PLANS**

Subject Code: CCSC 301C

Title: **OAT**

Month	Unit No.	Topic to be covered
Nov-2020	I II	Concept of Abstract Data Types (ADTs), Lists Arrays, Stacks.
Dec-2020	II III	<b>Queues:</b> Definition, ADT, Array and Linked representations , <b>Trees:</b> Binary Tree, Definition, Properties
Jan-'21	IV	<b>Graphs</b> – Graph and its Representation, Graph Traversals, Connected Components, Basic Searching Techniques, Minimal Spanning Trees
Feb-'21	V	<b>Sorting and Searching:</b> Selection, Insertion, Bubble, Merge, Quick, Heap sort, Sequential And Binary Searching.
Mar-'21		Revision

**SEMESTER – IV****2020-21 CURRICULAR PLANS**Subject Code: **CSC 401C**Title: **Data Structures**

Month	Unit No.	Topic to be covered
April-21	I II	Concept of Abstract Data Types (ADTs), Lists Arrays, Stacks.
May-2020	II III	<b>Queues:</b> Definition, ADT, Array and Linked representations , <b>Trees:</b> Binary Tree, Definition, Properties
June-'21	IV	<b>Graphs</b> – Graph and its Representation, Graph Traversals, Connected Components, Basic Searching Techniques, Minimal Spanning Trees
July-'21	V	<b>Sorting and Searching:</b> Selection, Insertion, Bubble, Merge, Quick, Heap sort, Sequential And Binary Searching.
August-'21		Revision

**SEMESTER – IV****2020-21 CURRICULAR PLANS**Subject Code: **CCSC 401C**Title: **Programming in 'C'**

Month	Unit No.	Topic to be covered
April-21	I II	<b>Introduction to Algorithms and Programming Languages: Decision Control and Looping Statements</b>
May-2020	II III	Break and Continue Statement – Go to Statement <b>Functions:</b> Introduction – using functions – Function declaration/ prototype – Function definition.
June-'21	IV	<b>Arrays:</b> Declaration of Arrays – Accessing elements of the Array. <b>Strings:</b> Introduction String and Character functions
July-'21	V	<b>Pointers:</b> Introduction to Pointers – declaring Pointer Variables Passing Arguments to Functions using Pointer. Structure, Union.
August-'21		Revision

**SEMESTER – V****2020-21 CURRICULAR PLANS**Subject Code: **CSC 501C**Title: **Database Management System**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Nov-2020	I II	Introducing the database and DBMS, Why the database is important, Historical Roots Database Systems, Relational Database & Data Modeling Model
Dec-2020	II III	Entity Relationship Model Normalization and Database Design Database Design
Jan-'21	IV	<b>Structured Query Language: Introduction to SQL:</b> Data Definition Commands, Data Manipulation Commands
Feb-'21	V	<b>Procedural SQL:</b> Introduction to PL/SQL: Triggers, Stored Procedures, PL/ SQL Stored Functions
Mar-'21		Revision

**SEMESTER – V****2020-21 CURRICULAR PLANS**Subject Code: **CSC502C**Title: **Software Engineering**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Nov-2020	I II	<b>Introduction to Software Engineering &amp; Process : The Evolving Role of Software, <i>Process</i>, Framework, Process Model</b>
Dec-2020	II III	Evolutionary Process Models: Prototyping, The Spiral Model, And The Concurrent Development Model. Requirements Engineering: Requirements Engineering Tasks
Jan-'21	IV	Design Process And Design Quality - Design Concepts - The Design Model: Data Design Elements
Feb-'21	V	<b>Software Quality:</b> Quality and Quality Concepts, Software Quality Assurance (SQA), The SQA Plan.
Mar-'21		Revision

**SEMESTER – V**

**2020-21 CURRICULAR PLANS**

Subject Code: **CSC505C**

Title: **JAVA**

Month	Unit No.	Topic to be covered
Nov-2020	I II	Fundamentals of Object – Oriented Programming , Constants, Variables & Data Types
Dec-2020	II III	<b>Operators.</b> Instance Working with Strings. <b>Decision Making &amp; Branching:</b> if statement, Simple if statements, if-Else statement, Nesting of if-else statements, the else if ladder, the switch, <b>Looping:</b> for. do-while, while
Jan-‘21	IV	<b>Classes, Objects &amp; Methods:</b> Introduction, defining a class, adding variables, adding methods, creating objects, Accessing class members, Constructors, Method overloading, Method Overriding, Static members, Nesting of methods;
Feb-‘21	V	<b>Inheritance:</b> Introduction, Defining interfaces, Extending interfaces, Implementing interfaces, Assessing interface variables;
Mar-‘21		Revision

**SEMESTER – V**

**2020-21 CURRICULAR PLANS**

Subject Code: **CSC506C**

Title: **DATA BASE MANAGEMENT SYSTEM**

Month	Unit No.	Topic to be covered
Nov-2020	I II	<b>Database Systems Introduction Relational Database &amp; Data Modeling</b>
Dec-2020	II III	<i>Advanced Data Modeling:</i> The Extended Entity Relationship Model, Entity clustering <b>Normalization and Database Design:</b> 1NF, 2NF, 3NF, BCNF, de normalization.
Jan-‘21	IV	<b>Structured Query Language: DDL, DML, JOINS</b>
Feb-‘21	V	<b>Procedural SQL: Introduction to PL/SQL :</b> Triggers, Stored Procedures, Pl/ SQL Stored Functions
Mar-‘21		Revision

**SEMESTER – V****2020-21 CURRICULAR PLANS**

Subject Code: CSC507C

Title: WEB TECHNOLOGY

Month	Unit No.	Topic to be covered
Nov-2020	I II	Introduction to HTML, Basic html, Document body text, Hyperlinks, Lists, Tables, Images, Frames, Forms and XHTML Cascading Style Sheets: Introduction, Defining your own styles, properties
Dec-2020	II III	String Manipulations, Mathematical functions, Statements, Operators. <b>Objects in Java Script &amp; Dynamic HTML with Java Script</b> , <i>HTML with Java Script</i> : Data validation, Rollover buttons, Moving images.
Jan-'21	IV	<i>XML</i> : Introduction to XML, Basic XML, document type definition, XML Schema, Document object model, Using XML parser.
Feb-'21	V	JSP Lifecycle, Basic Syntax, EL (Expression Language), EL Syntax, Using EL Variables
Mar-'21		Revision

**SEMESTER – VI****2020-21 CURRICULAR PLANS**

Subject Code: CSC601G

Title: **WEB TECHNOLOGY**

Month	Unit No.	Topic to be covered
April-21	I II	<b>Introduction to HTML</b> , Basic html, Document body text, Hyper links Style Sheets: Introduction, Defining your own styles, properties
May-2020	II III	Java Script: java Script, the basics, Variables <b>Objects in Java Script &amp; Dynamic HTML with Java Script</b> , <i>Dynamic HTML</i>
June-'21	IV	<i>XML</i> : Introduction to XML, Basic XML, document type definition, XML Schema, Document object model, presenting XML, Using XML parser.
July-'21	V	JSP: JSP Lifecycle, Basic Syntax, EL (Expression Language), EL Syntax, Using EL Variables
August-'21		Revision



**SEMESTER – VI**

**2020-21 CURRICULAR PLANS**

Subject Code: **CSC602C**

Title: **PHP/WORD PRESS**

Month	Unit No.	Topic to be covered
April-21	I II	<b>Installing and Configuring MySql</b> <b>Working with Functions:</b>
May-2020	II III	Working with Objects: Creating Objects, Object Instance Working with Strings. <b>Working with Forms:</b> Creating Forms, Accessing Form Input with User defined Arrays, Combining HTML and PHP code on a single Page
June-'21	IV	<b>Introduction to My SQL</b> and Interfacing with Databases through PHP Understanding the database design process
July-'21	V	<b>Word press:</b> Introduction to word press, servers like wamp, bitnami e.tc, installing and configuring word press, understanding admin panel.
August-'21		Revision

**SEMESTER – VI**

**2020-21 CURRICULAR PLANS**

Subject Code: **CSC603C**

Title: **JAVASCRIPT/JQUERY**

Month	Unit No.	Topic to be covered
April-21	I II	<b>JQuery – Basics</b> <b>jQuery – CSS Methods</b>
May-2020	II III	jQuery – Events, jQuery – Effects: JQuery Effect Methods, <b>Intro to jQuery UI</b> Need of jQuery UI in real web sites, Downloading jQuery UI, Importing jQuery UI, Draggable, Droppable, Resizable, Selectable, Sortable
June-'21	IV	<b>Intro to AJAX:</b> Need of AJAX in real web sites, Getting database data using jQueryAJAX, Inserting, Updating, Deleting database data using jQuery
July-'21	V	<b>Intro to AngularJS:</b> Need of AngularJS in real web sites
August-'21		Revision

**SEMESTER – VI****2020-21 CURRICULAR PLANS**

Subject Code: CCSC605

Title: TALLY

Month	Unit No.	Topic to be covered
April-21	I II	Introduction, Software versions of Tally Introduction of Tally Software Creation of a company
May-2020	II III	Groups, pre defined Groups, Creation of New Groups, Creation of sub Group Ledger Creation Single and multiple Ledgers, Displaying & altering Ledgers, configure Ledger, Stock Ledger, Ledgers and their Group Allocation.
June-‘21	IV	Types of vouchers – recording of vouchers – entry of payment voucher, Receipt voucher, sales voucher, purchase voucher, Journal Voucher, Contra Voucher, Debit & Credit Note
July-‘21	V	Customizing the final accounts – Profit and Loss Account, Balance Sheet. Key board shortcuts in Tally. Generating the Reports from Tally, Trial Balance.
August-‘21		Revision

**SEMESTER – VI****2020-21 CURRICULAR PLANS**

Subject Code: CCSC606C

Title: E-COMMERCE

Month	Unit No.	Topic to be covered
April-21	I II	Introduction to E-Commerce Business-to-Business Electronic Commerce
May-2020	II III	Electronic Data Interchange (EDI), EDI: Nuts and Bolts EDI and Business. <b>Internet and Extranet</b>
June-‘21	IV	<b>Public Policy:</b> From Legal Issues to Privacy : Legal Incidents, Ethical and Other public Policy Issues, Protecting Privacy, Protecting Intellectual Property
July-‘21	V	<b>Infrastructure For EC</b> Network of Networks, Internet Protocols, Web- Based client/Server, Internet Security, Selling on the Web, Chatting on the Web.
August-‘21		Revision

SEMESTER – VI

2020-21 CURRICULAR PLANS

Subject Code: CCSC607C

Title: PHP & My Sql

Month	Unit No.	Topic to be covered
April-21	I II	<b>Installing and Configuring MySql</b> <b>Working with Functions:</b>
May-2020	II III	Working with Objects: Creating Objects, Object Instance Working with Strings. <b>Working with Forms:</b> Creating Forms, Accessing Form Input with User defined Arrays, Combining HTML and PHP code on a single Page
June-'21	IV	<b>Introduction to My SQL</b> and Interfacing with Databases through PHP Understanding the database design process
July-'21	V	<b>Word press:</b> Introduction to word press, servers like wamp, bitnami e.tc, installing and configuring word press, understanding admin panel.
August-'21		Revision

# DEPARTMENT OF COMPUTER SCIENCE (PG)

## SEMESTER – I

### 2020-21 CURRICULAR PLANS

Subject Code: 20MCS101

Title: **Data Structures**

Month	Topic to be covered
July	<b>Introduction and Overview:</b> Elementary Data Organization, Data Structures, Data Structure operations, Algorithms: Complexity, Time-Space Tradeoff. <b>Preliminaries:</b> Mathematical Notation and Functions, Algorithmic Notation, Control Structures, Complexity of Algorithms, Other Asymptotic Notations, Sub Algorithms, Variables, Data Types.
Aug	<b>String Processing:</b> Storing Strings, Character Data Type, String Operations, Word Processing, Pattern Matching Algorithms. <b>Arrays, Records and Pointers:</b> Linear Arrays, Representation and Traversing Linear Arrays, Inserting and Deleting, Bubble Sort, Linear Search, Binary Search, Multidimensional Arrays, Pointer Arrays, Record Structures, Representation of records in memory, Parallel Arrays, Matrices, Sparse Matrices.
Sep	<b>Linked Lists:</b> Representation, Traversing, Searching, Memory Allocation: Garbage Collection, Insertion, Deletion, Header Linked Lists, Two-Way Lists. <b>Stacks, Queues, Recursion:</b> Stacks, Array representation, Linked List representation, Arithmetic Expressions; Polish notation, Quick Sort, Recursion, Towers of Hanoi, Implementation of recursive procedures by stacks, Queues, Linked representation of Queues, DEqueues, Priority Queues.
Oct	<b>Trees:</b> Binary Trees, Representing and Traversing Binary Trees, Traversal Algorithms Using Stacks, Header Nodes, Binary Search Trees, Searching, Insertion and Deletion in Binary Search Trees, AVL Search Trees, Insertion and Deletion in AVL Trees, M-Way Search Trees, Searching, Insertion and Deletion in M-Way Search Tree, B Trees, Searching, Insertion and Deletion in B-Tree, Heap: Heap Sort, Huffman's Algorithms, General Trees.
Nov	<b>Graphs:</b> Terminology, Sequential representation of Graphs, Warshall's Algorithm, Linked representation of Graphs, Operations on Graphs, Traversing a Graph, Topological Sorting. <b>Sorting and Searching:</b> Insertion Sort, Selection Sort, Merging, Merge Sort, Radix Sort, Searching and Data Modification, Hashing.

## SEMESTER – I

### 2020-21 CURRICULAR PLANS

Subject Code: 20MCS102

Title: **Programming and Problem Solving Using Python**

Month	Topic to be covered
July	<b>Basics of Python Programming</b> -Features of Python, History of Python, The Future of Python, Writing and Executing First Python Program, Literal Constants, Variables and Identifiers, Data Types, Input Operation, Comments, Reserved Words, Indentation, Operators and Expressions, Expressions in Python, Operations on Strings, Other Data Types, Type Conversion.
Aug	<b>Decision Control Statements</b> -Conditional Branching Statements, Basic Loop Structures, Nested Loops, The break statement, The continue statement, The pass statement. The else statement used with loops. <b>Functions and Modules</b> - Function Definition, Function Call, Variable Scope and Lifetime, The return statement, More on Defining Functions, Recursive functions, Modules, Packages in Python, Standard Library Modules.
Sep	<b>Python Strings Revisited</b> -Concatenating, Appending and Multiplying Strings, String formatting operator, Built in String Methods and Functions, Comparing Strings, Regular Expressions. <b>Data Structures</b> - Sequence, Lists, Functional Programming, Tuple, Sets, Dictionaries.
Oct	<b>Classes and Objects</b> - Classes and Objects, Class Method and self Argument, Class variables and Object Variables, Public and Private Data Members, Private Methods, Calling a Class Method from Another Class Method, Built-in Class Attributes, Class Methods, Static Methods.
Nov	<b>Inheritance</b> - Inheriting Classes in Python, Types of Inheritance, Abstract Classes and Interfaces. <b>Error and Exception Handling</b> - Introduction to Errors and Exceptions, Handling Exceptions, Raising Exceptions, Built- in and User defined

**SEMESTER – I**

**2020-21 CURRICULAR PLANS**

Subject Code: **20MCS103**

Title: **Computer Organization**

<b>Month</b>	<b>Topic to be covered</b>
July	<p><b>Introduction and Overview:</b> Elementary Data Organization, Data Structures, Data Structure operations, Algorithms: Complexity, Time-Space Tradeoff.</p> <p><b>Preliminaries:</b> Mathematical Notation and Functions, Algorithmic Notation, Control Structures, Complexity of Algorithms, Other Asymptotic Notations, Sub Algorithms, Variables, Data Types. <b>Digital Logic Circuits:</b> Digital Computers, Logic Gates, Boolean Algebra, Map Simplification, Combinational Circuits, Flip-Flops, Sequential Circuits.</p>
Aug	<p><b>Register Transfer and Micro Operations:</b> Register Transfer Language, Register Transfer, Bus &amp; Memory Transfers, Arithmetic Micro Operations, Logic Micro Operations, Shift Micro Operations, Arithmetic Logic Shift Unit.</p> <p><b>Basic Computer Organization and Design:</b> Instruction Codes, Computer Registers, Computer Instructions, Timing &amp; Control, Instruction Cycle, Memory-Reference Instructions, Input-Output Interrupt.</p>
Sep	<p><b>Micro Programmed Control:</b> Control Memory, Address Sequencing, Micro Program Example, Design of Control Unit.</p> <p><b>Central Processing Unit:</b> General Register Organization, Stack Organization, Instruction Formats, Addressing Modes, Data Transfer and Manipulation, Program Control.</p>
Oct	<p><b>Computer Arithmetic:</b> Introduction, Addition and Subtraction, Multiplication Algorithm, Floating Point Arithmetic Operations, Decimal Arithmetic Unit, Decimal Arithmetic Operations.</p>
Nov	<p><b>Input-Output Organization:</b> Peripheral Devices, Input-Output Interface, Asynchronous Data Transfer, Modes of Transfer, Priority Interrupt.</p> <p><b>Memory Organization:</b> Memory Hierarchy, Main Memory, Auxiliary Memory, Associative Memory, Cache Memory.</p>

**SEMESTER – I**

**2020-21 CURRICULAR PLANS**

Subject Code: **20MCS104**

Title: **FORMAL LANGUAGES AND AUTUMATA**

Month	Topic to be covered
July	<p><b>Fundamentals, Introduction to Finite Automata:</b>                      Finite Automaton Model, Acceptance of Strings and Languages, Deterministic Finite Automata, Non-Deterministic Finite Automata, Transition Diagrams, NFA with E-Transitions, Acceptance of Languages, Conversions and Equivalence: Equivalence between NFA with and without E-Transitions, NFA to DFA Conversion, Minimization of FSM, Equivalence between two FSM's Finite Automata with Output-Moore and Mealy Machines.</p>
Aug	<p><b>Regular Languages:</b>                      Regular Sets, Regular Expressions, Identity Rules, Constructing Finite Automata for a given Regular Expression, Conversion of Finite Automata to Regular Expressions, Pumping Lemma of Regular Sets, Closure Properties of Regular Sets.</p>
Sep	<p><b>Grammar Formalism:</b>                      Regular Grammars-Right Linear and Left Linear Grammars, Context Free Grammar, Derivation Trees, Right most and Leftmost Derivation of Strings, Ambiguity in Context Free Grammars, Minimization of Context Free Grammars, Chomsky Normal Form, Greiback Normal Form, Pumping Lemma for Context Free Languages, Enumeration Properties of CFL.</p>
Oct	<p><b>Push Down Automata:</b>                      Push Down Automata (Definition and Model), Acceptance of CFL, Acceptance by Final State and Acceptance by Empty Stack and its Equivalence, Equivalence of CFL and PDA, Interco Version.</p>
Nov	<p><b>Turing Machine:</b>                      Turing Machine (Definition and Model), Design of Turing Machine, Computable Functions, Techniques of Turing Machine Construction.</p> <p><b>Undesirability:</b>                      Properties of Recursively Enumerable Languages, Universal Turing Machines (Without any Reference to Undesirable Problems), Undesirability of Post Correspondence Problem.</p> <p><b>The Chomsky Hierarchy:</b> Regular Grammars, Unrestricted Grammars, Context Sensitive Languages.</p>

**SEMESTER – II**

**2020-21 CURRICULAR PLANS**

Subject Code: **20MCS201**

Title: **Data Base Management Systems**

Month	Topic to be covered
July	<p><b>Databases and Database Users:</b> Introduction, An Example, Characteristics of the Database Approach, Actors on the Scene, Workers behind the Scene, Advantage of Using the DBMS Approach.</p> <p><b>Database System Concepts and Architecture:</b> Data Models, Schemas, and Instances, Three-Schema Architecture and Data Independence, Database Languages and Interfaces, The Database System Environment, Centralized and Client/Server Architectures for DBMSs.</p> <p><b>The Relational Data Model and Relational Database Constraints:</b> Relational Model Concepts, Relational Model Constraints and Relational Database Schemas, Update Operations, Transactions, and Dealing with Constraint Violations.</p>
Aug	<p><b>Basic SQL:</b> SQL Data Definition and Data Types, Specifying Constraints in SQL, Basic Retrieval Queries in SQL, INSERT, DELETE, and UPDATE Statements in SQL.</p> <p><b>More SQL:</b> More Complex SQL Retrieval Queries, Views (Virtual Tables) in SQL, Schema Change Statements in SQL.</p> <p><b>The Relational Algebra and Relational Calculus:</b> Unary Relational Operations: SELECT and PROJECT, Relational Algebra Operations from Set Theory, Binary Relational Operations: JOIN and DIVISION, Additional Relational Operations, Examples of Queries in Relational Algebra, The Tuple Relational Calculus, The Domain Relational Calculus.</p>
Sep	<p><b>Data Modeling Using the Entity-Relationship (ER) Model:</b> Using High-Level Conceptual Data Models for Database Design, Entity Types, Entity Sets, Attributes, Keys, Relationship Types, Relationship Sets, Roles, Structural Constraints, Weak Entity Types, ER Diagrams, Naming Conventions, Design Issues.</p> <p><b>The Enhanced Entity-Relationship (EER) Model:</b> Subclasses, Super classes, Inheritance, Specialization and Generalization, Constraints and Characteristics of Specialization and Generalization Hierarchies, Modeling of UNION Types Using Categories, A Sample UNIVERSITY EER Schema, Design Choices, Formal Definitions.</p> <p><b>Functional Dependencies:</b> Introduction, Basic Definitions, Trivial and Non-Trivial Dependencies, Closure of set of Dependencies, Closure of set of Attributes, Irreducible sets of dependencies.</p> <p><b>Further Normalization 1NF, 2NF, 3NF, BCNF:</b> Introduction, Nonloss decomposition and functional dependencies, 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> normal forms, Boyce-Codd Normal Form. Multivalued Dependency and Fourth Normal Form, Join Dependencies and Fifth Normal</p>
Oct	<p><b>Disk Storage, Basic File Structures and Hashing:</b> Secondary Storage Devices, Buffering of Blocks, Placing File Records on Disk, Operations on Files, Files of Unordered Records (Heap Files), Files of Ordered Records (Sorted Files), Hashing Techniques, Parallelizing Disk Access Using RAID Technology.</p> <p><b>Indexing Structures for Files:</b> Types of Single-Level Ordered Indexes, Multilevel Indexes, Dynamic Multilevel Indexes Using B-Trees and B<sup>+</sup>-Trees.</p>
Nov	<p><b>Introduction to Transaction Processing Concepts and Theory:</b> Introduction to Transaction Processing, Transaction and System Concepts, Desirable Properties of Transactions, Characterizing Schedules Based on</p>



	<p>Recoverability, Characterizing Schedules Based on Serializability, Transaction Support in SQL.</p> <p><b>Concurrency Control Techniques:</b> Two-Phase Locking Techniques for Concurrency Control, Concurrency Control Based on Timestamp Ordering, Multiversion Concurrency Control Techniques, Validation (Optimistic) Concurrency Control Techniques, Granularity of Data Items and Multiple Granularity Locking, Using Locks for Concurrency Control in Indexes.</p> <p><b>Distributed Databases:</b> Distributed Database Concepts, Types of Distributed Database Systems, Distributed Database Architectures, Data Fragmentation, Replication, and Allocation Techniques for Distributed Database Design.</p>
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## SEMESTER – II

### 2020-21 CURRICULAR PLANS

Subject Code: **20MCS105**

Title: **Formal Languages and Automata Theory**

Month	Topic to be covered
July	<p><b>Introduction to software Engineering-</b> The Evolution Role of software, Software, Quality of Software, Software Evolution. Software Engineering Process Models-prescriptive models, waterfall model, Incremental model, RAD model, Evolutionary process model.</p>
Aug	<p><b>Software Architecture</b> – Software Architecture, Data design, Architecture styles and patterns, Architectural design, mapping data flow into software architecture. Software Analysis Model- Requirements analysis, Data modeling concepts, Object-oriented modeling, Class- based modeling, flow-oriented modeling.</p>
Sep	<p><b>Software Design Engineering-</b></p> <p>Design within the context of software Engineering, Design process and quality, Design concepts, Design model, Pattern based software design. Software Testing Strategies – Static approach to software testing, Validation testing, System testing, Black-Box testing, White-Box testing, Object oriented testing models, Art of Debugging.</p>
Oct	<p><b>Software Metrics-</b> Framework for product metrics, Metrics for analysis, Design, Source code, testing and maintenance, Metrics for process and project domains. <b>Software Re-Engineering-</b> Software Re-Engineering, Reverse Engineering, Restructuring, Forward engineering.</p>
Nov	<p><b>Project Organization &amp; Responsibilities-,</b></p> <p>Project organizations, evolution of organizations. Process Automation-Automation building blocks, project environment. Project control &amp; Process Instrumentation- The seven core metrics, Management indicators, Quality indicators, Life cycle expectations, Programmatic software metrics, Metrics automation, tailoring the process, Process discriminates.</p>

**SEMESTER – II**

**2020-21 CURRICULAR PLANS**

Subject Code: **20MCS203**

Title: **Operating Systems**

Month	Topic to be covered
July	<p><b>Introduction:</b> What Operating Systems Do, Computer System Organization, Computer System Architecture, Operating System Structure, Operating System Operations, Process Management, Memory Management, Storage Management, Protection and Security, Kernel Data Structures, Computing Environments, Open Source Operating Systems.</p> <p><b>Operating-System Structures:</b> Operating System Services, User and Operating System Interface, System Calls, Types of System Calls, System Programs, Operating System Design and Implementation, Operating System Structure.</p> <p><b>Processes:</b> Process Concept, Process Scheduling, Operations on Processes, Inter Process Communication, Communication in Client-Server Systems.</p>
Aug	<p><b>Threads:</b> Overview, Multicore Programming, Multithreading Models, Thread Libraries, Implicit Threading, Threading Issues.</p> <p><b>Process Synchronization:</b> Background, The Critical Section Problem, Peterson’s Solution, Synchronization Hardware, Mutex Locks, Semaphores, Classic Problems of Synchronization, Monitors.</p> <p><b>CPU Scheduling:</b> Basic Concepts, Scheduling Criteria, Scheduling Algorithms, Thread Scheduling, Multiple Processor Scheduling.</p>
Sep	<p><b>Deadlocks:</b> System Model, Deadlock Characterization, Methods for Handling Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection, Recovery from Deadlock.</p> <p><b>Main Memory:</b> Swapping, Contiguous Memory Allocation, Segmentation, Paging, Structure of the Page Table, Intel 32 and 64-bit Architectures.</p> <p><b>Virtual Memory:</b> Background, Demand Paging, Copy-on-Write, Page Replacement, Allocation of Frames, Thrashing.</p>
Oct	<p><b>Mass Storage Structure:</b> Overview of Mass Storage Structure, Disk Structure, Disk Attachment, Disk Scheduling, Swap Space Management, RAID Structure.</p> <p><b>File System Interface:</b> File Concept, Access Methods, Directory and Disk Structure, File System Mounting, Protection.</p> <p><b>File System Implementation:</b> File System Structure, File System Implementation, Directory Implementation, Allocation Methods, Free Space Management, Efficiency and Performance, Recovery.</p>
Nov	<p><b>I/O Systems:</b> Hardware, Application I/O Interface, Kernel I/O Subsystem, Transforming I/O Requests to Hardware Operations, STREAMS, Performance.</p> <p><b>Protection:</b> Goals of Protection, Principles of Protection, Domain of Protection, Access Matrix, Implementation of the Access Matrix.</p> <p><b>Security:</b> The Security Problem, Program Threats, System and Network Threats, Cryptography as a Security Tool, User Authentication, Firewalling to Protect Systems and Networks.</p>

**SEMESTER – II**

**2020-21 CURRICULAR PLANS**

Subject Code: **20MCS204**

Title: **Computer Networks**

<b>Month</b>	<b>Topic to be covered</b>
July	<p><b>Introduction: Uses of Computer Networks:</b> Business Application, Home Applications, Mobile Users, Social Issues, <b>Network Hardware:</b> Local Area Networks, Metropolitan Area Networks, Wide Area Networks, Wireless Networks, Home Networks, Internet Works, <b>Network Software:</b> Protocol Hierarchies, Design Issues for the Layers, Connection Oriented and Connectionless Services, Service Primitives, The Relationship of Services to Protocols. <b>Reference Models:</b> The OSI Reference Model, The TCP/IP Reference Model, A Comparison of OSI and TCP/IP Reference Model, A Critique of the OSI Model and Protocols, A Critique of the TCP/IP reference model, <b>Example Networks:</b> The Internet, The Third Generation Mobile Phone Networks, Wireless LANs, RFID and Sensor Networks.</p> <p><b>Physical Layer: Guided Transmission Media:</b> Magnetic Media, Twisted Pair, Coaxial Cable, power lines, Fiber Optics.</p>
Aug	<p><b>Data Link Layer: Data Link Layer Design Issues:</b> Services Provided to the Network Layer, Framing, Error Control, Flow Control, <b>Error Correcting Codes, Error Detecting Codes, Elementary Data Link Protocols:</b> An Utopian Simplex Protocol, A Simplex Stop and Wait Protocol, A Simplex Protocol for a Noisy Channel, <b>Sliding Window Protocols:</b> A One Bit Sliding Window Protocol, A Protocol Using Go Back N, A Protocol using Selective Repeat</p> <p><b>The Medium Access Control Sub Layer: Ethernet:</b> Ethernet Cabling, Manchester Encoding, The Ethernet MAC sub layer Protocol, The Binary Exponential Backoff Algorithm, Ethernet. Performance , Switched Ethernet , Fast Ethernet , Gigabit Ethernet, 10-bit Gigabit Ethernet <b>Wireless Lans:</b> The 802.11 Protocol Stack, The 802.11 Physical Layer, The 802.11 MAC Sub Layer Protocol, The 802.11 Frame Structure, <b>Bluetooth:</b> Bluetooth Architecture, Bluetooth Applications, The Bluetooth Protocol Stack, The Bluetooth Radio Layer, The Bluetooth Link Layers, The Bluetooth Frame Structure, <b>DataLink Layer Switching:</b> Uses of Bridges, Learning Bridges, Spanning Tree Bridges, Remote Bridges, Repeaters, Hubs, Bridges, Switches, Routers and Gateways, Virtual LANs.</p>
Sep	<p><b>The Network Layer: Network Layer Design Issues:</b> Store and Forward Packet Switching, Services provided to the Transport Layer, Implementation of Connectionless Services, Implementation of Connection Oriented Services, Comparison of Virtual Circuit and Datagram Subnets. <b>Routing Algorithms:</b> The Optimality Principle, Shortest Path Routing, Flooding, Distance Vector Routing, Link State Routing, Hierarchical Routing, Broadcast Routing, Multicast Routing. <b>Internet Working:</b> How Networks Differ, How Networks can be Connected, Concatenated Virtual Circuits, Connectionless Internetworking, Tunneling, Internetwork Routing, Packet Fragmentation. <b>The Network Layer in the Internet:</b> The IP Version 4 Protocol, IP address, Internet Control Protocols, OSPF, The Internet Gateway Routing Protocol, BGP, The Exterior Gateway Routing Protocol.</p>
Oct	<p><b>The Transport Layer: The Transport Service:</b> Services provided to the Upper Layers, Transport Services Primitives, Berkeley Sockets. <b>Elements of Transport Protocols:</b> Addressing, Connection Establishment, Connection Release, Flow Control and Buffering, Multiplexing. <b>The Internet Transport Protocols:</b> Introduction to UDP: Remote Procedure Call, The Real Time</p>

	Transport Protocol. <b>The Internet Transport Protocols:</b> TCP Introduction to TCP, The TCP Service Model, The TCP Protocol, The TCP Segment Header, TCP Connection Establishment, TCP Connection Release, Modeling TCP Connection Management, TCP Sliding Window TCP Congestion Control, TCP Timer Management, Future of TCP.
Nov	<b>The Application Layer: DNS:</b> The Domain Name System: The DNS Name Space, Resource Records, Name Servers. <b>Electronic Mail:</b> Architecture and Services, The User Agent, Message Formats, Message Transfer, Final Delivery. <b>The World Wide Web:</b> Architecture Overview, Static Web Pages, Dynamic Web Pages and Web Applications, HTTP-The Hyper Text Transfer Protocol. <b>Streaming Audio and Video:</b> Digital Audio, Digital Video, Streaming Stored Media, Streaming Live Media, Real Time Conferencing. <b>Network Security:</b> Introduction to Cryptography, Public Key Algorithms - RSA.

### SEMESTER – III

#### 2020-21 CURRICULAR PLANS

Subject Code: **MCS 30116**

Title: **Cryptography And Network Securities**

Month	Topic to be covered
July	<p><b>Introduction:</b> Security trends, the OSI security architecture, security attacks, security services, security mechanisms, a model for network security.</p> <p><b>Classical encryption techniques:</b> Symmetric cipher model, Substitution techniques, Transposition techniques, Rotor machines, Steganography.</p> <p><b>Block cipher and the data encryption standard:</b> Block cipher principles, the strength of DES, Differential and linear cryptanalysis, Block cipher design principles.</p> <p><b>Confidentiality using Symmetric Encryption:</b> Placement of encryption function, Traffic confidentiality, key distribution, random number generator.</p>
Aug	<p><b>Public key cryptography and RSA:</b> Principles of public key crypto systems, The RSA algorithm</p> <p><b>Key management: Other public-key crypto systems:</b> Key management, diffie-Hellman key exchange.</p> <p><b>Message authentication and hash functions:</b> Authentication requirements, Authentication functions, message authentication codes, Hash functions, security of hash functions and MAC s.</p>
Sep	<p><b>Digital signatures and authentication protocols:</b> Digital signatures, Authentication protocols, Digital Signature standard</p> <p><b>Authentication Applications:</b> Kerberos, X.509 authentication service</p>
Oct	<p><b>Email Security:</b> Pretty good privacy, S/MIME</p> <p><b>IP security:</b> IP security overview, IP security architecture, Authentication header, Encapsulating security payload, combining security associations, key management.</p>

	<b>Web security:</b> Web security considerations, Secure Socket Layer and transport layer security, Secure electronic transaction.
Nov	<b>Intruders:</b> Intruders, Intrusion detection, password management <b>Malicious Software:</b> Viruses and related threats, virus counter measures, distributed denial of service attacks. <b>Firewalls:</b> Firewall Design principles, trusted systems, common criteria for information technology, security evaluation.

### SEMESTER – III

#### 2020-21 CURRICULAR PLANS

Subject Code: **MCS30316**

Title: **Data Mining and Data Warehousing**

Month	Topic to be covered
July	<b>Warehouse:</b> What is it, Who Need It, and Why?, Things to Consider, Managing the Data Warehouse, Getting ready for your project, Picking a target and moving forward, Project management benefits, The Scope statement, Work breakdown structure, Project estimating, Scope creep & tracking project's progress
Aug	Data Warehouse Design Methodology, The preferred Architecture, Alternate warehouse architectures, Data Marts and Star Schema Design, Fundamentals of ETL Architecture, Partitioning Data, Indexing Data. <b>Data mining</b> - Introduction, Data mining on what kind of data, Data mining functionalities classification of Data mining systems, Major issues in Data mining
Sep	<b>Mining Association rules in large databases</b> - Association rule mining, Mining single-Dimensional Boolean association rules from Transactional databases, Mining multi-Dimensional Association rules from relational Databases and Data Warehouses
Oct	<b>Classification and Prediction</b> - Introduction classification by decision tree induction, Bayesian Classification. Other classification methods, classification by back propagation, Prediction, classifier accuracy
Nov	<b>Cluster analysis</b> - Introduction, types of data in cluster analysis, a categorization of major clustering methods, partitioning methods, hierarchical methods <b>Density based methods:</b> DBSCAN, Grid-based method : STING, Model based clustering method: Statistical Approach, outlier analysis.

**SEMESTER – III**

**2020-21 CURRICULAR PLANS**

Subject Code: **MCS30416**

Title: **Web technologies**

Month	Topic to be covered
July	<p><b>Introduction:</b> Introduction to the Internet, WWW, Web Browsers, URL, MIME, HTTP, Security.</p> <p><b>XHTML:</b> Introduction, Editing XHTML, First XHTML Example, W3C XHTML Validation Service, Headings, Linking, Images, Special Characters and Horizontal Rules, Lists, Tables, Forms, Internal Linking, meta Elements.</p> <p><b>CSS:</b> Introduction, Inline Styles, Embedded Style Sheets, Conflicting Styles, Linking External Style, Positioning Elements,</p>
Aug	<p><b>JavaScript:</b> Introduction to Scripting, Control Statements I, Control Statements II, Functions, Arrays, Objects, Document Object Model, Events.</p> <p><b>XML and RSS:</b> Introduction, XML Basics, Structuring Data, XML Namespaces, Document Type Definition, W3C XML Schema Documents, XML Vocabularies, Extensible style sheet language and XSL Transformations, Document Object Model, RSS.s.</p>
Sep	<p><b>Ajax-Enabled Rich Internet Applications-</b> Introduction, Traditional Web Applications Vs. Ajax Applications, RIAs with Ajax, History of Ajax, Raw Ajax Example using the XMLHttpRequest Object, Using XML and the DOM, Creating a Full-Scale Ajax Enabled Application</p> <p><b>Web Servers(IIS and Apache):</b> Introduction, HTTP Transactions, Multitier Application Architecture, Client-Side Scripting Versus, Accessing Web Servers, Microsoft Internet Information, Apache HTTP Server, Requesting Documents.</p>
Oct	<p><b>Databases:</b> SQL, MYSQL,</p> <p><b>The Basics of Perl:</b> Origins and Uses of Perl, Scalars and their operations, Assignment Statements, Control Statements, Arrays, Hashes, References, Functions, Pattern Matching, File Input &amp; Output.</p> <p><b>Using Perl for CGI Programming:</b> CGI, CGI Linkage, Query String Format, The CGI.pm Module, Cookies.</p>
Nov	<p><b>PHP:</b> Introduction, PHP basics, String Processing and Regular Expressions, Form Processing and Business Logic, Connecting to a Database, Using Cookies, Dynamic Content, Operator Precedence Chart.</p> <p><b>JSF:</b> Introduction, Java Web Technologies, Creating and Running a Simple Program, JSF Components, Session Tracking</p>

**SEMESTER – III****2020-21 CURRICULAR PLANS**Subject Code: **MCS 305.316**Title: **Software Testing**

<b>Month</b>	<b>Topic to be covered</b>
July	<b>Introduction</b> : Some Software Failures, Testing Process, Terminologies , Limitations of Testing, The V Shaped Software Life Cycle Model <b>Software Testing Activities</b> : Levels of Testing : Unit Testing , Integration Testing, System Testing, Acceptance Testing; Debugging, Software Testing Tools, Software TestPlan
Aug	<b>Software Verification</b> : Verification Methods, SRS Document Verification , SDD Document Verification , Source Code Reviews, User Documentation Verification <b>Metrics and Models in Software Testing:</b> Software Metrics , Categories of Metrics, Object Oriented Metrics used in Testing, What should we measure during Testing?
Sep	<b>Functional Testing</b> : Boundary Value Analysis, Equivalence Class Testing, Decision Table Based Testing , Cause-Effect Graphing Technique
Oct	<b>Structural Testing</b> : Control Flow Testing, Data Flow Testing, Slice Based Testing, Mutation Testing
Nov	<b>Object Oriented Testing: What</b> is Object Orientation? , What IS Object Oriented Testing? , Path Testing, State based Testing, Class Testing.

**SEMESTER – IV****2020-21 CURRICULAR PLANS**Subject Code: **20MCS201**Title: **Dot Net Programmings**

<b>Month</b>	<b>Topic to be covered</b>
July	Getting started with visual basic 2012 Object Oriented Programming Errors and Exception Handling Windows Forms Windows Forms controls-1 Windows Forms controls-2
Aug	Getting started with c# 2012 Errors and Exception Handling Object Oriented Programming
Sep	Standard Controls Navigation Controls Validation Controls Login Controls
Oct	Data Base Controls Web Parts Controls

Nov	Master Pages and Themes Caching in ASP.net 4.5 DEveloping Web and WCF Services Introducing silver light 5
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**SEMESTER – IV**

**2020-21 CURRICULAR PLANS**

Subject Code: **MCS40216**

Title: **Mobile Computing**

<b>Month</b>	<b>Topic to be covered</b>
July	Introduction www wireless networks generation of Mobile systems
Aug	Mobile system Architectures GSM GPRS Mobility Management
Sep	IPV4 MOBILE IP
Oct	Mobile Transport Layer Traditional TCP Wireless TCP
Nov	Next Generation Networks File Systems Mobile Opearting Systems

**SEMESTER – IV**

**2020-21 CURRICULAR PLANS**

Subject Code: **MCS403.116**

Title: **Cloud Computing**

<b>Month</b>	<b>Topic to be covered</b>
July	Era of Cloud Computing Introducing Virtualization
Aug	Cloud Computing services Open Source Cloud Implementation and Administration
Sep	Application Architecture for cloud Cloud Programming
Oct	Risks, Cosequences and costs for cloud Computing AAA Administration for clouds
Nov	Application Development for Cloud Mobile Cloud Computing



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**DEPARTMENT OF COMMERCE(P.G)**

**SEMESTER – I**

**2020-2021 CURRICULAR PLAN**

Subject Code: CO111 .Title: **MANAGEMENT THEORY AND PRACTICE**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Dec-2020	I	Introduction: Management, Concept, Significance, Levels, Skills, Functions and Principles - Management as an Art, Science and Profession – Social responsibilities of business.
Jan - 2021	II	Planning: Nature, Purpose, Process of Planning, Types of Plans – Premising & Forecasting, Decision Making: Concept, Process, Management By Objectives: Concepts, Process. Advantages and Limitations.
Feb-2021	III	Organizing: Process - Formal and Informal Organizations - Departmentation: Methods of Departmentation, Span of Control; V.A. Graicuna’s Theory - Factors Determining Span of Control - Delegation: Concept, Process, Advantages and Principles of Effective Delegation; Decentralization: Factors, Advantages and Disadvantages. Line and Staff: Concept- Reasons for Conflicts between Line and Staff and Measures to Overcome; Committees, Types of Committees.
Mar-2021	IV	Staffing: Nature and Importance of Staffing, Elements of Staffing. Directing: Meaning, Assumptions of Human Behavior by Douglas McGregor, Edgar Shien and Elton Mayo.
April-21	V	Motivation: Significance, Process-Theories of Maslow, Herzberg, Porter and Lawler; Leadership: Trait Approach, Leadership Styles, Managerial Grid; Likert’s Four Systems of Leadership-Communication: Importance, Process, Barriers, Measures to overcome Barriers of an Effective Communication. Controlling: Basis - Control Process, Requirements of adequate Control - Techniques of control, PERT and CPM.

**DEPARTMENT OF COMMERCE(P.G)****SEMESTER – I****2020-2021 CURRICULAR PLAN**Subject Code: CO112 .Title: **BUSINESS ECONOMICS**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Dec-2020	I	Introduction – Definition, Nature and Scope of Managerial Economics; Economic Goals of a Business Firm: Profit Maximization Vs Wealth Maximization, Sales Revenue Maximization.
Jan - 2021	II	Consumer Equilibrium under Cardinal and Ordinal Utility - Demand Analysis – Law of Demand – Demand Function and determinants of Market Demand – Concept of Price, Cross, Income and Promotional Elasticity; their measurement and relevance in Managerial Decision – Making Methods of Demand Forecasting.
Feb-2021	III	Firm's Equilibrium – Iso-quant and Iso-cost analysis; Least – Cost Combination of inputs – The law of Diminishing Marginal Returns in Production – Production Function – Total Product, Marginal and Average Product Curves, their inter – relationships – Cobb – Douglas Production Function and its relevance - Scale and proportion, Cost Functions – Derivation of total, marginal and average cost functions – Long run cost curves
Mar-2021	IV	Market Structures and their characteristics – Pricing and output Decisions of firm under different Market structures – Perfect Competition, Pure Monopoly, Oligopoly, Monopolistic / Imperfect Competition under short and long runs. Discriminative Monopoly Regulation of Monopoly through Prices and Taxes.
April-21	V	Pricing Practices of Firms – Objectives of Pricing Policy – Approaches to Pricing New Products; Skimming Price, Penetration Pricing, Costs Plus Pricing, Managerial Cost Pricing, Psychological Pricing, Odd Number Pricing, Regulated Pricing, Predatory Pricing.

**DEPARTMENT OF COMMERCE (P.G)**

**SEMESTER – I**

**2020-2021 CURRICULAR PLAN**

Subject Code: **CO113**. Title: **BUSINESS ENVIRONMENT**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Dec-2020	I	Business Environment: Components and Significance - Nature of Business Environment - Techniques of Environmental Scanning and Monitoring – Economic Scope – Cultural, Political, Technological and External Factors Influencing Business Environment –Challenges- Economic systems.
Jan - 2021	II	Economic Environment of Business: Significance for Business – Economic Planning – Objectives and Achievements; Government policies – Industrial policy of 1991; Fiscal policy; Economic Reforms and LPG
Feb-2021	III	Political and Legal Environment of Business: Political Institutions – Legislature, Executive and Judiciary – Changing Dimensions of Legal Environment in India; Patents Act-1970, SICA-1985, SEZ Act-2005.
Mar-2021	IV	Cultural and Technological Environment: Elements of Socio – Cultural Environment; Impact on Business – Social Audit - Technological Environment in India; Technology Transfer – Technology Policy.
April-21	V	International and Recent Issues in Environment: Multinational Corporations; Foreign Collaborations and Indian Business; International Economic Institutions: WTO, World Bank, IMF and their importance to India; Foreign Trade Policies.

**DEPARTMENT OF COMMERCE(P.G)****SEMESTER – I****2020-2021 CURRICULAR PLAN**

Subject Code: CO114 .Title: **ENTREPRENEURSHIP DEVELOPMENT & BUSINESS MODELS**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Dec-2020	I	Evolution, Characteristics, Types, Functions of Entrepreneur - Factors influencing entrepreneurship - Barriers to entrepreneurship - Growth of Entrepreneurship in India - Women entrepreneurship in India - Role of Entrepreneurship in Economic Development
Jan - 2021	II	Idea Generation and Opportunity Assessment: Importance of Ideas in Entrepreneurship - Sources of New Ideas – Techniques for generating ideas- Steps in assessing business potential of an idea- Opportunity Recognition- sources and process- Steps in tapping opportunity.
Feb-2021	III	Financing Of Enterprises: Need for Financial Planning- Sources of finance, Capital Structure, Term-loan, - Sources of Short-Term Finance, Venture capital, Export Finance,- Institutional Finance To Entrepreneurs, - Preparation of Business Plans.
Mar-2021	IV	Business Model: Definition -- Generating a business model – Nine building blocks of a canvas (Value Propositions; Key Activities; Key Partners; Key Resources; Customer Relationships; Customer Segments; Channels; Cost Structure and Revenue Streams)
April-21	V	Business Excellence Models: Core values and concepts – Business Excellence frameworks of USA (MBNQA); Europe (EFQM) and CII-EXIM Model of India.

**DEPARTMENT OF COMMERCE(P.G)****SEMESTER – I****2020-2021 CURRICULAR PLAN**Subject Code: CO115. Title: **INFORMATION TECHNOLOGY FOR BUSINESS**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Dec-2020	I	Information Technology (IT) in Business Environment: Business in the Information Age - Pressures and Responses, Why do we need to know about Information Technology, What is an Information System, Capabilities of Information Systems - Basic concepts of Information Systems, organizations - Structures and IT support - IT support at different organizational levels, Managing IT in organizations.
Jan - 2021	II	IT Infrastructure: Computer Hardware - Input Technologies, Output Technologies - Computer Software - Types of software, general functions of Operating system, Types of application software - Managing organizational Data and Information - Basics of Data arrangement and Access, Traditional file Environment. Databases: Modern Approach, Database Management Systems - Logical Data Models, Data Warehouse. Telecommunications systems and Networks - Network communications software, Internet: Services provided by Internet, World Wide Web, Intranets and Extranets.
Feb-2021	III	Information Systems to Support Business Functions: Transaction Processing Systems, Accounting and Finance Systems, Production Management Systems, Human Resources Management Systems, Integrated Information Systems and Enterprise Resource Planning, Inter- organizational/Global Information Systems. Electronic Commerce - Types, Benefits of E- Commerce, Infrastructure and E-commerce support, Legal and ethical issues in E-commerce. Computer-based Supply chain management and IS Integration: IT supply chain support and systems Integration: Enterprise Resource Planning.
Mar-2021	IV	Data, Knowledge and Decision Support: Decision making and Decision support systems, Enterprise Decision support, Knowledge Management and Organizational Knowledge bases. Intelligent systems in Business: Expert systems, Intelligent Agents.
April-21	V	Strategic Advantage and Information Technology: Strategic Organizations in the Information Age, Business Process Re-engineering, Virtual corporations and Information Technology - Implementing IT: Ethics, Impacts and Society, Ethical Issues, Impact of IT on Organizations and Jobs, on Individuals at Work, Societal Impact and Internet Communities, Protecting Information Systems.

**DEPARTMENT OF COMMERCE(P.G)****SEMESTER – I****2020-2021 CURRICULAR PLAN**

Subject Code: CO116 .Title: **QUANTITATIVE TECHNIQUES FOR BUSINESS DECISIONS**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Dec-2020	I	Matrices, Differentiation, Permutations and combinations: Matrices –Basic concepts ,Solving system of equations with Cramer’s rule and Inverse method - Differentiation and integration of simple functions and their applications- Permutations and Combinations.
Jan - 2021	II	Correlation and Regression: Correlation: Types of Correlation - Simple and Rank Correlation coefficient in the case of two variables- Regression: Meaning and importance of Regression Analysis. Estimation of Lines of Regression in the case of two variables.
Feb-2021	III	Probability: Concept of Probability: Definitions of Probability, Addition Theorem of Probability, Conditional Probability and Multiplication theorems of Probability, Baye’s Theorem of Probability and its Applications.
Mar-2021	IV	Theoretical distributions: Binomial Distribution, Poisson distribution and Normal distribution – their Properties and Applications
April-21	V	Testing of Hypothesis: Concept of Testing of Hypothesis, Types of Errors, Standard deviations and Proportions, Z- test for Means, T- test, F-test for two variances and Chi-Square test for goodness of fit and independent of Attributes and their Applications – Confidence intervals.

**DEPARTMENT OF COMMERCE(P.G)**

**SEMESTER – II**

**2020-2021 CURRICULAR PLAN**

Subject Code: CO211. Title: **FINANCIAL ACCOUNTING AND PACKAGES**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
MAY-2021	I	Introduction to Accounting: Concept – Importance and scope – Generally Accepted Accounting Principles – Objectives, Nature and Scope of Financial Accounting. – Cost Accounting – Management accounting.
JUN - 2021	II	Preparation of Financial statements: Income statement and Balance sheet – Inventory valuation (Theory) and Depreciation (Theory).
JUL-2021	III	Financial Analysis: Objectives – Ratio Analysis – Funds Flow & Cash Flow Analysis.
AUG-2021	IV	Management Accounting: Marginal Costing – CVP analysis – Standard costing and Variance analysis.
SEP-2021	V	Accounting Package- Tally (Theory and practical)

**DEPARTMENT OF COMMERCE(P.G)****SEMESTER – II****2020-2021 CURRICULAR PLAN**Subject Code: CO212. Title **FINANCIAL MANAGEMENT**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
MAY-2021	I	Introduction: Nature, Scope and Objectives of Financial Management: Finance Function–Profit Goal vs. Wealth Goal Maximization - Financial Manager in Modern business Organizations (Theory)
JUN - 2021	II	Investment decision: Capital Budgeting process –Methods of appraisal: Traditional Techniques and Discounted Cash Flow Methods – NPV vs. IRR - Capital rationing (Theory & problems)
JUL-2021	III	Financing decisions: Concept of leverage – Types of Leverages – EBIT – EPS Analysis – Capital Structure – Theories of Capital Structure – Net Income approach – Net Operatingincome approach – Traditional view – MM Hypothesis Cost of Capital: Types of Cost of Capital - Weighted average Cost of capital. Capital Structure Determinants.(Theory & problems)
AUG-2021	IV	Dividend decisions: Kinds of dividends, Dividend Policy types, Dividend Theories –Walter’s Model – Gordon’s Model – M-M Hypothesis (Theory & problems)
SEP-2021	V	Working Capital Management: Meaning, Significance, Types of Working capital, Determinants of working capital, and Methods of Measuring working Capital Requirements - Operating cycle - Financing of Working Capital-Management of Cash, Receivables, and Inventory (Theory & problems)



**DEPARTMENT OF COMMERCE(P.G)**

**SEMESTER – II**

**2020-2021 CURRICULAR PLAN**

Subject Code: CO213. Title: **HUMAN RESOURCE MANAGEMENT**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
MAY-2021	I	Human Resource Management: Nature and significance, functions of HRM, Qualities and Role of HR Manager, HRM Model, HRM in a changing Environment.
JUN - 2021	II	Human Resource Planning: Objectives, process, factors affecting HR Planning, Requisites for successful HR Planning, Recruitment – Factors influencing, Sources of Recruitment – E- Recruitment-Selection Process – Placement, induction and Socialization – Promotion and Transfers
JUL-2021	III	Employee Training: Significance – Identification of Training Needs – Employee Training Methods – Executive Development Methods – Evaluation of Training and Development Programs – Methods of Evaluation -Limitations to its effectiveness
AUG-2021	IV	Performance Appraisal: Scope & Significance – Methods of Appraisal – Limitations of Appraisal - Career Planning and Development – Counseling- Mentoring-Coaching
SEP-2021	V	Wage and Salary Administration: Wage Structure and Policy – Wage Differentials – Wage Payment Methods – Incentives – Fringe Benefits –Industrial Relations: Causes of Disputes and Settlement - Role of State in Industrial Relations - Collective Bargaining -Employee Participation in Management - Quality of Work Life.

**DEPARTMENT OF COMMERCE(P.G)**

**SEMESTER – II**

**2020-2021 CURRICULAR PLAN**

Subject Code: CO214. Title: **MARKETING MANAGEMENT**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
MAY-2021	I	Marketing-Concepts-Approaches to the Study of Marketing – Functions of Marketing-Marketing Environment.
JUN - 2021	II	Consumer Behavior – Factors affecting Consumer Behavior-Market Segmentation –Market Targeting and Positioning – Marketing Information System and Marketing Research.
JUL-2021	III	Marketing Mix: Product Planning – New Product Development – Product Life Cycle– Branding &Packaging – Product line- Product Mix Management- Product Vs Service.
AUG-2021	IV	Pricing and Distribution: Pricing Objectives – Methods and Strategies ; Channels of distribution – Channel Selection and Management -Retail Management.
SEP-2021	V	Promotion: Promotion Mix-Personal Selling-Advertising - Sales Promotion, Publicity and Public Relations – Direct Marketing; Promotional strategies- Web Marketing – Integrated Marketing Communications.

**DEPARTMENT OF COMMERCE(P.G)**

**SEMESTER – II**

**2020-2021 CURRICULAR PLAN**

Subject Code: CO215: Title: **BUSINESS RESEARCH METHODS**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
MAY-2021	I	Introduction-Importance of Research, Types of research , Research Process-Problem Identification- Formulation-Classification, Concept and Construction of Hypothesis – Steps in Testing Hypothesis.
JUN - 2021	II	Research Design-Meaning, purpose and Principles – Types of Research Design – Exploratory- Descriptive- Experimental, Data Collection-Sources of Data-Methods of Data Collection- Questionnaire Design and Pre Testing of Questionnaire.
JUL-2021	III	Sampling & Sampling Designs-Determination of Sample Size- Census Survey Vs Sample Survey –Advantages of Sampling- Sampling Methods-Probability Sampling-Non Probability Sampling.
AUG-2021	IV	Data Tabulation-Analysis and Interpretation: Tabulation of data and general rules of tabulation Graphic and Diagrammatic Representation of Data-ANOVA-One way and Two way classification.
SEP-2021	V	Research Report Writing and Presentation: Concept, Purpose, Guidelines for Research Report Writing –Steps in Report Writing- Layout of Report-Types of Research Reports-Presentation of Research Report.

**DEPARTMENT OF COMMERCE (P.G)****SEMESTER – II****2020-2021 CURRICULAR PLAN**Subject Code: **CO216.**Title: **E-COMMERCE**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
MAY-2021	I	History of E-commerce and Indian Business Context: origin of E-commerce – Traditional vs. E-Commerce - Internet and World Wide Web- Business Models for e-Commerce-B2C, B2B, C2C & C2B, Merits and Limitations- Advantages and Disadvantages of E-commerce - Introduction to E-business -E-commerce vs E-business
JUN-2021	II	Technologies of the World Wide Web- Internet client-server application-Telnet, PTP, IRC, Chat, ICQ & MIME, Networks & Internet :communication switching -Network routers-URL-IPv6-TCP web site-Website goals & Objectives Strategies for website Development-ISP Broadband Technologies- Hypertext- JavaScript and XML
JUL-2021	III	E-Marketing- Traditional Marketing, Online Marketing- Advantages of online Marketing - Advertisements in E-commerce-various means of advertising- advertisement strategies-Intelligent Agents.
AUG-2021	IV	CRM-Traditional methods-Technology support-E-CRM-Customer Life Cycle- CRM Capabilities and Customer Life Cycle-Data Mining in CRM - e-Supply Chain- Old ways of Managing supply and information flow-new ways of managing supply chain- several ways to reduce inventory- Real time benefits of e-Supply Chain-objectives of SCM -E-supply chain Components and architecture-Major trends in E-SCM

**DEPARTMENT OF COMMERCE(P.G)****SEMESTER – III****2020-2021 CURRICULAR PLAN**Subject Code: **CO301.** Title: **FINANCIAL ACCOUNTING AND PACKAGES**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
OCT-2021	I	Introduction to Accounting: Concept – Importance and scope – Generally Accepted Accounting Principles – Objectives, Nature and Scope of Financial Accounting. – Cost Accounting – Management accounting
NOV-2021	II	Preparation of Financial statements: Income statement and Balance sheet – Bank Reconciliation Statement – Inventory valuation and Depreciation.
DEC-2021	III	Financial Analysis: Objectives – Ratio Analysis – Funds Flow & Cash Flow Analysis.
JAN-2022	IV	Management Accounting: Marginal Costing – CVP analysis – Standard costing and Variance analysis
FEB-2022	V	Accounting Package- Tally (Theory and practical)

**DEPARTMENT OF COMMERCE(P.G)**

**SEMESTER – III**

**2020-2021 CURRICULAR PLAN**

Subject Code: CO302. Title: **BUSINESS COMMUNICATION**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
OCT-2021	I	Business Correspondence: Significance - Formal, informal and semiformal correspondence – Describing company activities and structures – Describing job responsibilities – Written Correspondence - Differences between formal and informal writings – Use of formal vocabulary and functional language in business letter writing – Planning effective business letters and responses – e-mail writing skills, call taking etiquette/skills.
NOV-2021	II	Business Correspondence: Significance - Formal, informal and semiformal correspondence – Describing company activities and structures – Describing job responsibilities – Written Correspondence - Differences between formal and informal writings – Use of formal vocabulary and functional language in business letter writing – Planning effective business letters and responses – e-mail writing skills, call taking etiquette/skills.
DEC-2021	III	Business Presentations: Basic presentation techniques – Use of information in presenting product features – Explaining technical features for simplification; Giving and interpreting numerical data, Business abbreviations and acronyms - Oral and written conventions for expressing numerical information in English.
JAN-2022	IV	Business Reporting: Effective presentation of oral and written instructions – Presenting and describing company information: Vocabulary of describing graphical and numerical information – Summarizing important information concisely.
FEB-2022	V	Feedback and Evaluation: Giving feedback to others - Use of questions in selfassessment elicitation – Functional language of agreement/disagreement and opinion giving – good/bad feedback – Motivating others – Use of conditionals to discuss future possibilities – Discourse strategies for effective relationship – team building skills.

**DEPARTMENT OF COMMERCE(P.G)****SEMESTER – III****2020-2021 CURRICULAR PLAN**Subject Code: CO303. Title: **CORPORATE ACCOUNTING**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
OCT-2021	I	Corporate Financial Accounting: Objectives-Scope - Role of Corporate Accountant Analysis and Interpretation of Financial Statements - Inflation Accounting.
NOV-2021	II	Valuation of Shares: Need for Valuation of Shares – Factors Effecting Value of Shares – Methods of Valuation – Impact of Earnings on Share Valuation – Role of Fundamental Analysis and Technical Analysis in Share Valuation – Fair Value of a Share – Buy Back of Equity Shares.
DEC-2021	III	Financial Reporting: Concept, Objectives – Users of Financial Reporting and Specific Purpose of Report – Difficulties in Corporate Reporting– Interim Reporting – Problems –Improving Financial Reporting – Value Added Statements – Disclosure of Value Added Statements – Economic Value Added.
JAN-2022	IV	Consolidated Financial Statements: Definition of Parent or Holding and its Subsidiary – Need for Consolidated Financial Statement – Preparation of Consolidated Balance Sheet of a Holding Company with one Subsidiary – Consolidation of Profit of Loss Account –Consolidated Statement of Changes in Financial Position.
FEB-2022	V	New trends in Accounting: Human Resource Accounting - Environmental Accounting, Social Responsibility Accounting etc.

**DEPARTMENT OF COMMERCE(P.G)****SEMESTER – III****2020-2021 CURRICULAR PLAN**Subject Code: CO304. Title: **DIRECT TAXES**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
OCT-2021	I	Income Tax Act 1961: Basic Concepts, Income, Agriculture Income - Residential Status and Incidence of Tax - Incomes Exempt from Tax u/s 10.
NOV-2021	II	Heads of Income of Individuals; Salaries- income from house property and gain from business or profession, capital gains.
DEC-2021	III	Head of income from other sources, clubbing up of income set off and carry forward of losses, deductions from gross total income, computation of total income and tax liability.
JAN-2022	IV	Assessment of Individuals, Hindu Undivided Families, Firms, Association of Persons, Cooperative Societies and Companies.
FEB-2022	V	Tax Administration; Income Tax Authorities, Assessment procedure, collection and recovery of tax, refunds, penalties and procedures, appeals and revisions.

**DEPARTMENT OF COMMERCE (P.G)****SEMESTER – III****2020-2021 CURRICULAR PLAN**Subject Code: CO305. Title: **ADVANCED BANKING**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
OCT-2021	I	Central Banking Concept – Central Banking Policy in Developed and Developing Economies – Functions – Note issues – Banker to the Government; Banker to Commercial Banks – Credit Control – Techniques -Structure and Organization of RBI – Role of RBI as Central Bank.
NOV-2021	II	Structure and Organization of Central Bank in India, USA, UK and EU–Objectives – Central Banking Policy in Developed and Less Developed Countries – A Critical Study of Theory and Practice of Central Banking in India, USA and UK.
DEC-2021	III	Development of Commercial Banking in UK, USA and India – Study of Nature and Structure of Commercial Banking in India and Abroad – Theories of Asset Management – Commercial Banks, Recent Developments in Commercial Banking in USA, UK and India.
JAN-2022	IV	Economic Stabilization Policy: Objectives of Monetary Policy – Choosing Between Conflicting Objectives – Monetary and Fiscal Policies and Economic Stabilization – Interdependence of Monetary and Fiscal Policies – Debt Management Policy.
FEB-2022	V	Emerging Trends – Technological Advancement in Banking Sector –Challenges and Issues – Next Generation Banking.

**DEPARTMENT OF COMMERCE(P.G)****SEMESTER – III****2020-2021 CURRICULAR PLAN**Subject Code: CO306: Title: **INSURANCE AND RISK MANAGEMENT**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
OCT-2021	I	Risk Management process – Risk Identification, Evaluation -Risk Management Techniques, Selecting and Implementing Risk Management Techniques – Types of Risks – Insurance and risk.
NOV-2021	II	Commercial Liability Insurance – Commercial Risk Management Applications – Property – Liability – Commercial Property Insurance, Different policies and contracts – Business Liability and Risk Management – Workers compensation and Risk Financing
DEC-2021	III	Property and liability Insurance Coverage – Personal Risk Management Applications–Property – Liability – Risk Management for Auto Owners – Risk Management for Home Owners.
JAN-2022	IV	Risk Management Applications – Loss of Life – Loss of Health – Retirement Planning and Annuities – Employee Benefits – Financial and Estate Planning.
FEB-2022	V	Risk Management Scenario- Functions and organisation of Insurers – Government Regulation of Insurance Sector – IRDA – Privatization of Insurance – Changes in Insurance Acts – Insurance Intermediaries – Insurance Product pricing and Claim valuation – Bank Assurance – Foreign Insurers in India

## DEPARTMENT OF ENGLISH

### SEMESTER – I

#### CURRICULAR PLAN

Subject Code: **ENGT11B**

Title: **A COURSE IN COMMUNICATION AND SOFT SKILLS**

Month	Unit No.	Topic to be covered
Nov-2021 (7)	I	<b>Listening Skills</b> – 1. Importance of Listening 2. Types of Listening
Dec-2021	I II III	<b>Listening Skills</b> – Barriers to Effective Listening <b>Speaking Skills</b> – Sounds of English: Vowels and Consonants <b>Grammar</b> –Concord and Modals
Jan - 2022	II III	<b>Speaking Skills</b> – Word Accent and Intonation <b>Grammar</b> – Articles, Prepositions and Tenses (Present/Past/Future)
Feb-2022	III IV	<b>Grammar</b> – Question Tags, Sentence Transformation (Voice, Reported Speech & Degrees of Comparison) and Error Correction <b>Writing</b> – Punctuation and Spelling
Mar-2022	V	<b>Soft Skills</b> –Positive Attitude and Emotional Intelligence, Telephone Etiquette

### SEMESTER – III

#### CURRICULAR PLAN

Subject Code: **ENG 301C**

Title : **ENGLISH PRAXIS - III**

Month	Unit No.	Topic to be covered
Nov-2021	I	<b>Speech:</b> Tryst with Destiny <b>Skills:</b> Greetings Introductions
Dec-2021	II	<b>Speech</b> 1. Yes, We Can <b>Interview</b> 2. A Leader Should Know How to Manage Failure <b>Skills</b> 3. Requests
Jan-‘22	III	<b>Interview</b> 1. Nelson Mandela's Interview <b>Skills</b> 2. Asking and Giving Information 3. Agreeing and Disagreeing
Feb-‘22	IV	Interview 1. JRD Tata's Interview With T.N.Ninan <b>Skills</b> 2. Dialogue Building 3. Giving Instructions/Directions
Mar-‘22	V	<b>Speech</b> 1. You've Got to Find What You Love Steve Jobs <b>Skills</b> 2. Debates 3. Descriptions 4. Role Play



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**DEPARTMENT OF ENGLISH**

**SEMESTER – II  
CURRICULAR PLAN**

Subject Code: **ENGT21B**

Title: **A COURSE IN READING & WRITING SKILLS**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
June -'22	I	How to Avoid Foolish Opinions
	I	Vocabulary: Conversion of Words
	III	Upagupta
	V	An Astrologer's Day
July-'22	I	One Word Substitutes,
	I	Collocations
	III	The Night Train at Deoli
	IV	Coromandel Fishers
	IV	Notices, Agendas and Minutes
Aug-'22	II	The Doll's House
	II	Ode to the West Wind
	II	Florence Nightingale
	II	Skimming and Scanning
	IV	Expansion of Ideas
Sep-'22	III	Reading Comprehension
	V	Note Making/Taking
	V	Curriculum Vitae and Resume
	V	Letters
	V	E-Correspondence

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**DEPARTMENT OF ENGLISH**

**SEMESTER – II  
CURRICULAR PLAN**

Subject Code: **SDCENGT01**

Title: **ENRICHING COMMUNICATION SKILLS**

Month	Unit No.	Topic to be covered
June -'22	I	<b>COMMUNICATION PROFICIENCY</b> 1. Formal and Informal conversations 2. Contextual conversations 3. Idiomatic Expressions/ Cliché/foreign Expression/ Catch Phrass
July-'22	II	<b>EMPLOYABILITY SKILLS</b> 1. Interview etiquette 2. Group Discussions/Debates/Extempore 3. Oral presentation
Aug-'22	III	<b>WRITING PROFICIENCY</b> 1. Report Writing – Technical, Non-Technical 2. Essay Writing – Expository, Descriptive, Narrative, Argumentative 3. Creative Writing – Introduction to Fiction (Novel & Short stories) & Nonfiction (Prose, Poetry & Drama), Anecdotes, Memoirs.

**A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYURU**

**DEPARTMENT OF TELUGU**

**SEMESTER – I  
2021-2022 CURRICULAR PLAN**

Subject Code: **TELT11A**

Title: **GENERAL TELUGU**

Month	Unit No.	Topic to be covered
Nov-2021	I	రాజనీతి
Dec-2021	II	దక్షయజ్ఞం
	III	ధౌమ్య ధర్మోపదేశం
Jan - 2022	IV	మధుర స్నేహం సీతా రావణ సంవాదం

	V	
Feb-2022		సంధులు, సమాసాలు, అలంకారాలు
Mar-2022		ఛందస్సు

**SEMESTER – II  
CURRICULAR PLAN**

Subject Code: **TELT21A**

Title: **GENERAL TELUGU**

Month	Unit No.	Topic to be covered
June -'22	I	1. ఆధునిక కవితవ్యం 2. కన్యక 3. కొండవీడు 4. మాతృ సంగీతం
July-'22	II	5. తెలుగు కథానిక 6. భయం (కథ) 7. స్వేదం ఖరీదు (కథ)
Aug-'22	III	8. తెలుగు నవల - పరిచయం 9. రథ చక్రాలు - నవల 10. రథ చక్రాలు - సమీక్షా వ్యాసం
Sep-'22	IV	11. తెలుగు నాటకం పరిచయం 12. యక్షగానం - నాటిక / నాటకం 13. అప్పరూప కళారూపాల విధ్వంసక దృశ్యం - "యక్షగానం" - సమీక్షావ్యాసం 14. తెలుగు సాహిత్య విమర్శ 15. విమర్శ - స్వరూప స్వభావాలు , ఉత్తమ విమర్శకుడు
	V	

**SEMESTER – III**

**2021-2022 CURRICULAR PLAN**

Subject Code: **TEL - 301**

Title: **GENERAL TELUGU - II**

Month	Unit No.	Topic to be covered
Nov-2021	I	వ్యక్తికరణ నైపుణ్యాలు 1. భాష - ప్రాథమిక అంశాలు:- భాష - నిర్వచనం, లక్షణాలు ఆవశ్యకత, ప్రయోజనాలు 2. 'వర్ణం - పదం - వాక్యం', వాక్య లక్షణాలు, సామాన్య - సంయుక్త - సంశ్లిష్ట వాక్యాలు. 3. భాషా నిర్మాణంలో 'వర్ణం - పదం - వాక్యం' ప్రాధాన్యత
Dec-2021	II	సృజనాత్మక రచన 4. కవితా రచన: - ఉత్తమ కవిత - లక్షణాలు 5. కథా రచన: - ఉత్తమ కథ - లక్షణాలు 6. వ్యాస రచన: - ఉత్తమ వ్యాసం - లక్షణాలు

Jan-'22	III	<p>అనువాద రచన</p> <p>7. అనువాదం:- నిర్వచనం, అనువాద పద్ధతులు.</p> <p>8. అనువాద సమస్యలు:- భౌగోళిక, భాషా, సాంస్కృతిక సమస్యలు, పరిష్కారాలు.</p> <p>9. అభ్యాసము:- ఆంగ్లం నుండి తెలుగునకు ఒక పేరాను అనువదించటం</p>
Feb-'22	IV	<p>మాధ్యమాలకు రచన - I:- ముద్రణ / ప్రింట్ మీడియా</p> <p>10. ముద్రణా మాధ్యమం / అచ్చు :- పరిచయం, పరిధి, వికాసం.</p> <p>11. వివిధ రకాల పత్రికలూ పరిశీలన, పత్రికా భాష, శైలి, వైవిధ్యం.</p> <p>12. పత్రికా రచన: - వార్తా రచన, సంపాదకీయాలు, సమీక్షలు - అవగాహన.</p>
Mar-'22	V	<p>మాధ్యమాలకు రచన - II:- ప్రసార మాధ్యమం / ఎలక్ట్రానిక్ మీడియా</p> <p>13. ప్రసార మాధ్యమాలు:- నిర్వచనం, రకాలు, విస్తృతి, ప్రయోజనాలు.</p> <p>14. శ్రవణ మాధ్యమాలు:- రచన: - రేడియో రచన, ప్రసంగాలు, నాటికలు, ప్రసార సమాచారం.</p> <p>15. దృశ్య మాధ్యమాలు - రచన: - వ్యాఖ్యానం / యాంకరింగ్, టెలివిజన్ రచన.</p>

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**DEPARTMENT OF HINDI**

**SEMESTER – I**

**CURRICULAR PLAN**

Subject Code:**HINTIIA**

Title: **General Hindi**

Month	Unit No.	Topic to be covered	Remarks
Nov-2021 (7)	I IV	1. साहित्यकीमहत्ता 2. व्याकरण	
Dec-2021	I II III	2.सच्चीवीरता 1.मुक्तिधन अनुवाद	
Jan - 2022	II	2.गूढडसाई 3.उसनेकहाथा	
Feb-2022	I IV	मित्रता व्याकरण	
Mar-2022	V	पत्रलेखन	

**SEMESTER – III  
CURRICULAR PLAN**

Subject Code: **HINT01A**

Title :General Hindi

Month	Unit No.	Topic to be covered	Remarks
Nov-2021	I IV	साखी बालवर्णन मातृभूमि अनुवाद	
Dec-2021	I II	तोडतीपत्थर हिन्दीसाहित्यकाइतिहास भक्तिकाल: ज्ञानज्ञानाश्रयीशाखा	
Jan-'22	I III	गीतफरोश सामान्यनिबंध: सामाचारपत्र, कंप्यूटर, पर्यावरणऔरप्रदूषण	
Feb-'22	II IV	भक्तिकाल: प्रेमाश्रयीशाखा अनुवाद	
Mar-'22	III V	बेकारीकीसमस्या परिपत्र ज्ञापन राष्ट्रभाषाहिन्दी	

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**DEPARTMENT OF HINDI**

**SEMESTER – II  
CURRICULAR PLAN**

Subject Code:**HINT21A**

Title:**GENERAL HINDI**

Month	Unit No.	Topic to be covered
June -'22	I	संस्कृतिऔरसाहित्यकापरस्परसंबंध
	II	जरिया संधिविच्छेद
	IV	
	I	भारतएकहै

July-'22	II III	भूखहड़ताल अनुवाद
Aug-'22	I II III	एचआईवी/एड्स परमात्माकाकुत्ता अनुवाद
Sep-'22	IV V	वाक्यप्रयोग पत्रलेखन

**A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU  
DEPARTMENT OF MATHEMATICS  
2021-2022 CURRICULAR PLANS**

**SEMESTER – I**

Subject Code: **MATT11A** Title: **Differential Equations**

Month	Unit No.	Topic to be covered
Dec – 2021	III	Bridge Course and basic definitions of D.E
Dec – 2021	III	Higher order linear differential equations - I
Jan – 2022	IV	Higher order linear differential equations - II
Feb – 2022	V	Higher order linear differential equations – III
Mar – 2022	I	D.E of First order and First degree
Apr - 2022	II	Orthogonal Trajectories, D.E of First order and but not of First degree

**SEMESTER – II**

Subject Code: **MATT21B** Title: **Real Analysis – II**

Month	Unit No.	Topic to be covered
June - 2022	I	Real Numbers, Sequences and Series
July – 2022	II	Infinite Series
Aug – 2022	II	Infinite Series
Aug – 2022	III	Limits and Continuity
Sep – 2022	III	Limits and Continuity
Sep – 2022	IV	Differentiation and Mean Value theorems
Oct - 2022	V	Riemann Integration

**SEMESTER – III**

Subject Code: **MAT 301** Title: **Abstract Algebra**

Month	Unit No.	Topic to be covered
Nov - 2021	I	The Groups
Dec - 2021	II	The Sub Groups and Cosets and Lagrange's theorem
Dec – 2021 Jan - 2022	III	Normal Sub Groups
Jan – 2022	IV	Homeomorphisms and Isomorphisms
Feb – 2022	V	Permutations Groups and Cyclic Groups

**SEMESTER – IV**Subject Code: **MAT401**Title :**Real Analysis**

Month	Unit No.	Topic to be covered
Mar – 2022 Apr – 2022	I	Real Numbers, Sequences and Series
Apr – 2022 May - 2022	II	Infinite Series
June –2022	III	Limits and Continuity
July - 2022	IV	Differentiation and Mean Value theorems
July - 2022	V	Riemann Integration

**SEMESTER – IV**Subject Code: **MAT 402**Title: **Linear Algebra**

Month	Unit No.	Topic to be covered
Mar – 2022 Apr – 2022	I	Matrices
Apr – 2022 May - 2022	II	Vector Space - I
June –2022	III	Vector Space - II
July - 2022	IV	Linear Transformations
July - 2022	V	Inner Product Space

**SEMESTER – IV**Subject Code: **ANS402C**Title: **Analytical Skills**

Month	Unit No.	Topic to be covered
Mar – 2022 Apr – 2022	I	Test of Reasoning - I
Apr – 2022 May - 2022	II	Test of Reasoning - II
June –2022	III	Arithmetic Ability
July - 2022	IV	Quantitative Aptitude
July - 2022	V	Business Computations

**SEMESTER – V**Subject Code: **MAT 501C**Title: **Ring Theory and Vector Calculus**

Month	Unit No.	Topic to be covered
Sep – 2021	I	Vector differentiation
Oct - 2021	II	Vector Integration
Nov - 2021	III	Vector Integration and its applications
Dec - 2021	IV	Rings - I
Jan - 2022	V	Rings - II

**SEMESTER – V**Subject Code: **MAT 502C**Title: **Linear Algebra**

Month	Unit No.	Topic to be covered
Sep – 2021	I	Matrices

Oct - 2021	II	Vector Space - I
Nov - 2021	III	Vector Space - II
Dec - 2021	IV	Linear Transformations
Jan - 2022	V	Inner Product Space

**SEMESTER – VI**

Subject Code: **MAT601GE**

Title : **Numerical Analysis**

Month	Unit No.	Topic to be covered
Feb - 2022	I	Errors in Numerical Computations
Mar - 2022	II	Solution of Algebraic and Transcendental equations
April- 2022	III	Finite Differences and Interpolation
May - 2022	IV	Central Differences
June - 2022	V	Interpolation with unequal intervals

**SEMESTER – VI**

Subject Code: **MAT602CE**

Title: **Integral Transforms**

Month	Unit No.	Topic to be covered
Feb - 2022	I	Application of L.T to solutions of D.E - I
Mar - 2022	II	Application of L.T to solutions of D.E - II
April- 2022	III	Application of L.T to solutions of I.E I
May - 2022	IV	Fourier Transforms - I
June - 2022	V	Fourier Transforms - II

**SEMESTER – VI**

Subject Code: **MAT603CE**

Title :**Advanced Numerical Analysis**

Month	Unit No.	Topic to be covered
Feb - 2022	I	Curve fitting
Mar - 2022	II	Numerical Differentiation
April- 2022	III	Numerical Integration
May - 2022	IV	Solutions of Simultaneous linear systems of equations
June - 2022	V	Numerical solution of O.D.E

**A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYURU**

**DEPARTMENT OF PHYSICS**

**SEMESTER – I**

**2021-2022      TEACHING PLAN**

Subject Code : **PHYT 11B**

Title: **Mechanics, waves & oscillations**

Month	Unit No.	Topic to be covered
DEC-2021	I	<p><b>1. Mechanics of Particles</b> Review of Newton's Laws of Motion, Motion of variable mass system, Motion of a rocket, Multistage rocket, Concept of impact parameter, scattering cross-section, Rutherford scattering-concept only.</p> <p><b>2. Mechanics of Rigid bodies</b> Rigid body, rotational kinematic relations, Equation of motion for a rotating body, Angular momentum and Moment of inertia tensor, Euler equations, Precession of a spinning top, Gyroscope, Precession of atom and nucleus in magnetic field, Precession of the equinoxes</p>



JAN - 2022	II	<p><b>3. Motion in a Central Force Field</b>  Central forces, definition and examples, characteristics of central forces, conservative nature of central forces, Equation of motion under a central force, Kepler's laws of planetary motion- Proofs, Kepler's third law from inverse-square law of Gravitation. Motion of satellites, Basic idea of Global Positioning System (GPS).</p>
FEB-2022	III	<p>Introduction to relativity, Frames of reference, Galilean transformations, absolute frames, Michelson-Morley experiment, Postulates of Special theory of relativity, Lorentz transformation, time dilation, length contraction, variation of mass with velocity, Einstein's mass-energy relation</p>
Mar-2022	IV	<p><b>5. Undamped, Damped and Forced oscillations:</b>  Simple harmonic oscillator and solution of the differential equation, Damped harmonic oscillator, Forced harmonic oscillator – Their differential equations and solutions, Resonance, Logarithmic decrement, Relaxation time and Quality factor.</p> <p><b>6. Coupled oscillations:</b>  Coupled oscillators-Introduction, Two coupled oscillators, N-coupled oscillators and wave equation.</p>
April-22	V	<p><b>7. Vibrating Strings:</b>  Transverse wave propagation along a stretched string, General solution of wave equation and its significance, Modes of vibration of stretched string clamped at ends, Overtones and Harmonics, Melde's strings.</p> <p><b>8. Ultrasonics:</b>  Ultrasonics, General Properties of ultrasonic waves, Production of ultrasonics by piezoelectric and magnetostriction methods, Detection of ultrasonics, Applications of ultrasonic waves, Ultrasonic interferometer.</p>

## SEMESTER – II

### TEACHING PLAN

Subject Code : PHYT21B

Title: **WAVE OPTICS**

Month	Unit No.	Topic to be covered
June -'22	I	<b>1. Aberrations:</b> Introduction – monochromatic aberrations, spherical aberration, methods of minimizing spherical aberration, coma, astigmatism and curvature of field, distortion. Chromatic aberration-the achromatic doublet. Achromatism for two lenses ( i )in contact and (ii) separated by a distance.
	II	<b>2. Interference : Division of wavefront:</b> Principle of superposition-coherence-conditions for interference of light..Fresnel’s biprism-determination of wavelength of light. Determination of thickness of a transparent material using biprism – Determination of the thickness of a thin sheet of transparent material. Change of phase on reflection – Stoke’s Law.
July-'22	III	<b>3. Division of Amplitude:</b> Oblique incidence of a plane wave on a thin film due to reflected and transmitted light (cosine law) –colors of thin films-Non reflecting films-interference by a plane parallel film illuminated by a point source-Interference by a film with two non-parallel reflecting surfaces (Wedge shaped film). Determination of diameter of wire- Newton’s rings in reflected light- Determination of wavelength of monochromatic light. Michelson interferometer-Determination of wavelength of monochromatic light.
Aug-'22	IV	<b>4. Diffraction:</b> Introduction,distinction between Fresnel and Fraunhoffer diffraction, Fraunhoffer diffraction –Diffraction due to single slit and circular aperture-Limit of resolution-Fraunhoffer diffraction due to double slit-Fraunhoffer diffraction pattern with N slits (diffraction grating).Resolving power of grating-Determination of wavelength of light in normal and oblique incidence methods using diffraction grating.Fresnel’s half period zones-area of the half period zones-zone plate-comparison of zone plate with convex lens-difference between interference and diffraction.

Sep-'22	V	<p><b>5. Polarisation :</b></p> <p>Polarized light: methods of polarization polarization by reflection, refraction, double refraction, scattering of light-Brewster's law-Mauls law-Nicol prism polarizer and analyzer-Quarter wave plate, Half wave plate-optical activity, analysis of light by Laurent's half shade polarimeter-Babinet's compensator.</p> <p><b>6. Lasers and Holography:</b></p> <p>Lasers: introduction,spontaneous emission, stimulated emission. Population Inversion, Laser principle-Einstein coefficients-Types of lasers-He-Ne laser, Ruby laser- Applications of lasers. Holography: Basic principle of holography-Gabor hologram and its limitations, Applications of holography</p>
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### SEMESTER – III

**2021-2022      TEACHNIG PLAN**

Subject Code: **PHY-301C**      Title: **Thermodynamics & Radiation physics**

Month	Unit No.	Topic to be covered
NOV-2021	I	<p><b>1.Kinetic theory of gases</b></p> <p>Introduction –Deduction of Maxwell's law of distribution of molecular speeds, Transport phenomena-Viscosity of gases-thermal conductivity-diffusion of gases.</p>
DEC-2021	II	<p><b>2. Thermodynamics</b></p> <p>Introduction- Isothermal and adiabatic process-Reversible and irreversible processes-Carnot's engine and its efficiency-Carnot's theorem-Second law of thermodynamics. Kelvin's and Claussius statements-Entropy, physical significance –Change in entropy in reversible and irreversible processes-Entropy and disorder-Entropy of Universe-Temperature-Entropy (T-S) diagram-Change of entropy of a perfect gas-change of entropy when ice changes into steam.</p>
		<b>3. Thermodynamic potentials and Maxwell's</b>

JAN-2022	III	<p><b>equations</b></p> <p>Thermodynamic potentials-Derivation of Maxwell's thermodynamic relations-Clausius-Clayperon's equation-Derivation for ratio of specific heats-Derivation for difference of two specific heats for perfect gas. Joule Kelvin effect-expression for Joule Kelvin coefficient for perfect.</p>
JAN-2022	IV	<p><b>4. Low temperature Physics</b></p> <p>Introduction-Joule Kelvin effect-liquefaction of gas using porous plug experiment Joule expansion-Distinction between adiabatic and Joule Thomson expansion-Expression for Joule Thomson cooling-Liquefaction of helium, Kapitza's method-Adiabatic demagnetization, Production of low temperatures -applications of substances at low-temperature-effects of chloro and fluoro carbons on ozone layer.</p>
FEB-2022	V	<p><b>5. Quantum theory of radiation</b></p> <p>Blackbody-Ferry's black body-distribution of energy in the spectrum of black body-Wein's displacement law, Wein's law, Rayleigh-Jean's law-Quantum theory of radiation-Planck's law-Measurement of radiation-Types of pyrometers –Angstrom pyroheliometer-determination of solar constant, Temperature of Sun.</p>

## SEMESTER – IV

### 2021-2022 TEACHING PLAN

Subject Code : **PHY 401C**      Title : **Electricity, Magnetism and Electronics**

MAR-2022	I	<p><b>1.Electrostatics</b></p> <p>Gauss's law Statement and its proof-Electric field intensity due to (1) Uniformly charged sphere and (2) an infinite conducting sheet of charge. Electric potential- Equipotential surface –potential due to i) a point charge ii) charged spherical shell .</p> <p><b>2.Dielectrics</b></p> <p>Electric dipole moment and molecular polarizability-Electric displacement D, electric polarization P – relation between D, E, and P- Dielectric constant,</p>
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		susceptibility .
APR - 2022	II	<p><b>3. Electric and magnetic field</b> Biot – Savart’s law and calculation of B due to long straight wire, a circular current loop and solenoid. Hall effect-determination of Hall coefficient and applications.</p> <p><b>4. Electromagnetic induction</b> Faraday’s law – Lenz’s law self and mutual inductance, coefficient of coupling, calculation of self inductance of a long solenoid, energy stored in magnetic field. Transformer- energy losses and efficiency.</p>
MAY-2022	III	<p><b>5. Alternating current and electro magnetic waves</b> Alternating current –Relation between current and voltage in LR and CR circuits, vector diagrams, LCR series and parallel resonant circuit , Q- factor, power in AC circuits.</p> <p><b>6. Maxwell’s equations</b> Idea of displacement current- Maxwell’s equations (integral and differential forms ) (no derivation) Maxwell’s wave equation(with derivation), Transverse nature of electromagnetic wave. Pointing Vector (statement and proof) production of electromagnetic wave Hertz experiment.</p>
JUN-2022	IV	<p><b>7. Basic electronics:</b> PN junction diode Zener diode ,I-V characteristics, PNP and NPN Transistors, CB,CE and CC configuration Relation between <math>\alpha</math> <math>\beta</math> and <math>\Gamma</math> transistors (CE) characteristics, Transistor as an amplifier.</p>
JULY-22	V	<p><b>Digital electronics:</b> Number systems-conversion of binary to decimal system and vice versa. Binary addition and subtraction (1’s and 2’s complement methods) laws of Boolean algebra-De Morgan’s laws- statement and proof basic logic gates, NAND and NOR as universal gates Half adder and FULL adder.</p>

## SEMESTER – IV

2021-2022

TEACHING PLAN

Subject Code: PHY- 402C

Title : MODERN PHYSICS

MAR-2022	I	<b>1. Atomic and molecular physics</b> Introduction – Drawbacks of Bohr’s atomic model – Sommerfeld’s elliptical orbits- relativistic correction (no derivation). Vector atom model and Stern & Gerlach experiment - quantum numbers associated with it. L-S and j-j coupling schemes. Zeeman Effect and its experimental study. Raman effect, stokes and Anti stokes lines . Quantum theory of Raman effect. Experimental arrangement – Applications of Raman effect.
APR - 2022	II	<b>2. Matter waves &amp; Uncertainty Principle</b> Matter waves, de Broglie’s hypothesis – wavelength of matter waves, Properties of matter waves – Davisson and Germer experiment, uses of electron diffraction-Phase velocity and Group velocity (definitions only)- relation between phase velocity and Group velocity–Heisenberg’s uncertainty principle for position and momentum (x and p) & energy and time (E and t). Experiment verification.
MAY-2022	III	<b>3.Quantum (wave) mechanics</b> Basic postulates of quantum mechanics – Schrodinger time independent and time dependent wave equation – derivations. Physical interpretation of wave function. Applications of Schrodinger wave equation to particle in one dimensional infinite box. Harmonic oscillator.
JUN-2022	IV	<b>4.General properties of Nuclei</b> Basic ideas of nucleus – size,mass,charge density(matter energy), binding energy,angular momentum, parity, magnetic moment, electric quadrupole moments.Liquid drop model and shell model (qualitative aspects only)- Magic numbers. <b>5. Radioactivity decay</b> Alpha decay : basis of $\alpha$ – decay processes. Range of $\alpha$ -particles , Geiger’s Law,Geiger- Nuttal law. $\beta$ – decay, $\beta$ ray continuous and discrete spectrum, neutrino hypothesis.
JULY-22	V	<b>6.Crystal structure</b> Amorphous and crystalline materials, unit cell, Miller indices, reciprocal lattice, types of lattices, diffraction of X- rays by crystals, Bragg’s

		<p>law, experimental techniques, Laue's method and powder diffraction method.</p> <p><b>7. Superconductivity:</b>  Introduction – experimental facts, critical temperature – critical field – Meissner effect – isotope effect – Type I and Type II superconductors – BCS theory (elementary ideas only) – applications of superconductors.</p>
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## SEMESTER – V

### 2021-2022 TEACHING PLAN

Subject Code : **PHY 501C**      Title : **Electricity, Magnetism and Electronics**

Dec-2021	I	<p><b>1. Electrostatics</b>  Gauss's law Statement and its proof-Electric field intensity due to (1) Uniformly charged sphere and (2) an infinite conducting sheet of charge. Electric potential- Equipotential surface –potential due to i) a point charge ii) charged spherical shell .</p> <p><b>2. Dielectrics</b>  Electric dipole moment and molecular polarizability- Electric displacement D, electric polarization P – relation between D, E, and P- Dielectric constant, susceptibility .</p>
Jan - 2022	II	<p><b>3. Electric and magnetic field</b>      Biot – Savart's law and calculation of B due to long straight wire, a circular current loop and solenoid. Hall effect-determination of Hall coefficient and applications.</p> <p><b>4. Electromagnetic induction</b>  Faraday's law – Lenz's law self and mutual inductance, coefficient of coupling, calculation of self inductance of a long solenoid, energy stored in magnetic field. Transformer- energy losses and efficiency.</p>
Feb-2022	III	<p><b>5. Alternating current and electro magnetic waves</b>  Alternating current –Relation between current and voltage in LR and CR circuits, vector diagrams, LCR series and parallel resonant circuit , Q- factor, power in AC circuits.</p> <p><b>6. Maxwell's equations</b>  Idea of displacement current- Maxwell's equations (integral and differential forms ) (no derivation)  Maxwell's wave equation(with derivation),</p>

		Transverse nature of electromagnetic wave. Pointing Vector (statement and proof) production of electromagnetic wave Hertz experiment.
Mar-2022	IV	<b>7.Basic electronics:</b> PN junction diode Zener diode ,I-V characteristics, PNP and NPN Transistors, CB,CE and CC configuration Relation between $\alpha$ $\beta$ and $\Gamma$ transistors (CE) characteristics, Transistor as an amplifier.
MAR-2022	V	<b>Digital electronics:</b> Number systems-conversion of binary to decimal system and vice versa. Binary addition and subtraction (1's and 2's complement methods) laws of Boolean algebra-De Morgan's laws- statement and proof basic logic gates, NAND and NOR as universal gates Half adder and FULL adder.

## SEMESTER – V

2021-2022

TEACHING PLAN

Subject Code: PHY- 502C

Title : MODERN PHYSICS

Dec-2020	I	<b>1. Atomic and molecular physics</b> Introduction – Drawbacks of Bohr's atomic model – Sommerfeld's elliptical orbits- relativistic correction (no derivation). Vector atom model and Stern & Gerlach experiment - quantum numbers associated with it. L-S and j-j coupling schemes. Zeeman Effect and its experimental study. Raman effect, stokes and Anti stokes lines . Quantum theory of Raman effect. Experimental arrangement – Applications of Raman effect.
Jan - 2021	II	<b>2. Matter waves &amp; Uncertainty Principle</b> Matter waves, de Broglie's hypothesis – wavelength of matter waves, Properties of matter waves – Davisson and Germer experiment, uses of electron diffraction-Phase velocity and Group velocity (definitions only)- relation between phase velocity and Group velocity–Heisenberg's uncertainty principle for position and momentum (x and p) & energy and time (E and t). Experiment verification.



Feb-2021	III	<p><b>3.Quantum (wave) mechanics</b>  Basic postulates of quantum mechanics – Schrodinger time independent and time dependent wave equation – derivations. Physical interpretation of wave function. Applications of Schrodinger wave equation to particle in one dimensional infinite box. Harmonic oscillator.</p>
Mar-2021	IV	<p><b>4.General properties of Nuclei</b>  Basic ideas of nucleus – size,mass,charge density(matter energy), binding energy,angular momentum, parity, magnetic moment, electric quadrupole moments.Liquid drop model and shell model (qualitative aspects only)- Magic numbers.</p> <p><b>5. Radioactivity decay</b>  Alpha decay : basis of <math>\alpha</math> – decay processes. Range of <math>\alpha</math>-particles , Geiger’s Law,Geiger- Nuttal law. <math>\beta</math> – decay, <math>\beta</math> ray continuous and discrete spectrum, neutrino hypothesis.</p>
April-21	V	<p><b>6.Crystal structure</b>  Amorphous and crystalline materials, unit cell, Miller indices, reciprocal lattice, types of lattices, diffraction of X- rays by crystals, Bragg’s law, experimental techniques, Laue’s method and powder diffraction method.</p> <p><b>7. Superconductivity:</b>  Introduction – experimental facts, critical temperature – critical field – Meissner effect – isotope effect – Type I and Type II superconductors – BCS theory (elementary ideas only) – applications of superconductors.</p>

**SEMESTER – VI**

**2021-2022**

**TEACHING PLAN**

Subject Code: **PHY 601 GE**

Title : **ANALOG AND DIGITAL ELECTRONICS**

MAR-2022	I	<p><b>1. FET</b> Construction ,Working ,Characteristics and uses; MOSEFT-enhancement MOSEFT,Depletion MOSEFT, Construction and Working, drain Characteristics of MOSEFT, applications of MOSEFT.</p> <p><b>2. Photo electric devices:</b> structure and operation, Characteristics and applications of LED and LCD.</p>
APR-2022	II	<p><b>3.Operational amplifier:</b> Characteristics of ideal and practical OP-amp (IC-741),Basic differential OP-amp supply voltage, IC identification, internal</p>

		blocks of OP-amp, its parameter off set voltages and currents, CMRR, slew rate, Concept of Virtual ground.
APR-2022	III	<b>4.Applications of OP-amp:</b> OP-amp as voltage amplifier, inverting amplifier, Non- inverting amplifier, Voltage follower, summing amplifier, difference amplifier, comparator, Integrator, Differentiator.
MAY-2022	IV	<b>5. Data processing circuits:</b> Multiplexers, De – Multiplexers, encoders, decoders, Characteristics <b>6. For Digital IC's –RTL, DTL,TTL, CMOS (NAND&amp;NOR Gates</b>
MAY-2022	V	<b>7 .Sequential digital circuits:</b> Flip-flops, RS, clocked SR, JK, D, T, Master-Slave Flip-flops . <b>8. Counters:</b> Asynchronous counters-modulo 4counter-modulo 16 ripple counter, Decade counter, Synchronous counter.

### SEMESTER – VI

#### 2021-2022      TEACHING PLAN

Subject Code: **PHY 602 CE**

Title : **INTRODUCTION TO MICROPROCESSOR AND MICROCONTROLLER**

MAR-2022	I	<b>MICROPROCESSOR:</b> General architecture of microprocessor, architecture of 8085 microprocessor, 8085 pin diagram, Concept of data bus, address bus, and control bus, 8085 programming instruction classification.
APR-2022	II	<b>8085 Interfacing Memory</b> Introduction-Memory structure and its requirements-basic concepts in memory interfacing. Address Decoding-Interfacing circuit. Port-mapped I/O or Direct I/O interface (8-bit Addressing)-Memory Indirect I/O mapped Interfaces (16-bit Addressing)-Port mapped versus Memory mapped I/O. I/O Device Interfacing.
APR-2022	III	<b>8085 Microprocessor Applications</b> Introduction-Programmed data transfer scheme. Direct Memory Access (DMA) –Types. 8255A PPI-Block diagram. 8259A PIC-Pin diagram and functional description. 8257 Programmable DMA controller-Block diagram and Pin description.

MAY-2022	IV	<p><b>8051 Architecture-I:</b> Types of microcontrollers- microcontroller architecture, CISC, RISC, operation of microcontroller, basic building blocks of microcontroller, comparison of microcontroller and microprocessor- block diagram of 8051-I/o pins and ports.</p> <p>Microcontroller Resources.</p>
MAY-2022	V	<p><b>8051 Architecture-II:</b> 8051 Flag bits and PSW register and DPTR register- Memory Organization- Special function registers- PSW register-Counters and Timers-Serial I/O-8051 Microcontroller Interrupts.</p>

## SEMESTER – VI

### 2021-2022 TEACHING PLAN

Subject Code: **PHY 603C**

Title: **Computational Methods and Programming**

MAR-2022	I	<p>1. Fundamentals of C language: C character set – Identifiers and keywords – structure of c program. Constants- variables- Data types- Declarations of variables – Declaration of storage class – Defining symbolic constants – Assignment statement.</p> <p>2.Operators : Arithmetic operators- Relational operators – Logic operators – Assignment operators – Increment and decrement operators – Conditional operators</p>
APR-2022	II	<p>3.Expressions and I/O statements : Arithmetic expressions – precedence of arithmetic operators – Type converters in expressions – Mathematical ( Library) functions – Data input and output – The getchar and putchar functions – Scanf – Printf simple programs.</p> <p>4.Control statements: IF – ELSE statements – Switch statements – The operators – GO TO-while, DO-While, FOR statements – BREAK and CONTINUE statements.</p>
APR-2022	III	<p>5.Arrays: One dimensional and two dimensional arrays – Initialization –Type declaration – Inputting and outputting of data for arrays – Programs of matrices addition, subtraction and multiplication.</p> <p>6.User defined functions: The form of C functions – Return values and their types – Calling a function – Category of functions. Nesting of functions. Recursion. ANSI C functions – Function declaration. Scope and life of variables in functions.</p>

MAY-2022	IV	<p>7.Linear and Non-Linear equations: Solution of Algebra and transcendental equations – Bisection, Falsi position and Newton – Rhapsion methods – Basic principles – Formulae – algorithms.</p> <p>8.Simultaneous equations: Solutions of simultaneous linear equations – Guass elimination and Guass seidel iterative methods – Basic principles – Formulae- Algorithms</p>
MAY-2022	V	<p>Interpolations : Concept of linear interpolation – Finite differences – Newton’s and Lagrange’s interpolation formulae – principles and Algorithms.</p> <p>9.Numerical differentiation and integration : Numerical differentiation – algorithm for evaluation of first order derivatives using formulae based on Taylor’s series – Numerical integration – Trapezodal and Simpson’s 1/3 rule – Algorithms.</p>

### SEMESTER – VI

2021-2022

### TEACHING PLAN

Subject Code: **PHY 604 CE**

Title: : **Electronic Instrumentation**

MAR-2022	I	<ol style="list-style-type: none"> <li>1. Basic of measurements: Instruments accuracy, precision, sensitivity- errors in measurements- Basic meter movement- PMMC (Permanent Magnetic Moving Coil).</li> <li>2. Measurement of dc current: DC ammeter-multi range ammeters-the ARYTON Shunt or universal Shunt.</li> <li>3. Measurement of dc voltage: DC Voltmeter – Multi Range Voltmeter- Voltmeter sensitivity.</li> </ol>
APR-2022	II	<p><b>4.Analog Multimeter:</b> Multimeter - as dc ammeter-as dc voltmeter-as ac voltmeter- as ohm meter-Multimeter operating instructions.</p> <p>5.Digital instruments: Principle and working of digital instruments, characteristics of a digital meter, working principle of digital voltmeter.</p>
APR-2022	III	<p>6.CRO: Block diagram of basic CRO, construction of CRT, electron gun, electrostatic focusing and acceleration (only explanation), time base operation, synchronization, front panel controls, specifications of CRO and their significance.</p> <p>7.Applications CRO: Measurement of voltage-dc and ac, frequency, time period. Special features of dual trace CRO. Digital storage</p>

		oscilloscope: block diagram and principle of working.
MAY-2022	IV	8.Diode as Rectifier – Half wave rectifier, Full wave rectifier – construction, working and efficiency. (no derivation) 9.Feedback in Electronic circuits – Positive and Negative feedback, expressions for gains, advantages of negative feedback, Oscillators, Barkhausen criteria, RC phase shift oscillator (no derivation)
MAY-2022	V	10.Signal Generators: Block diagram, working and specifications of low frequency signal generators, pulse generator, function generator . 11.Bridges: Measurement of resistance by Wheat stone’s Bridge- Sensitivity of Wheat stone’s Bridge- Applications of Wheat stone’s Bridge- Limitations of Wheat stone’s Bridge.

**A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**  
**DEPARTMENT OF CHEMISTRY**  
**SEMESTER – I**  
**2021-2022 CURRICULAR PLAN**

Subject Code: **CHET11A** Title: Inorganic and Physical chemistry

Month	Unit No.	Topic to be covered
Nov-21	1	Introduction of Chemistry of P block elements
Dec-21	4	Liquid crystals
Jan-22	3	Solid state, Gaseous state
Feb-22	2	Transition elements, Inner transition elements
Mar-22	5	Solutions, Colligative properties

**SEMESTER – II**

**2021-22 CURRICULAR PLAN**

Subject Code: **CHET21A** Title: **Organic and General chemistry**

Month	Unit No.	Topic to be covered
Jun-22	4	Chemical bonding & Surface chemistry

Jul-22	5	Stereo chemistry of carbon compounds
Aug-22	3&1	Benzene and its reactivity Saturated hydro carbons Cyclo alkanes
Sep-22	2	Unsaturated hydro carbons

### SEMESTER – III

#### 2021-2022 CURRICULAR PLAN

Subject Code: **CHE-301**

Title : Organic and Spectroscopy

Month	Unit No.	Topic to be covered
Nov-2021	3	Carboxylic acids and their derivatives Active methylene compounds
Dec-2021	2	Carbonyl compounds
Jan-'22	4	Spectroscopy
Feb-'22	5	Spectroscopy
Mar-22	1	Halogen compounds

### SEMESTER – IV

#### 2021-2022 CURRICULAR PLAN

Subject Code: **CHE 401** Title: Inorganic, Organic and Physical chemistry

Month	Unit No.	Topic to be covered
Apr-22	2	Carbohydrates
May-22	3	Amino acids and proteins Heterocyclic compounds
Jun-22	1&4	Organometallic compounds Nitrogen containing functional groups
Jul-22	5	Photo chemistry Thermodynamics

### SEMESTER – IV

#### 2021-2022 CURRICULAR PLAN

Subject Code: CHE 402

Title: Inorganic and Physical chemistry

Month	Unit No.	Topic to be covered
Apr-22	1	Co ordination chemistry
May-22	2	Inorganic reaction mechanism
Jun-22	3&5	Phase rule, Chemical kinetics
Jul-22	4	Electro chemistry

**SEMESTER – V(501)**

**2021-22CURRICULAR PLAN**

Subject Code: CHE-501

Title: Inorganic, Organic & Physical Chemistry

Month	Unit No.	Topic to be covered
Sep-21	1	Co ordination chemistry
Oct-21	2	Magnetic properties of metal complexes
Nov-21	3	Nitro hydro carbons
Dec-21	4	Nitrogen compounds
Jan-22	5	thermodynamics

**SEMESTER – V (502)**

**2021-22CURRICULAR PLAN**

Subject Code: CHE-502

Title : Inorganic, Organic & Physical Chemistry

Month	Unit No.	Topic to be covered
Sep-21	3	Carbohydrates

Oct-21	4	Amino acids and Proteins
Nov-21	2	Hetero cyclic compounds
Dec-21	1	Reactivity of Metal complexes
Jan-22	5	Chemical kinetics

**SEMESTER – VI (GE)**

**2021-22 CURRICULAR PLAN**

Subject Code: CHE-601GE      Title: Analytical methods in Chemistry

Month	Unit No.	Topic to be covered
Jan-22	4	Ion exchange, paper chromatography
Feb-22	5	TLC, Column chromatography
Mar-22	1&3	Separation techniques in chemical analysis
Apr-22	2	Treatment of Analytical data

**SEMESTER – VI (CHE-602CE)**

**2021-22 CURRICULAR PLAN**

Subject Code: CHE-602CE      Title : Organic spectroscopic techniques

Month	Unit No.	Topic to be covered
Jan-22	1	NMR spectroscopy
Feb-22	2	NMR spectroscopy
Mar-22	3	Electron spin resonance spectroscopy
Apr-22	4&5	UV & Visible spectroscopy Electronic spectra of poly atomic molecules

**SEMESTER – VI (CHE-603CE)**

**2021-22 CURRICULAR PLAN**



Subject Code: CHE-603CE Title :Advanced organic reactions

Month	Unit No.	Topic to be covered
Jan-22	1	Organic photo chemistry
Feb-22	2	Organic photo chemistry
Mar-22	3	Protecting groups and organic reactions
Apr-22	4&5	Synthetic reactions &New synthetic reactions

**SEMESTER – VI (CHE-604CE)**

**2021-22CURRICULAR PLAN**

Subject Code: CHE-604CE Title: Pharmaceutical and Medicinal chemistry

Month	Unit No.	Topic to be covered
Jan-22	1	Pharmaceutical terminology
Feb-22	2	Nomenclature
Mar-22	3	Synthesis and therapeutic activity of drugs
Apr-22	4&5	Pharmacodynamic drugs& HIV-AIDS

**AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE VUYYURU (AUTONOMOUS)**

**Department of Commerce**

**TEACHING PLAN- 2021-2022**

**TITLE OF THE PAPER: Fundamentals of Accounting**

**Semester: I Course Code: COMT11B**

## Syllabus

Unit	Learning Units	
I	<b>Introduction :</b> Need for Accounting – Definition – Objectives, – Accounting Concepts and Conventions – GAAP - Accounting Cycle - Classification of Accounts and its Rules – Bookkeeping and Accounting - Double Entry Book-Keeping - Journalizing - Posting to Ledgers, Balancing of Ledger Accounts (including Problems).	DEC-2021
II	<b>Subsidiary Books:</b> Types of Subsidiary Books - Cash Book, Three-column Cash Book- Petty Cash Book (including Problems).	JAN - 2022
III	<b>Trial Balance and Rectification of Errors:</b> Preparation of Trial balance - Errors – Meaning – Types of Errors – Rectification of Errors – Suspense Account (including Problems)	FEB-2022
IV	<b>Bank Reconciliation Statement:</b> Need for Bank Reconciliation - Reasons for Difference between Cash Book and Pass Book Balances- Preparation of Bank Reconciliation Statement - Problems on both Favourable and Unfavorable Balance (including Problems).	Mar-2022
V	<b>Final Accounts: Preparation of Final Accounts:</b> Trading account – Profit and Loss account – Balance Sheet – Final Accounts with Adjustments (including Problems).	APR-2022

**TITLE OF THE PAPER:** Principles of Management  
**Semester:** I **Course Code** COMT14P

## Syllabus

Unit	Learning Units	
I	<b>Introduction of Management Definition</b> - Management - functions of management - principles of management - levels of management- Trends and Challenges of Management in Global Scenario.	DEC-2021

II	<b>Planning Nature and purpose of planning</b> - Planning process - Types of plans - Objectives - Managing by objective (MBO) Strategies - Types of strategies	JAN - 2022
III	<b>Organizing</b> Nature and purpose of organizing - Organization structure Formal and informal groups organization - Line and Staff authority -Centralization and Decentralization - Delegation of authority	FEB-2022
IV	<b>Motivation</b> Theories -Leadership Styles - Leadership theories - Communication - Barriers to effective communication.	Mar-2022
V	<b>Controlling</b> Process of controlling - Types of control- Budgetary and non-budgetary, control techniques - Managing Productivity - Cost Control - Purchase Control- Maintenance Control - Quality Control	APR-2022

**TITLE OF THE PAPER: Business Organization and Management**

**Semester: I**

**Course Code COMT12A**

Unit	Learning Units	
I	<b>Introduction Concepts of Business, Trade, Industry and Commerce:</b> Business – Meaning, Definition, Features and Functions of Business - Trade Classification – Aids to Trade – Industry Classification and Commerce - Factors Influencing the Choice of Suitable form of Organization.	DEC-2021
II	<b>Forms of Business Organizations:</b> Features, Merits and Demerits of Sole Proprietorship and Partnership Business - Features Merits and Demerits of Joint Stock Companies - Public Sector Enterprises (PSEs) - Multinational Corporations (MNCs)- Differences between Private Limited Public Limited Company.	JAN - 2022
III	<b>Company Incorporation:</b> Preparation of Important Documents for Incorporation of Company - Certificate of Incorporation and Certificate of Commencement of Business - Contents of Memorandum and Articles of Association – Content of Prospectus.	FEB-2022
IV	<b>Management:</b> Meaning Characteristics - Fayol's 14 Principles of Management - Administration Vs. Management - Levels of Management.	Mar-2022
V	<b>Functions of Management:</b> Different Functions of Management - Meaning – Definition – Characteristics Merits and Demerits of Planning - Principles of Organization – Line and staff of Organization.	APR-2022

**TITLE OF THE PAPER: Business Environment**

**Semester: I**

**Course Code COMT13**

**Business Environment**

Unit	Learning Units	
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I	<b>Overview of Business Environment:</b> Business Environment – Meaning – Characteristics – Scope -Macro and Micro Dimensions of Business Environment -Environmental Analysis- Purpose & Techniques.	DEC-2021
II	<b>Economic Environment:</b> Economic Environment – Nature of the Economy – Structure of Economy – Economic Policies & Planning the Economic Condition – NITI Ayog – National Development Council – Five Year Plans	JAN - 2022
III	<b>Economic Policies:</b> Economic Reforms and New Economic Policy – New Industrial Policy – Competition Law – Fiscal Policy – Objectives and Limitations – Monetary Policy and RBI	FEB-2022
IV	<b>Social, Political and Legal Environment:</b> Concept of Social Responsibility of Business towards Stakeholders - Demonetization, GST and their Impact - Political Stability - Legal Changes.	Mar-2022
V	<b>Global Environment:</b> Globalization – Meaning – Role of WTO – WTO Functions -IBRD– Trade Blocks, BRICS, SAARC, ASEAN in Globalization	APR-2022

**TITLE OF THE PAPER: INSURANCE PROMOTION**

**Semester: I Course Code COMT15S**

**Syllabus**

### INSURANCE PROMOTION

Unit	Learning Units	
I	Introduction of Insurance - Types of insurances. Growth of Insurance sector in India - Regulatory mechanism (IRDA) - Its functions	DEC-2021 JAN - 2022
II	Life Insurance plans. Health insurance plans. Products and features. Contents of documents– Sales Promotion methods - Finding prospective customers –Counselling – Helping customers in filing - Extending post-insurance service to customers	FEB-2022 Mar-2022
III	General Insurance - It's products (Motor, Marine, Machinery, Fire, Travel and Transportation) and features. Contents of documents. Dealing with customers – Explaining Products to Customers - Promoting Customer loyalty. Maintenance of Records.	APR-2022

**TITLE OF THE PAPER: Advanced Accounting**

**Semester: I Course Code : COMT31II**

**Syllabus**

Unit	Learning Units	Lecture Hours
I	<b>Accounting for Non Profit Organizations:</b> Non Profit Entities- Meaning - Features of Non-Profit Entities –Provisions as per Sec 8 - Accounting Process- Preparation of Accounting Records - Receipts and Payments	DEC-2021

	Account- Income and Expenditure Account - Preparation of Balance Sheet (including problems).	
II	<b>Single Entry System:</b> Features – Differences between Single Entry and Double Entry – Disadvantages of Single Entry- Ascertainment of Profit and Preparation of Statement of Affairs (including Problems)- Conversion of Single entry to Double entry system (Simple Problems).	JAN - 2022
III	<b>Hire Purchase System:</b> Features –Difference between Hire Purchase and Instalment Purchase Systems - Accounting Treatment in the Books of Hire Purchaser and Hire Vendor - Default and Repossession (including Problems).	FEB-2022
IV	<b>Partnership Accounts-I:</b> Meaning – Partnership Deed - Fixed and Fluctuating Capitals-Accounting Treatment of Goodwill - Admission and Retirement of a Partner (including problems).	Mar-2022
V	<b>Partnership Accounts-II:</b> Dissolution of a Partnership Firm – Application of Garner v/s Murray Rule in India – Insolvency of one or more Partners (including problems).	APR-2022

**TITLE OF THE PAPER: Business Statistics**

**Semester: III Course Code COMT32**

**Syllabus**

<b>Unit</b>	<b>Learning Units</b>	<b>Lecture Hours</b>
I	<b>Introduction to Statistics:</b> Definition, Importance and limitation of statistics, Collection of data, Schedule and questionnaire, Frequency distribution, Tabulation	DEC-2021
II	<b>Measures of Central Tendency:</b> Characteristics of measures of central tendency, Types of Averages, Arithmetic Mean, Geometric Mean, Harmonic Mean, Median, Mode	JAN - 2022
III	<b>Measures of dispersion and Skewness:</b> Properties of dispersion, Range, Quartile Deviation, Mean deviation, Standard deviation, Coefficient of Variation, Skewness Definition, Karl Pearson's and Bowley's Measures Of skewness	FEB-2022
IV	<b>Measures of Relation:</b> Meaning and use of correlation, Types of correlation, Karl Pearson's correlation coefficient, Probable Error, Spearman's Rank correlation, Regression analysis comparison between correlation and Regression, Regression Equations	Mar-2022
V	<b>Analysis of Time Series &amp; Index Numbers</b> Meaning and utility of time series, Components of Time series, Measurement of trend and Seasonal Variations, Techniques of Time series analysis, Methods of averages(Semi , Moving averages), Least square method, Index Numbers, Methods of Construction of Index numbers, Price index numbers, Limitations of index numbers.	APR-2022

**TITLE OF THE PAPER: Marketing**

**Semester: III Course Code COMT33**

SYLLABUS  
**Marketing**

**Course Details**

<b>Unit</b>	<b>Learning Units</b>	
I	<b>Introduction:</b> Concepts of Marketing: Need, Wants and Demand - Marketing Concepts – Marketing Mix - 4 P’s of Marketing – Marketing Environment.	DEC-2021
II	<b>Consumer Behavior and Market Segmentation:</b> Buying Decision Process – Stages – Buying Behavior – Market Segmentation –Bases of Segmentation - Selecting Segments – Advantages of Segmentation	JAN - 2022
III	<b>Product Management:</b> Product Classification – Levels of Product - Product Life Cycle - New Products, Product Mix and Product Line Decisions - Design, Branding, Packaging and Labelling.	FEB-2022
IV	<b>Pricing Decision:</b> Factors Influencing Price – Determination of Price - Pricing Strategies: Skimming and Penetration Pricing.	Mar-2022
V	<b>Promotion and Distribution:</b> Promotion Mix - Advertising - Sales promotion - Publicity – Public Relations - Personal Selling and Direct Marketing - Distribution Channels – Online Marketing	APR-2022

**TITLE OF THE PAPER: E COMMERCE**

**Semester: III Course Code COMT34**

**Syllabus**

<b>Unit</b>	<b>Learning Units</b>	
I	<b>Introduction, Nature and Scope</b> Introduction- Definition –importance- Nature and scope of e commerce-Advantages and limitations-Types of ecommerce– B2B,B2C,C2B,C2C,B2A,C2A-Frameworkecommerce	DEC-2021
II	<b>Environmental and Technical support Aspects</b> Technical Components-Internet and its component structure- Internet Vs Intranet, Vs Extranet and their differences-Website design- its structure-designing, developing and deploying the system-	JAN - 2022
III	<b>Security and Legal Aspects</b> Security environment –its preliminaries and precautions-protecting Web server with Firewalls-Importance of Digital Signature –its components – Cyber Law-Relevant Provisions of IT Act2000.	FEB-2022
IV	<b>Operational Services of e Commerce</b> E retailing –features- E Services-Banking, Insurance, Travel, Auctions, Learning, Publication and Entertainment-Payment of utilities	Mar-2022

	(Gas, Current Bill, Petrol Products)- On Line Shopping (Amazon, Flipkart, Snapdeal etc.)	
V	<b>E payment System</b> Types of e payment system- its features-Digital payments (Debit Card/Credit Cards, Internet Banking, Mobile wallets- Digital Apps (unified Payment Services-Phone Pay, Google Pay, BHIMEtc.)Unstructured Supplementary Services Data(Bank Prepaid Card, Mobile banking)-	APR-2022

**TITLE OF THE PAPER: ONLINE BUSINESS**

**Semester: III Course Code COMT 35S**

**Syllabus**

**ONLINE BUSINESS**

<b>Unit</b>	<b>Learning Units</b>	
I	Introduction to Online-Business-Definition-Characteristics-Advantages of Online Business-Challenges- Differences between off-line business, e-commerce and Online Business.	DEC-2021 JAN - 2022
II	Online-business Strategies-Strategic Planning Process-Procurement -Logistics & Supply Chain Management- Customer Relationship management.	FEB-2022 Mar-2022
III	Designing Online Business Website – Policies - Security & Legal Issues - Online Advertisements - Payment Gateways - Case Study	APR-2022

**TITLE OF THE PAPER: INSURANCE PROMOTION**

**Semester: III Course Code COMT36S**

**Syllabus**

**INSURANCE PROMOTION**

<b>Unit</b>	<b>Learning Units</b>	
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I	Introduction of Insurance - Types of insurances. Growth of Insurance sector in India - Regulatory mechanism (IRDA) - Its functions	DEC-2021 JAN - 2022
II	Life Insurance plans. Health insurance plans. Products and features. Contents of documents– Sales Promotion methods - Finding prospective customers –Counselling – Helping customers in filing - Extending post-insurance service to customers	FEB-2022 Mar-2022
III	General Insurance - It's products (Motor, Marine, Machinery, Fire, Travel and Transportation) and features. Contents of documents. Dealing with customers – Explaining Products to Customers - Promoting Customer loyalty. Maintenance of Records.	APR-2022

**TITLE OF THE PAPER: Advanced Corporate Accounting**

**Semester: V / VI**

**Syllabus**

**ADVANCED CORPORATE ACCOUNTING**

**Paper code: CACA-501 G/C**

<b>Unit</b>	<b>Learning Units</b>	<b>Lecture Hours</b>
I	<b>Purchase of Business</b> Meaning - Purchase Consideration - Methods for determining Purchase Consideration-Discharge of Purchase Consideration-Accounting Treatment.	DEC-2021
II	<b>Amalgamation of Companies</b> Meaning and Objectives - Provisions for Amalgamation of Companies as per Accounting Standard 14 - Accounting Treatment.	JAN - 2022
III	<b>Internal Reconstruction of Companies</b> Meaning - Forms of Internal Reconstruction - Alteration of Share Capital and Reduction of Share Capital- Accounting Treatment.	FEB-2022
IV	<b>Accounts of Holding Companies</b> Meaning of Holding Companies and Subsidiary companies- Consolidated Financial Statements- Legal requirements on Consolidation-Calculation of Minority Interest- Accounting Treatment.	Mar-2022
V	<b>Liquidation</b> Meaning - Modes of Winding up of a Company- - Liquidator's Final Statement of Account - Calculation of Liquidator's Remuneration - Preparation of Statement of Affairs and Deficiency Account- Accounting Treatment	APR-2022

**TITLE OF THE PAPER: SOFTWARE SOLUTIONS TO ACCOUNTING**

**Semester: V / VI**

**Syllabus**

**SOFTWARE SOLUTIONS TO ACCOUNTING**

**Paper code: -CSSA-502 G/C**

<b>Unit</b>	<b>Learning Units</b>
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I	<b>Computerized Accounting</b> Microsoft Excel Spread Sheet- Functions in Excel- Preparation of Accounts, Statements and Budgets using MS Excel- Analysis and Interpretation.	DEC-2021
II	<b>Introduction to Leading Accounting Soft wares –</b> Busy - Marg – Quick Books - Zoho Books -Tally- Features and Accounting.	JAN - 2022
III	<b>Tally ERP-9 - Company Creation –</b> Tally Startup Screen- Gateway of Tally- Create a Company - Alter & Delete company- Backup and Restore- Security Features in Tally.	FEB-2022
IV	<b>Tally- Accounting Masters-</b> Groups- Create Ledgers- Alter& Delete - Inventory Masters- Creating Stock Groups - Stock Items- Unit of Measurement- Alter & Delete.	Mar-2022
V	<b>Tally-Voucher Entry –</b> Vouchers Types - Vouchers Entry - Alter and deleting Settings Purchase Vouchers and Sales Vouchers including Tax component –Reports Generation.	APR-2022

**TITLE OF THE PAPER: ADVERTISING AND MEDIA PLANNING**

**Semester: V / VI**

**Syllabus**

**ADVERTISING AND MEDIA PLANNING**

**Paper code : CAMP-503 G/C**

<b>Unit</b>	<b>Learning Units</b>	
I	<b>Introduction, Nature and Scope</b> Advertising- Nature and Scope- Functions - Impact on Social, Ethical and Economical Aspects - Its Significance – Advertising as a Marketing Tool and Process for Promotion of Business Development - Criticism on advertising	DEC-2021
II	<b>Strategies of Advertisements</b> Types of Advertising Agencies and their Strategies in Creating Advertisements - Objectives - Approach - Campaigning Process - Role of Advertising Standard Council of India (ASCI) - DAGMAR approach	JAN - 2022
III	<b>Process of Advertisement</b> Creativeness and Communication of Advertising –Creative Thinking – Process – Appeals – Copy Writing - Issues in Creation of Copy Testing –Slogan Elements of Design and Principles of Design	FEB-2022
IV	<b>Media Planning</b> Advertising Media - Role of Media - Types of Media - Print Media - Electronic Media and other Media - Advantages and Disadvantages – Media Planning - Selection of Media	Mar-2022
V	<b>Analysis of Market Media</b> Media Strategy – Market Analysis -Media Choices - Influencing Factors - Target, Nature, Timing, Frequency, Languages and Geographical Issues - Case Studies	APR-2022

**TITLE OF THE PAPER: SALES PROMOTION AND PRACTICE**

**Semester: V / VI**

**Syllabus**

**SALES PROMOTION AND PRACTICE**

Unit	Learning Units	
I	<b>Introduction to Sales Promotion:</b> Nature and Scope of Sales Promotion- Influencing Factors - Sales Promotion and Control - Strengths and Limitations of Sales Promotion – Sales Organization - Setting-up of Sales Organization - Types of Sales Organization.	DEC-2021
II	<b>Sales Promotion and Product Life Cycle:</b> Types of Sales Promotion - Consumer Oriented - Trade Oriented - Sales Oriented - Various Aspects -Sales Promotion methods in different Product Life Cycle – Cross Promotion - Sales Executive Functions- Theories of Personal Selling - Surrogate Selling.	JAN - 2022
III	<b>Strategies and Promotion Campaign:</b> Tools of Sales Promotion - Displays, Demonstration, Fashion Shows, Conventions - Conferences, Competitions – Steps in designing of Sales Promotion Campaign – Involvement of Salesmen and Dealers – Promotional Strategies - Ethical and Legal issues in Sales Promotion.	FEB-2022
IV	<b>Salesmanship and Sales Operations:</b> Types of Salesman - Prospecting - Pre-approach and Approach - Selling Sequence - Sales budget, Sales territories, Sales Quota's - Point of Sale – Sales Contests - Coupons and Discounts - Free Offers - Showrooms and Exhibitions - Sales Manager Qualities and functions.	Mar-2022
V	<b>Sales force Management and Designing:</b> Recruitment and Selection - Training - Induction - Motivation of sales personnel - Compensation and Evaluation of Sales Personnel - Designing of Events for Enhancing Sales Promotion	APR-2022

**TITLE OF THE PAPER: DIGITAL MARKETING**  
**Semester: V / VI**

### Syllabus

#### DIGITAL MARKETING

**Paper code : CDM -505 G**

Unit	Learning Units	
I	<b>Introduction</b> Digital marketing: Meaning – importance – traditional online marketing vs digital marketing – online market place analysis Micro Environment – Online Macro Environment - trends in digital marketing – competitive analysis.	DEC-2021
II	<b>Web site planning and creation</b> Web Site: meaning – objectives – components of website - website creation – incorporation of design and– adding content, installing and activating plugins.	JAN - 2022
III	<b>Search Engine Optimization (SEO)</b> SEO: Meaning – History and growth of SEO –Importance of Search Engine - On page Optimization – off page optimization – Role of Search Engine Operation- google Ad words – Search Engine Marketing: Campaign Creation – Ad Creation, Approval and Extensions.	FEB-2022
IV	<b>Social Media Marketing:</b> Meaning of social media and Social Media Marketing – social Management tools-strategy and planning – social media network – Social Networking – video creation and sharing – use of different social media platforms - Content creation - Blogging – Guest Blogging.	Mar-2022
V	<b>Email marketing:</b> Meaning – Evolution of email – importance of email marketing – Development and Advancements in e mail marketing - email marketing platforms – creating and Tracking emailers–create forms – create opt-in lists – mapping industry	APR-2022

	trends and eliminating spam messages.	
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**TITLE OF THE PAPER: Service Marketing**  
**Semester: V / VI**

**Syllabus**  
**Service Marketing**

**Paper code: CSM -506 G**

<b>Unit</b>	<b>Learning Units</b>	<b>Lecture Hours</b>
I	<b>Introduction: Nature and Scope of services</b> Introduction: Nature and Scope of services characteristics of services, classification of services – need for service marketing - reasons for the growth of services sector, Overview of marketing Different Service Sectors -Marketing of Banking Services -Marketing in Insurance Sector - Marketing of Education Services.	DEC-2021
II	<b>Consumer Behavior in Services Marketing</b> Customer Expectations on Services- Factors influencing customer expectation of services. - Service Costs experienced by Consumer, the Role of customer in Service Delivery, Conflict Handling in Services, Customer Responses in Services, Concept of Customer Delight	JAN - 2022
III	<b>Customer Relationship marketing and Services Market Segmentation.</b> Customer Relationship marketing: Meaning -Importance of customer & customer's role in service delivery, Benefits of customer relationship, retention strategies. Services Market Segmentation: - Market segmentation -Basis & Need for segmentation of services, bases of segmentation services, segmentation strategies in service marketing.	FEB-2022
IV	<b>Customer Defined Service Standards.</b> Customer Defined Service Standards - Hard and Soft, Concept of Service Leadership and Service Vision -Meeting Customer Defined Service Standards - Service Flexibility Versus Standards - Strategies to Match Capacity and Demand - managing Demand and Supply of Service –applications of Waiting Line and Queuing Theories to Understand Pattern Demand.	Mar-2022
V	<b>Service Development and Quality Improvement.</b> Service Development – need, importance and Types of New Services - stages in development of new services, service Quality Dimensions - Service Quality Measurement and Service Mapping, Improving Service Quality and Service Delivery, Service Failure and Recovery.	APR-2022

**DEPARTMENT OF HISTORY**  
**SEMESTER – I**

**CURRICULAR PLAN**

Subject Code:HIST11B Title:Ancient Indian history and culture (From Indus valley Civil .to 13 century(A.D))

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>Nov-2021</b>	<b>I</b>	Ancient Indian Civilization (from Circa 3000 BC to 6 <sup>th</sup> BC):	
<b>Dec-2021</b>	<b>II</b>	Ancient Indian History & Culture (6 <sup>th</sup> Century BC to 2 <sup>nd</sup> Century AD):	
<b>Jan - 2022</b>	<b>III</b>	History & Culture of South India (2nd Century BC to 8 <sup>th</sup> Century AD):	
<b>Feb-2022</b>	<b>IV</b>	India from 3 <sup>rd</sup> century AD to 8 <sup>th</sup> century AD:	
<b>Mar-2022</b>	<b>V</b>	History and Culture of South India (9 <sup>th</sup> century AD to 13 <sup>th</sup> century AD):	

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**DEPARTMENT OF HISTORY**  
**SEMESTER – III**  
**CURRICULAR PLAN**

Subject Code:HIS301C Title : MODERN INDIAN HISTORY & CULTURE (1764-1947 A. D)

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>Nov-2021</b>	<b>I</b>	Policies of Expansion	
<b>Dec-2021</b>	<b>II</b>	Social, Religious & Self-Respect Movements	
<b>Jan-‘22</b>	<b>III</b>	Causes for the growth of Nationalism	
<b>Feb-‘22</b>	<b>IV</b>	Freedom Struggle from 1920 to 1947:	
<b>Mar-‘22</b>	<b>V</b>	Muslim League & the Growth of Communalism	

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DEPARTMENT OF HISTORY**

**SEMESTER – V**

**CURRICULAR PLAN**

Subject Code:HIS501C Titles: Age of Rationalism and Humanism –The World Between  
15th& 18th Century

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>Nov-2021</b>	<b>I</b>	Feudalism -Geographical Discoveries:	
<b>Dec-2021</b>	<b>II</b>	The Renaissance Movement	
<b>Jan-‘22</b>	<b>III</b>	Emergence of Nation States	
<b>Feb-‘22</b>	<b>IV</b>	Age of RevolutionsAMERICAREvolution	
<b>Mar-‘22</b>	<b>V</b>	Age of Revolutions: The French Revolution	

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DEPARTMENT OF HISTORY**

**SEMESTER – V**

**CURRICULAR PLAN**

Subject Code:HIS502C Titles:History & Culture of Andhra Desa (from 12th to 19th Century  
A.D)

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>Nov-2021</b>	<b>I</b>	Andhra during 12th& 13th Centuries A.D	
<b>Dec-2021</b>	<b>II</b>	Andhra between 14th & 16th Centuries A.D	
<b>Jan-‘22</b>	<b>III</b>	Andhra through 16th& 17th Centuries A.D	
<b>Feb-‘22</b>	<b>IV</b>	The 18th& 19th Centuries in Andhra	
<b>Mar-‘22</b>	<b>V</b>	Impact of Company Rule on Andhra	

## DEPARTMENT OF HISTORY

### SEMESTER – II CURRICULAR PLAN

Subject Code:HIST21 Title: Medieval Indian history and Culture(1206 A.D to 1764 A.D)

Month	Unit No.	Topic to be covered	Remarks
June -'22	I	Impact of Turkish Invasions	
July-'22	II	Impact of Islam on Indian Society and Culture	
Aug-'22	III IV	Emergence of Mughal Empire Administration, Economy,Society	
Sep-'22	V	India under Colonial Hegemony	

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DEPARTMENT OF HISTORY  
SEMESTER – IV  
CURRICULAR PLAN**

**Subject Code: HIST401 Title: HISTORY & CULTURE OF ANDHRA (FROM 1512 TO 1956 AD)**

MONTH	UNIT NO.	TOPIC TO BE COVERED	REMARKS
JUNE -'22	I	1.1-Andhra through 16th& 19th Centuries AD:	
JULY-'22	II	Andhra under British rule: Administration	
AUG-'22	III IV	Social Reform & New Literary Movements Freedom Movement in Andhra (1885-1947):	
SEP-'22	V	Movement for separate Andhra State	

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DEPARTMENT OF HISTORY  
SEMESTER – IV  
CURRICULAR PLAN**

**Subject Code: HIS401 Title: HISTORY OF MODERN WORLD (From 15th Cent. AD to 1945 AD)**

<b>MONTH</b>	<b>UNIT NO.</b>	<b>TOPIC TO BE COVERED</b>	<b>REMARKS</b>
<b>JUNE -'22</b>	<b>I</b>	Transformation from Medieval to Modern Era	
<b>JULY-'22</b>	<b>II</b>	American Revolution (1776); French Revolution (1789)	
<b>AUG-'22</b>	<b>III IV</b>	Unification of Italy; Unification of Germany Communist Revolution in Russia	
<b>SEP-'22</b>	<b>V</b>	World War II: Causes Fascism & Nazism	

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DEPARTMENT OF HISTORY  
SEMESTER – VI  
CURRICULAR PLAN**

**Subject Code: HIS601GETitle: History of Modern Europe (from 19th Century to 1945 A.D)**

<b>MONTH</b>	<b>UNIT NO.</b>	<b>TOPIC TO BE COVERED</b>	<b>REMARKS</b>
<b>JUNE -'22</b>	<b>I</b>	Industrial Revolution: Origin, Nature and Impact	
<b>JULY-'22</b>	<b>II</b>	Unification Movements in Italy & Germany and their Impact.	
<b>AUG-'22</b>	<b>III IV</b>	Communist Revolution in Russia World War I:	
<b>SEP-'22</b>	<b>V</b>	World War II	

**DEPARTMENT OF ECONOMICS  
SEMESTER – I**

**CURRICULAR PLAN**

Subject Code: **ECOT11B**

Title: **MICRO ECONOMIC ANALYSIS**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>Nov-2021</b>	<b>I</b>	Economic analysis and Methodology	
<b>Dec-2021</b>	<b>II</b>	Theory of Consumption	
<b>Jan - 2022</b>	<b>II</b> <b>III</b>	Theory of Consumption Theory of Production	
<b>Feb-2022</b>	<b>IV</b>	Theory of Exchange	
<b>Mar-2022</b>	<b>V</b>	Theory of Distribution	

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DEPARTMENT OF ECONOMICS**

**SEMESTER – III  
CURRICULAR PLAN**

Subject Code: **ECO 301C**

Title : **DEVELOPMENT ECONOMICS**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>Nov-2021</b>	<b>I</b>	Economic Growth & Development	
<b>Dec-2021</b>	<b>I</b> <b>II</b>	Economic Growth & Development Modern Economic Growth	
<b>Jan-‘22</b>	<b>III</b>	Theories of Development and under development	
<b>Feb-‘22</b>	<b>IV</b> <b>V</b>	Strategies of Economic development Institutions and Economic Development	
<b>Mar-‘22</b>	<b>V</b>	Institutions and Economic Development	



**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**  
**DEPARTMENT OF ECONOMICS**  
**SEMESTER – III**

**CURRICULAR PLAN**

Subject Code: FM 301C Title: **FINANCIAL MARKETS**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>Nov-2021</b>	<b>I</b>	Introduction	
<b>Dec-2021</b>	<b>I</b>	Introduction	
<b>Jan-‘22</b>	<b>II</b>	Money market	
<b>Feb-‘22</b>	<b>III</b>	Capital Market	
<b>Mar-‘22</b>	<b>III</b>	Capital Market	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**  
**DEPARTMENT OF ECONOMICS**

**SEMESTER – V**

**CURRICULAR PLAN**

Subject Code: ECO 501 Titles: **ECONOMIC DEVELOPMENT AND INDIAN ECONOMY**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>Nov-2021</b>	<b>I</b>	Concept of Economic Growth	
<b>Dec-2021</b>	<b>II</b>	Sustainable Development	
<b>Jan-‘22</b>	<b>III</b>	Basic Features of Indian Economy	
<b>Feb-‘22</b>	<b>IV</b>	National Income in India	
<b>Mar-‘22</b>	<b>V</b>	Economic Reforms	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**  
**DEPARTMENT OF ECONOMICS**

**SEMESTER – V**  
**CURRICULAR PLAN**

Subject Code: ECO 502      Titles: **INDIAN AND ANDHRA PRADESH ECONOMY**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>Nov-2021</b>	<b>I</b>	Indian Agriculture	
<b>Dec-2021</b>	<b>II</b>	Structure and Growth of Indian Industry	
<b>Jan-‘22</b>	<b>III</b>	Disinvestment in India	
<b>Feb-‘22</b>	<b>IV</b>	Planing in Indian Economy	
<b>Mar-‘22</b>	<b>V</b>	Andhra Pradesh Economy	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**

**DEPARTMENT OF ECONOMICS**

**SEMESTER – II**  
**CURRICULAR PLAN**

Subject Code: **ECOT21B**      Title: **MACRO ECONOMIC ANALYSIS**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
June -‘22	I	Introduction and National Income
	II	Theories of Employment
July-‘22	II	Theories of Employment
	III	Money and Banking
Aug-‘22	III	Money and Banking
	IV	Inflation and Trade cycles
Sep-‘22	V	Finance and Insurance

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU  
DEPARTMENT OF ECONOMICS**

**SEMESTER – IV  
CURRICULAR PLAN**

Subject Code: **ECO 401C** Title: **ECONOMIC DEVELOPMENT IN INDIA  
AND ANDHRA PRADESH**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
June -'22	I	Basic features of Indian Economy
	II	National Income and Demography
July-'22	II	National Income and Demography
	III	Agricultural and Industrial development
Aug-'22	III	Agricultural and Industrial development
	IV	Indian Public Finance
Sep-'22	V	Andhra Pradesh Economy

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU  
DEPARTMENT OF ECONOMICS**

**SEMESTER – IV  
CURRICULAR PLAN**

Subject Code: **ECO 402C** Title: **STATISTICAL METHODS FOR ECONOMICS**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
June -'22	I	Nature and Definition of Statistics
July-'22	II	Collection of Data & Diagrammatic Analysis
	III	Means of Central tendency
Aug-'22	III	Means of Central tendency
	V	Correlation and Regression

Sep-'22	V	Time Series & Index numbers
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**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU  
DEPARTMENT OF ECONOMICS**

**SEMESTER – VI  
CURRICULAR PLAN**

Subject Code: **ECO 601C** Title: **AGRCULTURAL ECONOMICS**

Month	Unit No.	Topic to be covered
June -'22	I	Nature and scope of Agricultural economics
July-'22	II	Concept of Production Function
	III	Growth and Productivity , Trends in India Agriculture
Aug-'22	III	Growth and Productivity , Trends in India Agriculture
	IV	Systems of Farming
Sep-'22	V	Emerging Trends in Production process etc..

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU  
DEPARTMENT OF POLITICAL SCIENCE  
SEMESTER – I**

**CURRICULAR PLAN**

Subject Code: **POL11B** Title: **INTRODUCTION TO POLITICAL SCIENCE**

Month	Unit No.	Topic to be covered	Remarks
Nov-2021	I	Introduction	
Dec-2021	II	State	
Jan - 2022	III	Concepts of Political science	
Feb-2022	IV	Theories of Rights	
Mar-2022	V	Political ideologies	

**SEMESTER – III  
CURRICULAR PLAN**

Subject Code: **POLT301C** Title : **INDIAN GOVERNMENT AND POLITICS**

Month	Unit No.	Topic to be covered	Remarks
Nov-2021	I	Social and ideologies bases of Indian constitution	
Dec-2021	II	Individual and State	
Jan-'22	III	Union Executive	
Feb-'22	IV	State Executive	
Mar-'22	V	The Indian Judiciary	

**SEMESTER – V**  
**CURRICULAR PLAN**

Subject Code: pol501c Titles: E Governance

Month	Unit No.	Topic to be covered	Remarks
Nov-2021	I	Introduction to E-Governance	
Dec-2021	II	E-Governance in India	
Jan-'22	III	Role of ICT	
Feb-'22	IV	E-Governance Technology Act	
Mar-'22	V	E-Governance Projects	

**SEMESTER – V**  
**CURRICULAR PLAN**

Subject Code: pol502 Titles: Local Administration

Month	Unit No.	Topic to be covered	Remarks
Nov-2021	I	Introduction to Local Administration	
Dec-2021	II	Decentralization of Powers	
Jan-'22	III	Local Governments grants	
Feb-'22	IV	Challenges for Local administration	
Mar-'22	V	Types of Reports	

**SEMESTER – II**  
**CURRICULAR PLAN**

Subject Code: polt21 Title: **Basic Organs of the Governments**

Month	Unit	Topic to be covered	Remarks
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	<b>No.</b>		
June -'22	<b>I</b>	<b>Constitution</b>	
July-'22	<b>II</b>	<b>Organs of Govt</b>	
Aug-'22	<b>III</b> <b>IV</b>	<b>Forms of Govt</b> <b>Democracy</b>	
Sep-'22	<b>V</b>	<b>Political parties Pressures group Public Opinion</b>	

**SEMESTER – IV**  
**CURRICULAR PLAN**

**Subject Code: pol401 Title: Indian Political Process**

<b>MONTH</b>	<b>UNIT NO.</b>	<b>TOPIC TO BE COVERED</b>	<b>REMARKS</b>
<b>JUNE -'22</b>	<b>I</b>	Federal processes	
<b>JULY-'22</b>	<b>II</b>	Electoral processes	
<b>AUG-'22</b>	<b>III</b> <b>IV</b>	Gross Route Democracy-Decentralization Indian political system	
<b>SEP-'22</b>	<b>V</b>	Regularities and governance institutions	

**SEMESTER – IV**  
**CURRICULAR PLAN**

**Subject Code: pol402 Title: Western Political Thought**

<b>MONTH</b>	<b>UNIT NO.</b>	<b>TOPIC TO BE COVERED</b>	<b>REMARKS</b>
<b>JUNE -'22</b>	<b>I</b>	Ancient Greek Political Thought	
<b>JULY-'22</b>	<b>II</b>	Medieval and Modern Political Thought	
<b>AUG-'22</b>	<b>III</b> <b>IV</b>	Contractual Political thought Utilitarian political thought	
<b>SEP-'22</b>	<b>V</b>	Marxist Political thought	

**DEPARTMENT OF COMPUTER SCIENCE  
2021-2022 CURRICULAR PLANS**

**ODD SEMESTER**

**SEMESTER – I**

**Subject Code: CSCT11B**

**Title: Problem Solving in ‘C’**

Month	Unit No.	Topic to be covered
Dec-2021	1	Introduction to computers: Block diagram of a computer
Jan - 2022	2	Decision Control and Looping Statements
Feb -2022	3	one dimensional, two dimensional and multi dimensional arrays
Mar-2022	4	Functions & Structures
April-2022	5	Pointers & Files

**SEMESTER – I**

**Subject Code: CABT11A**

**Title: INTRODUCTION TO INFORMATION TECHNOLOGY**

Month	Unit No.	Topic to be covered
Dec-2021	1	Introduction, Evolution of Computers, Generations of Computers, Memory Representation
Jan - 2022	2	Types of Input/output Devices, Types of Operating Systems
Feb -2022	3	Components Of Information Technology, Evolution Of Internet
Mar-2022	4	Components Of Data Communication
April-2022	5	Introduction to Computer Networks, Types of Computer Networks

**SEMESTER – I**

**Subject Code: CSCT11B**

**Title: E-COMMERCE & WEB DESIGNING**

Month	Unit No.	Topic to be covered
Dec-2021	1	WWW and its Evaluation, Types of networks, Network Topologies, Structure of HTML
Jan - 2022	2	Ordered List Unordered List Link tag image tag
Feb -2022	3	forms creation Frame Creation, Types of CSS
Mar-2022	4	1. Definition of E- Commerce and its advantages & disadvantages 2. Business Models for Ecommerce

April-2022	5	Online Marketing E- CRM Architectural components
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**SEMESTER – I**

**Subject Code: LSC1 Title: BASIC COMPUTER APPLICATIONS**

Month	Unit No.	Topic to be covered
Dec-2021	1	Basics of Computers, Desktop, Recycle bin, My Computer, Documents, Pictures, Music, Videos, Task Bar, Control Panel.
Jan - 2022	2	Features of MS-Word - MS-Word Window Components Headers and Footers
Feb -2022		
Mar-2022	3	Creating a new worksheet, Selecting cells, Entering and editing Text, Features of PowerPoint
April-2022		

**SEMESTER – III**

**Subject Code: CSC-301C Title: DATA BASE MANAGEMENT SYSTEMS**

Month	Unit No.	Topic to be covered
Nov-2021	1	Classification of Database Management Systems, advantages of database approach.
Dec-2021	2	Entity-Relationship Model, constraints on specialization and generalization, advantages of ER modelling.
Jan -2022	3	CODD Rules, relational data model, concept of key, relational integrity, relational algebra, relational algebra operations.
Jan-2022	4	History of SQL Standard, Commands in SQL, Data Types in SQL, Data Definition Language, Selection Operation, Projection Operation.
Feb-2022	5	Structure of PL/SQL, PL/SQL Language Elements, Data Types, Operators Precedence, Control Structure.

**SEMESTER – III**

**Subject Code: CCSC-301C**

**Title: Programming in 'C'**



Month	Unit No.	Topic to be covered
Nov-2021	1	Introduction to computers: Block diagram of a computer
Dec-2021	2	Decision Control and Looping Statements
Jan -2022	3	one dimensional, two dimensional and multi dimensional arrays
Jan-2022	4	Functions & Structures
Feb-2022	5	Pointes

**SEMESTER – V**

**Subject Code: CSC-501C Title: DATA BASE MANAGEMENT SYSTEMS**

Month	Unit No.	Topic to be covered
Sep-2021	1	Files and File Systems, Data Models
Oct-2021	2	Relational Database & Data Modeling
Nov -2021	3	Data base Tables and Normalization, The Database Life Cycle
Nov-2021	4	Data Definition Commands, Data Manipulation Commands, Select queries
Dec-2021	5	Triggers, Stored Procedures, Pl/ SQL Stored Functions

**SEMESTER – V**

**Subject Code CSC-502C Title: SOFTWARE ENGINEERING**

Month	Unit No.	Topic to be covered
Sep-2021	1	The Changing Nature of Software, Software Myths, Legacy Software.
Oct-2021	2	The Waterfall Models - Increment Process Models
Nov -2021	3	Requirements Engineering Tasks - Initiating The Requirements Engineering Process
Nov-2021	4	Design Process And Design Quality
Dec-2021	5	Software Quality Assurance (SQA)

**SEMESTER – V**

**Subject Code CCSC-505C Title: OBJECT ORIENTED PROGRAMMING USING JAVA**

Month	Unit No.	Topic to be covered
Sep-2021	1	Basic Concepts of OOP, Benefits of OOP
Oct-2021	2	Java program structure, Variables & Data Types
Nov -2021	3	Decision Making & Branching Statements
Nov-2021	4	Constructors, Method overloading
Dec-2021	5	Final Classes, Abstract Methods and Classes, Arrays, Strings And Vectors

**SEMESTER – V**

Subject Code **CCSC-506C** Title: **DATA BASE MANAGEMENT SYSTEMS**

Month	Unit No.	Topic to be covered
Sep-2021	1	Files and File Systems, Data Models
Oct-2021	2	Relational Database & Data Modeling
Nov -2021	3	Data base Tables and Normalization, The Database Life Cycle
Nov-2021	4	Data Definition Commands, Data Manipulation Commands, Select queries
Dec-2021	5	Triggers, Stored Procedures, Pl/ SQL Stored Functions

**SEMESTER – V**

Subject Code **CCSC-507C** Title: **WEB TECHNOLOGIES**

Month	Unit No.	Topic to be covered
Sep-2021	1	Document body text, Hyperlinks, Lists, Tables
Oct-2021	2	Cascading Style Sheets ,Variables, String Manipulations
Nov -2021	3	Data and objects in java script, Regular expressions
Nov-2021	4	document type definition, XML Schema
Dec-2021	5	JSP Lifecycle

**EVEN SEMESTER**

**SEMESTER – II**

**Subject Code CSCT21B Title: DATA STRUCTURES USING C**

Month	Unit No.	Topic to be covered
June-2022	1	Linear and Non- Linear Data Structures
July-2022	2	Linked Lists, Stacks, Queues
Aug -2022	3	Operations on a Binary Search Tree
Aug -2022	4	Traversal of Graphs, Spanning Trees
Sep-2022	5	Bubble Sort, Insertion Sort, Merge Sort

**SEMESTER – II****Subject Code CABT21A Title: E-COMMERCE & WEB DESIGNING**

Month	Unit No.	Topic to be covered
June-2022	1	e-commerce business models
July-2022	2	Security and Encryption
Aug -2022	3	Models and methods of e-payments
Aug -2022	4	E-commerce applications in various industries like {banking, insurance, payment of utility bills}
Sep-2022	5	HTML document, Anchor tag Hyperlinks, Head and body section

**SEMESTER – II****Subject Code CABT21A Title: INFORMATION TECHNOLOGY**

Month	Unit No.	Topic to be covered
June-2022	1	Introduction to computers, Generations of computers, An overview of computer system, Types of computers.
July-2022	2	Types of OS - Booting process, DOS – Commands (internal & external), Wild card characters.
Aug -2022	3	System software and application software, Programming Languages.
Aug -2022	4	Telecommunication and Networks Communication media& channel cable media.
Sep-2022	5	Artificial intelligence and business intelligence.

**SEMESTER – II**

**Subject Code** CABT22A

**Title:** COMPUTER APPLICATIONS

Month	Unit No.	Topic to be covered
June-2022	1	Features of MS-Word – MS-Word Window Components
July-2022	2	Features of PowerPoint – Creating a Blank Presentation - Creating a Presentation using a Template
Aug -2022	3	Creating a new worksheet, Selecting cells, Entering and editing Text, Numbers.
Aug -2022	4	Creating a Simple Database and Tables, Forms: The Form Wizard.
Sep-2022	5	Queries and Dynasts, Creating and using select queries, Returning to the Query Design.

**SEMESTER – II**

**Subject Code:** SDCSC02

**Title:** DIGITAL MARKETING

Month	Unit No.	Topic to be covered
June-2022	1	Difference between Traditional Marketing and Digital Marketing, Digital Marketing Process.
July-2022	2	What are Search engines and How Search Engines Work, SEO Content Writing and Rewriting, On page Optimization strategies.
Aug -2022		
Aug -2022	3	Free and Paid Marketing, Directory Submission Techniques, Advantages and Disadvantages of Forums, Twitter Marketing.
Sep-2022		

**SEMESTER – IV**

**Subject Code** CSCT01

**Title:** OBJECT ORIENTATED PROGRAMMING THROUGH JAVA

Month	Unit No.	Topic to be covered
Mar-2022	1	Features of Java, The Java virtual Machine, Parts of Java, Operators, Priority of Operators
May-2022	2	Creating Strings, String Class Methods, String Comparison, Immutability of Strings, Method Header or Method Prototype
June -2022	3	Polymorphism with Variables, Polymorphism using Methods, Types of Data Types, Casting Primitive Data Types
June-2022	4	Stream, Creating a File using File Output Stream, Reading Data from a File using FileInputStream, <b>Threads:</b> Single Tasking, Multi Tasking, Uses of Threads, Creating a Thread and Running it
July-2022	5	<b>Applets:</b> Creating an Applet, Uses of Applets, <APPLET> tag, A Simple Applet, <b>Java Database Connectivity:</b> Database Servers, Database Clients, JDBC

**SEMESTER – IV**Subject Code **CSCT41C**Title: **OPERATING SYSTEM**

Month	Unit No.	Topic to be covered
Mar-2022	1	History and Evolution of OS, Basic OS functions, Process Control & Real time Systems.
May-2022	2	Kernels, System Calls and System Programs, System View of the Process and Resources
June -2022	3	Deadlock, Deadlock Characterization, Necessary and Sufficient Conditions for Deadlock, Deadlock Handling Approaches
June-2022	4	Memory Management: Physical and Virtual Address Space; Memory Allocation Strategies
July-2022	5	File and I/O Management, OS security : Directory Structure, File Operations, File Allocation Methods, Device Management, Pipes, Buffer, Shared Memory

**SEMESTER – IV**Subject Code **CABT41A**Title: **Database Management System**

Month	Unit No.	Topic to be covered
Mar-2022	1	Files and File Systems, Data Models
May-2022	2	Relational Database & Data Modeling
June -2022	3	Data base Tables and Normalization, The Database Life Cycle
June-2022	4	Data Definition Commands, Data Manipulation Commands, Select queries
July-2022	5	Triggers, Stored Procedures, PL/ SQL Stored Functions

**SEMESTER – IV**Subject Code **CCSC-405**Title: **OBJECT ORIENTATED PROGRAMMING THROUGH JAVA**

Month	Unit No.	Topic to be covered
Mar-2022	1	Features of Java, The Java virtual Machine, Parts of Java, Operators, Priority of Operators
May-2022	2	Creating Strings, String Class Methods, String Comparison, Immutability of Strings, Method Header or Method Prototype
June -2022	3	Polymorphism with Variables, Polymorphism using Methods, Types of Data Types, Casting Primitive Data Types
June-2022	4	Stream, Creating a File using File Output Stream, Reading Data from a File using FileInputStream, <b>Threads:</b> Single Tasking, Multi Tasking, Uses of Threads, Creating a Thread and Running it
July-2022	5	<b>Applets:</b> Creating an Applet, Uses of Applets, <APPLET> tag, A Simple Applet, <b>Java Database</b>

		<b>Connectivity:</b> Database Servers, Database Clients, JDBC
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**SEMESTER – VI**

**Subject Code** CSC-601(GE) **Title:** WEB TECHNOLOGIES

Month	Unit No.	Topic to be covered
Jan-2022	1	Document body text, Hyperlinks, Lists, Tables
Feb-2021	2	Cascading Style Sheets ,Variables, String Manipulations
Mar -2021	3	Data and objects in java script, Regular expressions
Mar-2021	4	document type definition, XML Schema
April-2021	5	JSP Lifecycle

**SEMESTER – VI**

**Subject Code** CSC-602CE **Title:** PHP, MySQL & Word Press

Month	Unit No.	Topic to be covered
Jan-2022	1	The Building blocks of PHP
Feb-2021	2	Calling functions, Defining Functions, Returning the values from User-Defined Functions
Mar -2021	3	Creating Forms, Accessing Form Input with User defined Arrays
Mar-2021	4	database design process, MySQL Versus MySQLi Functions
April-2021	5	installing and configuring word press

**SEMESTER – VI**

**Subject Code** CSC-603CE **Title:** JQUERY/AJAX/JSON/ANGULAR JS

Month	Unit No.	Topic to be covered
Jan-2022	1	jQuery Selectors
Feb-2021	2	DOM Manipulation Methods
Mar -2021	3	jQuery UI theme
Mar-2021	4	QueryAJAX
April-2021	5	AngularJS built-in directives

**SEMESTER – VI**

**Subject Code** CSC PROJ-604 P **Title:** PROJECT (Java, PHP & MYSQL)

**SEMESTER – VI**Subject Code **CCSC-605CE** Title: **TALLY**

Month	Unit No.	Topic to be covered
Jan-2022	1	Manual Accounting and Accounting Packages.
Feb-2021	2	Gateway of Tally
Mar -2021	3	Ledger Creation Single and multiple Ledgers
Mar-2021	4	Journal Voucher, Contra Voucher, Debit & Credit Note
April-2021	5	Generating the Reports from Tally

**SEMESTER – VI**Subject Code **CCSC-606CE** Title: **E-COMMERCE**

Month	Unit No.	Topic to be covered
Jan-2022	1	e-Commerce and the Trade Cycle
Feb-2021	2	Characteristics of B2B EC, Models of B2B EC,
Mar -2021	3	Intranet and Extranet
Mar-2021	4	Ethical and Other public Policy Issues
April-2021	5	Internet Protocols

**SEMESTER – VI**Subject Code **CCSC-607CE** Title: **PHP & MY SQL**

Month	Unit No.	Topic to be covered
Jan-2022	1	Data Types, Operators and Expressions
Feb-2021	2	Array-Related Function, Manipulating Strings with PHP
Mar -2021	3	Creating Forms, Accessing Form
Mar-2021	4	Files with include(), image Creation from User Input
April-2021	5	MySQL Versus MySQL Functions

DEPARTMENT OF BOTANY

Curricular plan

Semester – I

subject code: BOTTIIA

Title of the paper: Fundamentals of microbes and Non –Vascular Plants

Month	Unit No	Topic to be Covered	Remaks
Nov- 2021	I	<p>Origin of life and viruses Origin of life, concept of primary Abiogenesis; Miller and Urey experiment. Five kingdoms classification of R.H. Whittaker. Discovery of microorganisms, Pasteur experiments, germ theory of diseases. Shape and symmetry of viruses; structure of TMV and Gemini virus; multiplication of TMV, a brief account of Prions and Viroids. A general account on symptoms of plant diseases caused by Viruses. Transmission of plant viruses and their control. Significance of viruses in vaccine production, bio-pesticides.</p>	
Dec-2021	II	<p>Special groups of Bacteria and Eubacteria Brief account of Archaeobacteria, Actinomycetes and Cyanobacteria. Cell structure and nutrition of Eubacteria Reproduction- Asexual (Binary fission and endospores) and bacterial recombination. (Conjugation, Transformation, Transduction). Economic importance of Bacteria with reference to their role in Agriculture and industry (fermentation and medicine). A general account on symptoms of plant diseases caused by Bacteria; Citrus canker.</p>	
Jan -2022	III	<p>Fungi &amp; Lichens General characteristics of fungi and Ainsworth classification (upto classes). Structure, reproduction and life history of (a) <i>Rhizopus</i> (Zygomycota) and (b) <i>Puccinia</i> (Basidiomycota). Economic uses of fungi in food industry, pharmacy and agriculture. A general account on symptoms of plant diseases caused by Fungi; Blast of Rice. Lichens- structure and reproduction.</p>	
Feb-2022	IV	<p>Algae General characteristics of Algae (pigments, flagella and reserve food material), Fritsch classification (up to classes). Thallus organization and life cycles in Algae. Occurrence, structure, reproduction and life cycle of (a) <i>Spirogyra</i> (Chlorophyceae) and (b) <i>Polysiphonia</i> (Rhodophyceae). Economic importance of Algae.</p>	
Mar- 2022	V	<p>Bryophytes General characteristics of Bryophytes; classification upto classes. Occurrence, morphology, anatomy, reproduction (developmental details are not needed) and life cycle of (a) <i>Marchantia</i> (Hepaticopsida) and (b) <i>Funaria</i> (Bryopsida). General account on evolution of sporophytes in Bryophyta.</p>	



Month	Unit No	Topic to be Covered	Remaks
Nov-2021	1	<p><b>Anatomy of Angiosperms</b>            Organization of apical meristems : Tunica-carpus theory and Histogen theory.            Tissue systems–Epidermal, ground and vascular.            Anomalous secondary growth in <i>Boerhaavia</i> and <i>Dracaena</i>.            Study of timbers of economic importance - Teak, Red sanders and Rosewood.</p>	
Dec-2021	II	<p><b>Embryology of Angiosperms</b>            Structure of anther, anther wall, types of tapetum. Microsporogen and development of male gametophyte.            Structure of ovule, megasporogenesis; monosporic (<i>Polygonum</i>), bisporic (<i>Allium</i>) and tetrasporic (<i>Peperomia</i>) types of embryo sacs.            Outlines of pollination, pollen – pistil interaction and fertilization.            Endosperm - Types and biological importance - Free nucle cellular, helobial and ruminant.            Development of Dicot (<i>Capsella bursa-pastoris</i>) embryo.</p>	
Jan-2022	III	<p><b>Basics of Ecology</b>            Ecology: definition, branches and significance of ecology.            Ecosystem: Concept and components, energy flow, food chain, food web, ecological pyramids.            Plants and environment: Climatic (light and temperature), edaphic and biotic factors.            Ecological succession: Hydrosere and Xerosere.</p>	
Feb-2022	IV	<p><b>Population, Community and Production Ecology</b>            Population ecology: Natality, mortality, growth curves, ecotypes, ecads            Community ecology: Frequency, density, cover, life forms, biological spectrum            Concepts of productivity: GPP, NPP and Community Respiration            Secondary production, P/R ratio and Ecosystems.</p>	
Mar-2022	V	<p><b>Basics of Biodiversity</b>            Biodiversity: Basic concepts, Convention on Biodiversity - Earth Summit.            Value of Biodiversity; types and levels of biodiversity and</p>	

		Threats to biodiversity Biodiversity Hot spots in India. Biodiversity in North Eastern Himalayas and Western Ghats. Principles of conservation: IUCN threat-categories, RED data book Role of NBPGR and NBA in the conservation of Biodiversity.	
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Semester – V

subject code: BOT501

Title of the paper: **Cell Biology, Genetics and Plant Breeding. Cell Biology, Genetics and Plant Breeding.**

Month	Unit No	Topic to be Covered	Remaks
Nov-2021	I	<b>Cell Biology</b> Cell, Ultra Structure and functions of cell wall. Molecular Organization of cell membranes. Chromosomes; morphology, organization of DNA in a chromosome (Nucleosome model) Euchromatin and Heterochromatin	
Dec-2021	II	DNA as the Genetic Material: Griffith's and Avery's Transformation Experiment. Hershey - Chase Bacteriophage experiment. DNA Structure (Watson & crick model) and replication of DNA (Semi Conservative). Types of RNA (mRNA, tRNA, rRNA), their structure and function.	
Jan - 2022	III	Mendelian Inheritance Mendelian Inheritance (Mono – Di-hybrid Crosses), Back cross and Test cross. Linkage: concept, complete and In-complete Linkage, Coupling and Repulsion; Linkage Maps Based on Two and Three Point cross Crossing over concept and significance.	
Feb - 2022	IV	<b>Gene Expression</b> Organization of gene, Transcription and Translation. Mechanism and regulation of Gene Expression in Prokaryotes (Lac operon). Mutations: Chromosomal Aberrations, Gene Mutations and Transposable Elements	
Mar-2022	V	<b>Plant Breeding</b> Introduction and objectives of Plant Breeding. Methods of Crop Improvement: Procedure, Advantages and limitations of Introduction, Selection and Hybridization (Out lines only).	

Semester –V

subject code: BOT502

Title of the paper: **PLANT ECOLOGY & PHYTOGEOGRAPHY**

Month	Unit No	Topic to be Covered	Remaks
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Nov-2021	I	<b>Elements of Ecology</b> Ecology: Definition, branches and significance of ecology. Climatic factors: Light, Temperature. Edaphic factor: Origin, formation, composition and soil profile. Biotic factor, Ecological adaptations of Plants.	
Dec-2021	II	<b>Ecosystem Ecology</b> Ecosystem: concept and components, energy flow, food chain, food web, Ecological Pyramids. Productivity of ecosystem-Primary, Secondary and Net productivity. Biogeochemical cycles- Carbon, Nitrogen and Phosphorous.	
Jan - 2022	III	<b>Population &amp; Community ecology.</b> Population- definition, characteristics and importance (Density, Natality, Mortality, Growth Curves) outlines- ecotypes. Plant communities- characters of a community, outlines – Frequency, density, cover, life forms, Biological Spectrum. Ecological Succession: Hydrosere and Xerosere.	
Feb - 2022	IV	<b>Phytogeography</b> Principles of Phytogeography, Distribution ( Wides, Endemic, Discontinuous species. Phytogeography regions of India. Endemism – types and Causes.	
Mar-2022	V	<b>Plant Biodiversity and its Importance</b> Definition, Levels of Biodiversity – genetic, species and ecosystem. Biodiversity and Hot-spots of India: North Eastern, Himalayas and Western Ghats. Loss of Biodiversity-causes and Conservation (In-situ and Ex-Situ Methods).	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYURU**  
**DEPARTMENT OF ZOOLOGY**  
**SEMESTER – I**

**CURRICULAR PLAN**

Subject Code: **ZOOT11A**

Title: **Animal Diversity Biology of Non – Chordates**

Month	Unit No.	Topic to be covered	Remarks
Nov-2021 (7)	I	Origin of metazoans Type study: <i>Polystomella</i> (structure and life cycle) Locomotion in protozoans Nutrition in protozoans Type study: <i>Sycon</i> (Structure, histology and skeleton) Canal system in sponges	
Dec-2021	II	Type study: <i>Obelia</i> . (Structure – polyp and medusa and life cycle) Polymorphism in cnidarians.	

		Corals and coral reefs Ctenophora (structure and affinities)	
Jan - 2022	III	Type study: <i>Fasciola hepatica</i> (Structure, reproduction, life cycle and pathogenicity) Parasitic adaptations in helminthes Type study: <i>Ascarislumbricoides</i> (Structure, reproduction, life cycle and pathogenicity) Type study: <i>Hirudinaria</i> (Structure, circulatory, excretory and reproductive systems) Coelom and coelomoducts in annelids	
Feb-2022	IV	Structural affinities of Onychophora Type study: <i>Macrobrachiumrosenbergii</i> (Structure, appendages and Respiratory system) Economic importance of insects (Beneficial – Lac insect, honey bee, <i>Bombyxmori</i> and Lady bird; Harmful – house fly, mosquito, locustand bedbug)	
Mar-2022	IV V	Metamorphosis in insects Study of Pearl Oyster and Pearl Formation Torsion in gastropods Water-vascular system Echinoderm larvae <i>Balanoglossus</i> - Structure and affinities	

**SEMESTER – III  
CURRICULAR PLAN**

Subject Code: **ZOO-301**

Title: **Cell Biology, Genetics, And Molecular Biology & Evolution**

Month	Unit No.	Topic to be covered	Remarks
Nov-2021	I	Definition, history, prokaryotic and eukaryotic cells, virus, viroids, mycoplasma Electron microscopic structure of animal cell. Plasma membrane –Models and transport functions of plasma membrane. Structure and functions of Golgi complex, Endoplasmic Reticulum and Lysosomes Structure and functions of Ribosomes, Mitochondria, Nucleus, Chromosomes (Note: 1. General pattern of study of each cell organelle – Discovery, Occurrence, Number, Origin Structure and Functions with suitable diagrams) 2. Need not study cellular respiration under mitochondrial functions)	
Dec-2021	II	Mendel's work on transmission of traits Gene Interaction – Incomplete Dominance, Codominance, Lethal Genes  Polygenes (General Characteristics & examples); Multiple Alleles (General Characteristics and Blood group inheritance  Sex determination (Chromosomal, Genic Balance, Hormonal, Environmental and Haplo-diploidy types of sex determination)	
Jan-'22	II III	Sex linked inheritance (X-linked, Y-linked & XY-linked inheritance) Mutations & Mutagenesis Chromosomal Disorders (Autosomal and Allosomal)	

		Human Genetics – Karyotyping, Pedigree Analysis (basics)Basics on Genomics and Proteomics	
<b>Feb-‘22</b>	<b>IV</b>	Central Dogma of Molecular Biology Basic concepts of – a. DNA replication – Overview (Semi-conservative mechanism, Semi-discontinuous mode, Origin & Propagation of replication fork) b. Transcription in prokaryotes – Initiation, Elongation and Termination, Post-transcriptional modifications (basics) c. Translation – Initiation, Elongation and Termination Gene Expression in prokaryotes (Lac Operon); Gene Expression in eukaryotes	
<b>Mar-‘22</b>	<b>V</b>	Origin of life Theories of Evolution: Lamarckism, Darwinism, Germ PlasmTheory, MutationTheory. Neo-Darwinism: Modern Synthetic Theory of Evolution, Hardy-WeinbergEquilibrium. Forces of Evolution: Isolating mechanisms, Genetic Drift, Natural Selection,and Speciation.	

**SEMESTER – V  
CURRICULAR PLAN**

Subject Code: **ZOO-501**

Title: Animal Biotechnology

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>Nov-2021</b>	<b>I</b>	Restriction modification systems : Types I, II and III- Nomenclature, Applications of Type II restriction enzymes in genetic engineering ,DNA polymerases, transferase, kinases and phosphatases,and DNA ligases Cloning Vectors: : Properties of Cloning Vectors Plasmid vectors:pBR and pUC 18, Bacteriophage and, Cosmids.Artificial Chromosome Vectors: BACs, YACs	
<b>Dec-2021</b>	<b>II</b>	Cloning: Procedure of gene cloning, Use of linkers and adaptors. Microinjection, electroporation, biolistic method (gene gun). PCR:- Basics of PCR, Principle and Procedure of PCR. DNA Sequencing: Sanger’s method of DNA sequencing- traditional and automated sequencing. Southern, Northern and Western blotting. DNA finger printing	
<b>Jan-‘22</b>	<b>III</b>	Cell culture media: Natural and Synthetic, Types Cell cultures-: primary culture, secondary culture. Continuous cell lines , Established Cell lines (common examples such as MRC, HeLa, CHO, BHK, ) Cryopreservation of cultures, Hybridoma Technology:- Cell fusion, Production of Monoclonal antibodies (mAb), Applications of mAb	

		Stem cells: Types of stem cells- Embryonic and Adult Stem Cells, Diabetes and Parkinson's diseases.	
Feb-'22	IV	Manipulation of reproduction in animals, Artificial Insemination, <i>In vitro</i> fertilization. Super ovulation, Embryo transfer, Embryo cloning. Transgenic Animals- Production of Transgenic Animals- sheep, fish	
Mar-'22	V	Industry: Fermentation- Different types of Fermentation. Submerged & Solid state, batch, Fed batch & Continuous (Short notes only) Downstream processing - Filtration, centrifugation, chromatography, spray drying , Fisheries: Polyploidy in fishes.	

**SEMESTER – V**

**CURRICULAR PLAN**

Subject Code: **ZOO-502**

Title: Animal Husbandry

Month	Unit No.	Topic to be covered	Remarks
Nov-2021	I	General introduction to poultry farming, Principles of poultry housing. Poultry houses. Systems of poultry farming. Management of chicks, growers, layers, and Broilers	
Dec-2021	II	Poultry feed management – Principles of feeding. Nutrient requirements for different stages of layers and broilers. Methods of feeding- Whole grain feeding system, Grain and mash method, All mash method, Pellet feeding.	
Jan-'22	II III	Poultry diseases – viral, bacterial, fungal and parasitic (two each); symptoms, control and management Selection, care and handling of hatching eggs, Egg testing. Methods of hatching. Brooding and rearing, Sexing of chicks.	
Feb-'22	IV	Breeds of Dairy Cattle and Buffaloes – Definition of breed; Classification of Indian Cattle breeds, exotic breeds and Indian buffalo breeds. Systems of inbreeding and crossbreeding. Housing of dairy animals – Selection of site for dairy farm; systems of housing – loose, housing system. Conventional dairy barn.	
Mar-'22	V	Care and management of dairy animals - Care and management of calf, heifer, milk animal, dry and pregnant animal, bulls and bullocks. Cleaning and sanitation of programme. Records to be maintained in a dairy farm	

**SEMESTER – III**

**CURRICULAR PLAN**Subject Code: **PF-301**Title: **Poultry Farming**

Month	Unit No.	Topic to be covered	Remarks
Nov-2021- Dec-2021	I	General introduction to poultry farming -Definition of Poultry; past and present scenario of poultry industry in India. Principles of poultry housing. Poultry houses. Systems of poultry farming. Management of chicks, growers and layers. Management of Broilers. Preparation of project report for banking and insurance	
Jan-'22 Feb-'22	II	Poultry feed management – Principles of feeding, Nutrient requirements for different stages of layers and broilers. Feed formulation and Methods of feeding. Poultry diseases – viral, bacterial, fungal and parasitic (two each); symptoms, control and management; Vaccination programme.	
Mar-'22	III	Selection, care and handling of hatching eggs. Egg testing .Methods of hatching. Brooding and rearing. Sexing of chicks. Farm and Water Hygiene, Recycling of poultry waste	

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DEPARTMENT OF ZOOLOGY(AQU)  
SEMESTER – I**

**CURRICULAR PLAN**Subject Code: **AQUT11A**Title: **Basic Principles of Aquaculture**

Month	Unit No.	Topic to be covered	Remarks
Nov-2021 (7)	I	Definition and History of Aquaculture Concept of Blue Revolution and Pradhan Mantri Matsya Sampada Yojana (PMMSY) Present status of Aquaculture at global level, India and Andhra Pradesh Aquaculture versus Agriculture; Present day needs with special reference to Andhra Pradesh Aquaculture resources: Ponds, tanks, lakes, reservoirs etc. Capture and Culture fisheries; Advantages of culture fishery over capture fishery	
Dec-2021	II	Lotic and lentic systems, streams and spring Classification of ponds based on water resources – spring, rain water, flood water, well water and water course ponds Functional classification of ponds – head pond, hatchery, nursery, rearing, production and stocking ponds; quarantine ponds, isolation ponds and wintering ponds .Hatchery design	
Jan - 2022		Important factors in the construction of an ideal fish pond –	

	<b>III</b>	site selection, topography, nature of the soil, water resources. Lay out and arrangement of ponds in a fish farm. Construction of an ideal fish pond – space allocation, structure and components of barrage Pond	
<b>Feb-2022</b>	<b>IV</b>	Types of aquaculture- Fresh water aquaculture Brackish water aquaculture Mariculture Aquaculture Systems – Pond, Raceways, Cage, Pen, Rafts, Running water, Water Recirculating Systems, Biofloc Technology and 3-C System. Pond culture practices- Traditional, Extensive, Modified Extensive, Semi-Intensive, Intensive & Super-intensive systems of fish and shrimp and their significance. Fin fish culture methods - Monoculture, Polyculture and Monosex culture and Integrated fish farming	
<b>Mar-2022</b>	<b>V</b>	Pre-stocking Management Dewatering, drying, ploughing/desilting Liming and fertilization; Need of fertilizer and manure application, NPK contents of different fertilizers and manures and precautions in their Application Predators, weeds and weed fish in culture ponds - Advantages and disadvantages of weed plants; Toxins used for weed control and control of predators. Algal blooms and their control Stocking Management – Stocking density and stocking Post-stocking Management Feeding: Role of nutrients Water quality: Physico-chemical conditions of soil and water optimum for culture – temperature, depth, turbidity, light, water and shore currents, PH, DOD, CO <sub>2</sub> , NH <sub>3</sub> , NO <sub>2</sub> and nutrients Measures to increase oxygen and reduce ammonia & hydrogen sulphide in culture ponds; correction of PH	

### SEMESTER – III

#### CURRICULAR PLAN

Subject Code: *AQU-301C*

Title: **Fresh water & Brackish water Aquaculture**

Month	Unit No.	Topic to be covered	Remarks
<b>Nov-2021</b> (7)	<b>I</b>	Status, scope and prospects of freshwater aquaculture in the world, India and AP Status, scope and prospects of brackish water aquaculture in the world, India and AP  Freshwater and brackish water resources in India. Special culture systems - brief study of culture in running water, re-circulatory systems, cages and pens, sewage-fed fish culture	
<b>Dec-2021</b>	<b>II</b>	Bundh breeding and Induced breeding of Indian major carp by hypophysation technique .Synthetic hormones used for induced breeding of carps. Types of fish hatcheries- traditional, Chinese and jar hatcheries. Preparation and Management of Indian major carp culture ponds – nursery, rearing and grow-out ponds. Culture of air-breathing fishes in India; Pangasius fish farming Exotic fishes introduced to India and their impact on indigenous species. Composite fish culture of Indian and exotic carps – compatibility and competition	



<b>Jan - 2022</b>	<b>III</b>	Breeding and hatchery management of freshwater prawn, <i>Macrobrachium rosenbergii</i> . Culture of <i>Macrobrachium rosenbergii</i> and <i>M. malcolmsonii</i> – biology, seed production, pond preparation, stocking, management, feeding, morph types and harvesting. Ornamental fish culture– Common freshwater and marine ornamental fishes; Fabrication, setting up and maintenance of freshwater and marine aquarium. Breeding and rearing of freshwater ornamental fishes	
<b>Feb-2022</b>	<b>IV</b>	Breeding and Hatchery management of a typical penaeid shrimp ( <i>Penaeus monodon</i> or <i>Litopenaeus vannamei</i> ) Transportation of shrimp seed and nursery management. Culture of <i>P. monodon</i> or <i>L. vannamei</i> –pond preparation, stocking, management of water, feed and diseases, and harvesting. Culture of mud crab, <i>Scylla serrata</i>	
<b>Mar-2022</b>	<b>V</b>	Breeding and Culture of milk fish, <i>Chanos chanos</i> . Breeding and Culture of Asian sea bass, <i>Lates calcarifer</i> . Breeding and Culture of grey mullet, <i>Mugil cephalus</i> . Fish and shellfish culture in cages and pens.	

**SEMESTER – V**

**CURRICULAR PLAN**

Subject Code: *AQU-501C*

Title: **Fish health management**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>Nov-2021 (7)</b>	<b>I</b>	Introduction to fish diseases –Definition and categories of diseases – Disease and environment Disturbance in cell structure – changes in cell metabolism, progressive and retrogressive tissue changes, types of degeneration, infiltration, necrosis, cell death and causes Atrophy, hypertrophy, neo plasms, inflammation, healing and repair	
<b>Dec-2021</b>	<b>II</b>	Saprolegniosis, brachiomycosis, ichthyophorus diseases – Lagenidium diseases – Fusarium disease, prevention and therapy Viral diseases – Emerging viral diseases in fish, haemorrhagic septicemia, spring viremia of carps, infectious hematopoietic necrosis in trout, infectious pancreatic necrosis in salmonids, swim-bladder inflammation in cyprinids, channel cat fish viral disease, prevention and therapy Bacterial diseases – Emerging bacterial diseases, aeromonas, pseudomonas and vibrio infections, columnaris, furunculosis, epizootic ulcerative syndrome, infectious abdominal dropsy, bacterial gill disease, enteric red mouth, bacterial kidney disease, proliferative kidney disease, prevention and therapy	
<b>Jan - 2022</b>	<b>III</b>	Major shrimp viral diseases – Baculovirus penaei, <i>Monodon Baculovirus</i> , Baculoviral midgut necrosis, Infectious hypodermal and haematopoietic necrosis virus, Hepatopancreatic parvo like virus, Yellow head baculovirus, white spot baculovirus. Bacterial diseases of shell fish – aeromonas, pseudomonas and vibrio	

		infections, luminous bacterial disease, filamentous bacterial disease. Prevention and therapy Protozoan diseases- Ichthyophthiriasis, Costiasis, whirling diseases, trypanosomiasis Prevention and therapy	
<b>Feb-2022</b>	<b>IV</b>	Nutritional pathology – lipid liver degeneration, Vitamin and mineral deficiency diseases. Aflatoxin and dinoflagellates. Antibiotic and chemotherapeutics. Nutritional cataract. Genetically and environmentally induced diseases	
<b>Mar-2022</b>	<b>V</b>	Diagnostic tools – immune detection- DNA/RNA techniques, General preventive methods and prophylaxis. Application and development of vaccines. Quarantine – Significance, methods and regulations for transplants. Production of disease-free seeds. Evaluation criteria of healthy seeds. Good Feed management for healthy organisms, Zero water exchange, Probiotics in health management, Issues of bio security.	

**SEMESTER – V**

**CURRICULAR PLAN**

Subject Code: *AQU-502C*

Title: : **Extension, Economics & Marketing**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>Nov-2021 (7)</b>	<b>I</b>	Meaning and scope of economics with reference to fisheries Basic concepts of economics – goods, services, wants and utility, demand and supply, value price, market demand and individual demand, elasticity of demand, law of diminishing marginal utility Theory of production, production function in fisheries Various factors influencing the fishery product's price.	
<b>Dec-2021</b>	<b>II</b>	Basic marketing functions, consumer behavior and demand, fishery market survey and test marketing a product Fish marketing – prices and price determination of fishes Marketing institutions- primary (producer fishermen, fishermen cooperatives, and fisheries corporations) and secondary (merchant/agent/speculative middlemen) Methods of economic analysis of business organizations Preparation of project and project appraisal	
<b>Jan - 2022</b>	<b>III</b>	Aquaculture economics- application of economics principles to aquaculture operations . Various inputs and production function. Assumptions of production function in aquaculture analysis, least cost combination of inputs, laws of variable proportions. 3Cost and earnings of aquaculture systems	
<b>Feb-2022</b>	<b>III IV</b>	carp culture, shrimp farming systems, hatcheries, Cost and earnings of fishing units and freezing plants. Socio-economic conditions of fishermen in Andhra Pradesh, Role of Matsyafed and NABARD in uplifting fishermen's conditions, fishermen cooperatives. Contribution of fisheries to the national	

		economy Fisheries extension – scope and objectives, principles and features of fisheries extension education Fisheries extension methods and rural development Adoption and diffusion of innovations	
Mar-2022	V	ICAR programs – salient features of ORP, NDS, LLP, IRDP, ITDA, KVK, FFDA, FCS, FTI, TRYSEM Training – meaning, training vs. education and teaching DAATT centers and their role in tot programs, video conferencing, education of farmers through print and electronic media.	

**SEMESTER – II  
CURRICULAR PLAN**

Subject Code: ZOO T21A

Title: **Animal Diversity Biology of Chordates.**

Month	Unit No.	Topic to be covered
June -'22	I	Protochordates to cyclostomes Protochordates Salient features of Urochordata and Cephalochordata Structure and life-history of <i>Herdmania</i> , Significance of retrogressive metamorphosis. General organization of vertebrates General characters of cyclostomes Comparison of <i>Petromyzon</i> and <i>Myxine</i>
July-'22	II	Type study – <i>Scoliodon</i> - Morphology, respiratory, circulatory, and excretory and nervous systems and sense organs. Migration in fishes. Viviparity in fishes Types of scales Accessory respiratory organs in fishes
Aug-'22	III IV	South Indian Amphibians. Type study - <i>Rana</i> : Morphology, digestive system, respiratory system circulatory system, excretory system, nervous system and reproductive system Parental care in amphibians South Indian Chelonians. Type study – <i>Calotes</i> : Morphology, digestive, respiratory, circulatory, urinogenital and nervous systems. Identification of poisonous snakes
Sep-'22	V	Birds as Glorified Reptiles. Type study-Pigeon ( <i>Columbialivia</i> ): Exoskeleton, respiratory, circulatory and excretory systems Significance of migration in birds Flight adaptations in birds Aquatic Mammals Dentition in Mammals.

**SEMESTER – IV  
CURRICULAR PLAN**

Subject Code: ZOO-401

Title: **Animal Physiology, Cellular metabolism and Embryology**

Month	Unit No.	Topic to be covered
June -'22	I	Process of digestion and assimilation Respiration - Pulmonary ventilation, transport of oxygen and CO <sub>2</sub> (Note: Need not study cellular respiration here) Circulation - Structure and functioning of heart, Cardiac cycle Excretion - Structure and functions of kidney urine formation, counter current Mechanism
July-'22	II	Nerve impulse transmission - Resting membrane potential, origin and propagation of action potentials along myelinated and non-myelinated nerve fibers Muscle contraction - Ultra structure of muscle, molecular and chemical basis of muscle contraction Endocrine glands - Structure, functions of hormones of pituitary, thyroid, parathyroid, adrenal glands and pancreas Hormonal control of reproduction in a mammal
Aug-'22	III IV	Carbohydrates - Classification of carbohydrates. Structure of glucose Proteins - Classification of proteins. General properties of amino acids Lipids - Classification of lipids Enzymes: Classification and Mechanism of Action Carbohydrate Metabolism - Glycolysis, Krebs cycle, Electron Transport Chain, Glycogen metabolism, Gluconeogenesis Lipid Metabolism – $\beta$ -oxidation of palmitic acid Protein metabolism – Transamination, Deamination and Urea Cycle
Sep-'22	V	Gametogenesis Fertilization Types of eggs Types of cleavages Development of Frog up to formation of primary germ layer

**SEMESTER – IV  
CURRICULAR PLAN**

Subject Code: ZOO-402

Title: **Immunology and Animal Biotechnology**

Month	Unit No.	Topic to be covered
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June -'22	I II	Immunology – I (Overview of Immune system) Introduction to basic concepts in Immunology Innate and adaptive immunity, Vaccines and Immunization programme. Cells of immune system. Organs of immune system Antigens: Basic properties of antigens, B and T cell epitopes, haptens and adjuvants; Factors influencing immunogenicity
July-'22	II III	Antibodies: Structure of antibody, Classes and functions of antibodies Structure and functions of major histocompatibility complexes. Exogenous and Endogenous pathways of antigen presentation and processing. Hypersensitivity – Classification and Types Animal Cell, Tissue and Organ culture media: Natural and Synthetic media, Cell cultures: Establishment of cell culture (primary culture, secondary culture, types of cell lines; Protocols for Primary Cell Culture); Established Cell lines (common examples such as MRC, HeLa, CHO, BHK, Vero); Organ culture; Cryopreservation of cultures
Aug-'22	III IV	Stem cells: Types of stem cells and applications Hybridoma Technology: Production & applications of Monoclonal antibodies (mAb) Genetic Engineering: Basic concept, Vectors, Restriction Endonucleases and Recombinant DNA technology Gene delivery: Microinjection, electroporation, biolistic method (gene gun), liposome and viral-mediated gene delivery Transgenic Animals: Strategies of Gene transfer; Transgenic - sheep, - fish; applications Manipulation of reproduction in animals: Artificial Insemination, <i>In vitro</i> fertilization, super ovulation, Embryo transfer, Embryo cloning
Sep-'22	V	PCR: Basics of PCR. DNA Sequencing: Sanger's method of DNA sequencing- traditional and automated sequencing (2 hrs) Hybridization techniques: Southern, Northern and Western blotting DNA fingerprinting: Procedure and applications Applications in Industry and Agriculture: Fermentation: Different types of Fermentation and Downstream processing; Agriculture: Monoculture in fishes, polyploidy in fishes

**SEMESTER – VI  
CURRICULAR PLAN**

Subject Code: ZOO-601

Title: **Immunology**

Month	Unit No.	Topic to be covered
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June -'22	I II	Introduction to basic concepts in Immunology. Innate and adaptive immunity <b>Cells and organs of Immune system</b> Cells of immune system Organs of immune system Basic properties of antigens B and T cell epitopes, haptens and adjuvants Factors influencing immunogenicity
July-'22	III	Structure of an antibody Classes and functions of antibodies Antigen and antibody interactions. Monoclonal antibodies and their production.
Aug-'22	IV	Structure and functions of major histocompatibility complexes Exogenous and Endogenous pathways of antigen presentation and processing Basic properties and functions of mediator molecules. (cytokines, Interferons and complement proteins). Mechanisms of humoral and cell mediated immunities
Sep-'22	V	Classification and brief description of various types of hyper sensitivities Introduction to concepts of autoimmunity and immunodeficiency <b>*Vaccines</b> General introduction to vaccines Types of vaccines

**SEMESTER – II  
CURRICULAR PLAN**

Subject Code: **AQTT21A**

Title: **Biology of fin fish & shell fish.**

Month	Unit No.	Topic to be covered
June -'22	I	Classification of fishes up to the level of Class. Classification of crustaceans up to the level of Class <b>Finfish and Shell fish of Commercial Importance</b> Cultivable fin fish Cultivable shell fish Sense organs of fishes and crustaceans Specialized organs in fishes – electric organ, venom and toxins buoyancy in fishes- swim bladder and mechanism of gas secretion
July-'22	II	-Feeding habits, feeding intensity, stimuli for feeding, utilization of food Gut content analysis. Structural modifications in relation to feeding habits. Forage ratio and food selectivity index Principles of Age and growth determination Growth regulation Growth rate measurement – scale method, otolith method, skeletal parts as age indicators Length frequency method, age composition, age-length keys, absolute and specific growth, back calculation of length and growth, annual survival rate, asymptomatic length, fitting of growth curve . Length-weight relationship Condition factor/Ponderal index, relative condition factor

Aug-'22	III IV	<p><b>Breeding in Fishes</b> .Breeding habits &amp; breeding grounds Breeding in natural environment and in artificial ponds, courtship Reproductive cycles Induced breeding in fishes <b>Breeding in shrimp</b></p> <p><b>Breeding in pearl oyster</b></p> <p>Ovo-viviparity, oviparity, viviparity in fishes Parental care in fishes, nest building and brooding Embryonic and larval development of fishes Embryonic and larval development of shrimp</p>
Sep-'22	IV V	<p>.. Embryonic and larval development of crabs Environmental factors affecting reproduction and development of cultivable aquatic fin &amp; shellfish Endocrine system in fishes Neurosecretory cells, androgenic gland, ovary, Y-organ, chromatophores, Pericardial glands and cuticle. Molting, molting stages, metamorphosis in crustacean shellfish</p>

**SEMESTER – IV  
CURRICULAR PLAN**

Subject Code: **AQU-401**

Title: *FISH NUTRITION & FEED TECHNOLOGY*

Month	Unit No.	Topic to be covered
June -'22	I	<p>Nutritional requirements of cultivable fish and shellfish Classification of nutrients; Nutritional requirements (energy, proteins, carbohydrates, lipids, fiber, micronutrients) of different stages of cultivable fish and shellfish. Essential amino acids and fatty acids, protein to energy ratio, nutrient interactions and protein sparing effect Dietary sources of energy, effect of ration on growth, determination of feeding rate, check tray, factors affecting energy partitioning and feeding Importance of natural and supplementary feeds, balanced diet.</p>
July-'22	II	<p>Live foods: Fish food organisms – Bacterioplankton, phytoplankton, zooplankton and their role in larval nutrition. Artificial feeds: Supplementary feed stuffs; Non-conventional feed ingredients; Forms of processed feeds - wet feeds, moist feeds, dry feeds, mashes, pelleted feeds - floating and sinking pellets; advantages of pelletization Water stability feeds, farm made aqua feeds, micro-coated feeds, micro-encapsulated feeds and micro-bound diets Feed additives: Binders, antioxidants, probiotics, enzymes, pigments, growth promoters, feed stimulants; use of preservatives.</p>
Aug-'22	III	<p>Feed ingredients: selection, nutrient composition and nutrient availability. Feed formulation and manufacturing – extrusion processing and steam pelleting - grinding, mixing and drying, pelletization, and packing Microbial, insect and rodent damage of feed, chemical spoilage during storage period and feed storage methods. Feeding devices and methods: Manual feeding, demand feeders, automatic feeders, surface spraying, bag feeding &amp; tray feeding</p>

	IV	Feeding schedules: Frequency of feeding, feeding rates and ration size Feed evaluation: feed conversion ratio, feed conversion efficiency and protein efficiency ratio.
Sep-'22	V	Protein (Essential amino acid) and Lipid (Essential fatty acid) deficiency disorders; Fatty liver disease in fishes Vitamin and mineral deficiency disorders Anti-nutrients and aflatoxins.

**SEMESTER –IV  
CURRICULAR PLAN**

Subject Code: **AQU-402**

Title: **FISH HEALTH MANGEMENT**

Month	Unit No.	Topic to be covered
June -'22	I	Principles of disease diagnosis and fish health management. Prophylaxis, Hygiene and Therapy of fish diseases. Defence mechanism in finfish and shellfish – specific and non-specific immune system. Role of stress and host defence mechanism in disease development - Host, pathogen and environment interaction.
July-'22	II	Clinical symptoms, pathology, prevention and therapy of <b>Viral diseases:</b> Viral Haemorrhagic septicemia, Infectious Hematopoietic Necrosis (IHN). <b>Bacterial diseases:</b> Epizootic ulcerative syndrome, Infectious abdominal dropsy, Bacterial gill disease, Columnaris disease, Tail and fin rot. <b>Fungal diseases:</b> Saprolegniasis and Branchiomycosis. <b>Protozoan diseases:</b> Ichthyophthiriasis, Myxoboliasis/ Whirling disease, Enterococcidiasis. <b>Helminthic and Crustacean parasitic diseases:</b> Gyrodactylosis and Dactylogyrosis; Argulosis and Lernaeasis.
Aug-'22	III	Clinical symptoms, pathology, prevention and therapy of <b>Viral diseases:</b> White spot syndrome, Monodon Baculovirus, Infectious hypodermal and haematopoietic necrosis virus, Hepato Pancreatic parvo like virus, Yellow head baculovirus, Taura Syndrome. <b>Bacterial diseases:</b> Vibriosis, white gut disease, loose shell syndrome, Acute Hepato- pancreatic Necrosis Disease (Early Mortality Syndrome, EMS) <b>Fungal diseases:</b> Hepatopancreatic microsporidiosis (HPM) by <i>Enterocytozoon hepatopenaei</i> (EHP), <i>Lagenidium</i> and <i>Fusarium</i> disease. <b>Protozoan diseases:</b> ectocommensal protozoa – <i>Zoothamnium</i> and <i>Acineta</i>
Sep-'22	IV V	Protein (Essential amino acid) and Lipid (Essential fatty acid) deficiency disorders; Vitamin and mineral deficiency disorders; Fatty liver disease; Gas bubble disease, Asphyxiation. <b>Shrimp:</b> Soft shell syndrome, Blue disease/Pigment deficiency syndrome, Red disease, Cramp tail syndrome, Black gill disease, Muscle necrosis, Black death disease. Role of gut probiotics in health management of fish and shrimp. Bioremediation of soil and water as a strategy for health management in ponds . Diagnostic tools – immune detection- DNA/RNA technique – molecular diagnosis of viral diseases. Principles and methods of vaccine production and fish immunization. Quarantine and health certification in



		aquaculture. Significance of Biosecurity and Specific pathogen free Seed (SPF) in health management.
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**SEMESTER –VI**  
**CURRICULAR PLAN**

Subject Code: **AQU-601**

Title: **Ornamental fishery**

Month	Unit No.	Topic to be covered
June -'22	I II	Aquarium and ornamental fishes – introduction Present status of Aquarium trade in the world and India Aquarium accessories – aerators, filters, lighters and heaters Water quality needs and different kinds of feeds Live bearers, gold fish, koi, gourami, barbs and tetras, angel fish and cichlid fish. Brood stock development, breeding, larval rearing and grow out. Larval feeds and feeding
July-'22	III	Varieties and habitat of marine ornamental fishes Major marine ornamental fish resources of India Collection and transportation of live fish, use of anaesthetics Breeding of marine ornamental fish. Other aquarium animals – sea anemones, lobsters, worms, shrimps, octopus and starfish
Aug-'22	IV	Setting up fresh water, marine and reef aquariums. Water quality management for different types of aquariums. Common diseases of aquarium fish, diagnosis and treatment. Temperature acclimatization and oxygen packing for aquarium fish
Sep-'22	V	Commercial production units of ornamental fish- requirements and design. Commercial production of goldfish, live bearers, gouramies, barbs, angels and tetras. Mass production of aquarium plants. Retail marketing and export of ornamental fish.

**SEMESTER –VI**  
**CURRICULAR PLAN**

Subject Code: **AQU-602**

Title: **Fish Processing Technology**

Month	Unit No.	Topic to be covered
	I	Principles of fish preservation. Importance of hygiene and sanitation in fish handling. Quality of water and ice in fish handling and processing. Preparation of ice. Different types

June -'22		of ice used in the seafood industry and their merits. Preservation by refrigerated seawater and chilled sea water
July-'22	II  III	Fundamental principles involved in chilling and freezing of fish and fishery products. Various freezing methods. Freezing of shrimps and fishes. Changes during the cold storage of fish and fishery products. Principles involved in canning of fish. Different types of containers. Different stages of canning of Tuna. Retortable pouch processing. Principles of smoking, drying and salting of fish, factors affecting drying. Traditional drying / curing methods. Different types of drying. Drying of fish and prawns. Packing and storage of dried products. Spoilage of dried products.
Aug-'22	III  IV	Preventive measures. Standards for dry fish products. Cold smoking. Principles of freeze drying. Accelerated freeze drying and packing of freeze dried products. Modern methods of preservation by irradiation and modified atmospheric storage. Cold Storage and Export of Fishery Products: Functions of packing. Different types of packing materials and its quality evaluation. Packing requirements for frozen and cured products
Sep-'22	IV  V	Statutory requirements for packing. Labeling requirements. Different types of cold Storages. Insulated and refrigerated vehicles. Export of fishery products from India - major countries, important products, export documents and procedures. Prospects and constraints in export including tariff and non- tariff barriers, marine insurance, export incentives, registered exporters

**SEMESTER –VI  
CURRICULAR PLAN**

Subject Code: **AQU-603**

Title: **Fishery Microbiology and Fishery by-products**

Month	Unit No.	Topic to be covered
	I	History and development of microbiology –Different members of the microbial community – General

June -'22		characteristics of bacteria, fungi, viruses, algae and protozoan's. Ultra structure of prokaryotic cell – structure and function of bacterial cell wall, plasma membrane, capsule, flagella and endospore. Structure of fungi and yeast cell. Ultra structure of virus – classification of viruses, Life cycle bacteriophages - lytic and lysogenic cycle.
July-'22	II  III	Microflora of aquatic environment, Different culture techniques. Nutrition and growth of bacteria – different types of media for isolation of bacteria and fungi. Isolation, enumeration, preservation and maintenance of cultures. Routine tests for identification of bacteria – morphological, cultural biochemical and serological. Basics of mycological and virology techniques Perish ability of seafood – Fish as an excellent medium for growth of microorganisms. Spoilage microflora of fish and shellfish. Intrinsic and extrinsic factors affecting spoilage
Aug-'22	IV	Fish meal, fish protein concentrate, shark fin rays, fish maws, isinglass, fish liver oil, fish body oil, fish hydrolysates, chitin, chitosan, glucosamine hydrochloride, squalene, pearl essence, ambergris, gelatin, beche-de-mer, fish silage, fish ensilage and seaweed products like agar, alginic acid and carrageen
Sep-'22	V	Value addition in sea food. Different types of value added products from fish and shell fishes – status of value addition in Indian seafood sector. Advantages of value addition. Fish mince and Surimi. Analog and fabricated products. Preparation of coated fishery products. Different types of batter and breading and its applications. Preparation of products viz. fish / prawn pickle, fish wafers, prawn chutneypowder, fish soup powder, fish protein hydrolysate, fish stacks, fillets, fish curry, mussel products, marinated products.

**SEMESTER –VI  
CURRICULAR PLAN**

Subject Code: **AQU-604**

Title: **Quality Control in Processing Plants**

Month	Unit No.	Topic to be covered
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A.G.& S.G. Siddhartha Degree College of Arts & Science, Vuyyuru-521165  
SEMESTER TEACHING PLAN

June -'22	I II	<p>Quality management, total quality concept and application in fish trade. Quality assessment of fish and fishery products - physical, chemical, organoleptic and microbiological. Quality standards. Quality Assurance. Inspection and quality assurance</p> <p>Fish inspection in India, process; water quality in fishery industry, product quality, water analysis, treatments, chlorination, ozonisation, UV radiation, reverse osmosis, techniques to remove pesticides and heavy metals.</p>
July-'22	III	<p>Sensory evaluation of fish and fish products, basic aspects, different methods of evaluation, taste panel selection &amp; constitution, statistical analysis Quality problem in fishery products: good manufacturing practices. HACCP and ISO 9000 series of quality assurance system, validation and audit. national and international standards, EU regulation for fish export trade,</p>
Aug-'22	IV	<p>IDP and SAT formations in certification of export worthiness of fish processing units, regulations for fishing vessels pre-processing and processing plants, eu regulations. Factory sanitation and hygiene: National and international requirements, SSOP.</p>
Sep-'22	V	<p>Hazards in sea foods: Sea food toxins, biogenic amines, heavy metals and industrial pollutants. Infection and immunity, Microbial food poisoning, bacteria of public health significance in fish /fishery products / environments - Salmonella, Clostridia, Staphylococcus ,E. coli, Streptococcus, Vibrio, Aeromonas, Listeria, Yersinia, Bacillus. Laboratory techniques for detection and identification of food poisoning bacteria. Mycotoxins in cured fish, bacterial associated with fish disease.</p>

Name of the Teacher: V.N.V.Kishore		Program: M.Sc.(Chemistry)	Academic Year:2021-2022		
Department: Chemistry(PG)		Course Code: CH1T1			
Semester: I		Course Name: General Chemistry			
S.No.	Month	Probable Number of Periods in Month	Topics to be covered during the month	Completed/ Not-Completed	Remarks
1	July	12	<b>Treatment of analytical data</b> : Classification of errors – Determinate and indeterminate errors – Minimisation of errors – Accuracy and precision – Distribution of random errors – Gaussian distribution – Measures of central tendency – Measures of precision – Standard deviation – Standard error of mean – student's t test – Confidence interval of mean – Testing for significance – Comparison of two means – F – test – Criteria of rejection of an observation – propagation of errors – Significant figures and computation rules – Control charts – Regression analysis – Linear least squares analysis.	Completed	Nil
2	Aug	12	<b>Introduction to Molecular Spectroscopy:</b> Motion of molecules-Degrees of freedom –Energy associates with the degrees of freedom-Type of spectra. <b>Microwave spectroscopy:</b> Classification of molecules, rigid rotator model, effect of isotopic substitution on the transition frequencies, Intensities non-rigid rotator-Microwave spectra of polyatomic molecules.	Completed	Nil
3	Sep	12	<b>Rotational Vibrational Spectroscopy:</b> Harmonic oscillator, vibrational energies of diatomic molecules, zero-point energy, force constant and bond strengths, anharmonicity, Morse potential energy diagram. Vibration – rotation spectroscopy. PQR branches, Born–Openheimer approximation, selection rules, normal modes of vibration, group frequencies, overtones, hot bands, applications.	Completed	Nil

4	Oct	12	<b>Titrimetric Analysis:</b> Classification of reactions in titrimetric analysis- Primary and secondary standards- Neutralisation titrations-Theory of Neutralization indicators-Mixed indicators- Neutralisation curves- Displacement titrations-Precipitation titrations-Indicators for precipitation titrations-Volhard method-Mohr method- Theory of adsorption indicators-Oxidation reduction titrations-Change of electrode potentials during titration of Fe(II) with Ce(IV)- Detection of end point in redox titrations-Complexometric titrations- Metal ion indicators-Applications of EDTA titrations-Titration of cyanide with silver ion.	Completed	Nil
5		12	<b>Symmetry and Group theory in chemistry:</b> Symmetry elements, symmetry operation, definition of group, sub group, relation between order of a finite group and its sub group. GMT tables Abelian and non-abelian groups. Point group. Schonfiles symbols, Find out Point group of a molecule (yes or no Method). Representation of groups by Matrices (representation for the C <sub>n</sub> , C <sub>nv</sub> , C <sub>nh</sub> , D <sub>n</sub> etc. groups to be worked out, explicitly). Character of a representation. The great Orthogonality theorem (without proof) and its importance. Character tables and their use. Construction of Character tables.	Completed	

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**SEMESTER TEACHING PLAN**

Name of the Teacher: Dilshad Begum		Program: M.Sc.(Chemistry)	Academic Year:2021-2022		
Department: Chemistry(PG)		Course Code: CH1T2			
Semester: I		Course Name: Inorganic Chemistry			
S.No.	Month	Probable Number of Periods in Month	Topics to be covered during the month	Completed/ Not-Completed	Remarks
1	July	12	<b>Introduction to Exact</b> functions, derivation of wave equation using operator concept. Discussion of solutions of Schrodinger's equation to some model systems viz. particle in one dimensional box (applications), three-dimensional box, Rigid rotator system and the Hydrogen atom. Variation theorem, linear variation principle, perturbation theory (first order and non-degenerate), Application of variation method to the Hydrogen atom. <b>Quantum Mechanical Results:</b> Schrodinger equation, importance of wave function, Operators, Eigen values and Eigen	Completed	Nil

2	Aug	12	<b>Metal–ligand bonding:</b> Crystal Field Theory of bonding in transition metal complexes-Splitting of d-orbitals in octahedral, tetrahedral, square planar, Trigonal bipyramidal and Square pyramidal fields. Tetragonal distortions - Jahn-Teller effect. Applications and limitations of CFT. Experimental evidences for covalence in complexes. Molecular Orbital Theory of bonding for Octahedral, tetrahedral and square planar complexes. $\pi$ -bonding and MOT - Effect of $\pi$ - donor and $\pi$ -acceptor ligands on $\Delta_o$ . Experimental evidence for $\pi$ - bonding in complexes.	Completed	Nil
3	Sep	12	<b>Metal – ligand Equilibria in solutions:</b> Step wise and over all formation constants. Trends in stepwise constants (statistical effect and statistical ratio). Determination of formation constants by Spectrophotometric method (Job’s method) and pH metric method (Bjerrum’s). Stability correlations - Irving -William’s series. Hard and soft acids and bases (HSAB).	Completed	Nil
4	Oct	12	<b>Structure and Bonding:</b> $p\pi$ - $d\pi$ bonding, Bent’s rule, Non-valence cohesive forces, VSEPR theory. Molecular Orbital theory, Molecular orbitals in triatomic ( $\text{BeH}_2$ ) molecules and ions ( $\text{NO}_2^-$ ) and energy level diagrams. Walsh diagrams for linear ( $\text{BeH}_2$ ) and bent ( $\text{H}_2\text{O}$ ) molecules.	Completed	Nil
5		12	<b>Chemistry of non- transition elements:</b> Halogen oxides and oxyfluorides, Spectral and Magnetic properties of Lanthanides and Actinides. Analytical applications of Lanthanides and Actinides. Synthesis, properties and structure of B-N, S-N, P-N cyclic compounds. Intercalation compounds.  <b>Metal <math>\pi</math>- complexes:</b> preparation, structure and bonding in Nitrosyl, Dinitrogen and Dioxygen complexes.	Completed	

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**SEMESTER TEACHING PLAN**

Name of the Teacher: Dr. V.Sreeram		Program: M.Sc.(Chemistry)	Academic Year:2021-2022		
Department: Chemistry(PG)		Course Code: CH1T3			
Semester: I		Course Name: Organic Chemistry			
S.No.	Month	Probable Number of Periods in Month	Topics to be covered during the month	Completed/ Not-Completed	Remarks

1	July	12	<p><b>Nature of bonding and Aromaticity:</b>  <b>Nature of bonding:</b> Localised and Delocalized, Delocalised chemical bonding conjugation, cross conjugation, hyper conjugation, Tautomerism.  <b>Aromaticity:</b> Concept of Aromaticity, Aromaticity of five membered, six membered rings - Non benzenoid aromatic compounds:- cyclopropenylcation, Cyclobutadienyldication, cyclopentadienyl anion-tropyllium cation and cyclooctatetraenyl dianion. Homoaromaticity, Anti aromaticity</p>	Completed	Nil
2	Aug	12	<p><b>Reactive intermediates &amp; Reactive Species:</b>  <b>Reactive intermediates:</b>            Generation, Structure, Stability, Detection and Reactivity of Carbocations, Carbanions, Free radicals, Carbenes, Nitrenes and Arynes.            Reactive Species: Generation and reactivity of Electrophiles, Nucleophiles, Dienophiles, Ylids</p>	Completed	Nil
3	Sep	12	<p><b>Addition Reactions:</b> Additions: Addition to carbon – carbon multiple bonds, HX, X<sub>2</sub>, HOX, stereo chemistry of addition, formation and reaction of epoxides, syn and anti hydroxylation, hydrogenation(catalytic and Non catalytic), synthetic reactions of CO and CN and Cram's rule.</p>	Completed	Nil
4	Oct	12	<p><b>Eliminations Reactions:</b>Types of elimination (E1, E1cB, E2) reactions, mechanisms, stereochemistry and orientation, Hofmann and Saytzeff's rules, Syn elimination versus anti elimination. Competitions between elimination and substitution. Dehydration, dehydrogenation, dehalogenation, decarboxylative elimination, pyrolytic eliminations.</p>	Completed	Nil
5		12	<p><b>Substitution Reactions:</b>  <b>Aliphatic Nucleophilic substitutions:</b>            The SN<sub>2</sub>, SN<sub>1</sub>, mixed SN<sub>1</sub> and SN<sub>2</sub> and SN<sub>i</sub> reactions : Mechanism, effect of structure, nucleophile, leaving group on substitutions. The neighbouring group mechanism, participation by <math>\sigma</math> and <math>\pi</math> bonds, anchimeric assistance.  <b>Aromatic Nucleophilic substitution:</b>            The S<sub>N</sub>Ar (Addition – Elimination), S<sub>N</sub>1(Ar) mechanisms and benzyne mechanism (Elimination – Addition). Reactivity- effect of substrate structure, leaving group and attacking nucleophile. The Von-Richter, Sommelet – Hauser and Smiles rearrangements.</p>	Completed	



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Name of the Teacher: M.Rekha		Program: M.Sc.(Chemistry)	Academic Year:2021-2022		
Department: Chemistry(PG)		Course Code: CH1T4			
Semester: I		Course Name: Physical Chemistry			
S.No.	Month	Probable Number of Periods in Month	Topics to be covered during the month	Completed/ Not-Completed	Remarks
1	July	12	<p><b>Thermodynamics – I:</b>Classical thermodynamics - Brief review of first and second laws of thermodynamics - Entropy change in reversible and irreversible processes - Entropy of mixing of ideal gases - Entropy and disorder – Free energy functions - Gibbs-Helmholtz equation - Maxwell partial relations - Conditions of equilibrium and spontaneity - Free energy changes in chemical reactions: Van't Hoff reaction isotherm - Van't Hoff equation - Clausius Clapeyron equation - partial molar quantities - Chemical potential - Gibbs- Duhem equation - partial molar volume - determination of partial molar quantities - Fugacity - Determination of fugacity - Thermodynamic derivation of Raoult's law.</p>	Completed	Nil
2	Aug	12	<p><b>Surface phenomena and phase equilibria</b> - Surface tension - capillary action - pressure difference - across curved surface (young - Laplace equation) - Vapour pressure of small droplets (Kelvin equation) - Gibbs-Adsorption equation - BET equation - Estimation of surface area - catalytic activity of surfaces – ESCA , X-ray fluorescence and Auger electron spectroscopy.</p> <p><b>Surface active agents</b> - classification of surface active agents - Micellization - critical Micelle concentration (CMC) - factors affecting the CMC of surfactants, microemulsions - reverse micelles - Hydrophobic interaction.</p>	Completed	Nil
3	Sep	12	<p><b>Electrochemistry – I</b> - Electrochemical cells - Measurement of EMF - Nernst equation – Equilibrium constant from EMF Data - pH and EMF data - concentration cells with and without transference – Liquid junction potential and its determination - Activity and activity coefficients - Determination by EMF Method - Determination of solubility product from EMF measurements. Debye Huckel limiting law and its verification.</p> <p>Effect of dilution on equivalent conductance of electrolytes - Anomalous behaviour of strong electrolytes. Debye Huckel-Onsagar equation - verification and limitations, conductometric titrations.</p>	Completed	Nil

4	Oct	12	<b>Chemical kinetics</b> - Methods of deriving rate laws - complex reactions - Rate expressions for opposing, parallel and consecutive reactions involving unimolecular steps. Theories of reaction rates -collision theory - Steric factor - Activated complex theory - Thermodynamic aspects – Unimolecular reactions - Lindemann's theory - Lindemann-Hinshelwood theory. Reactions in solutions - Influence of solvent - Primary and secondary salt effects - Elementary account of linear free energy relationships - Hammett - Taft equation - Chain reactions - Rate laws of H <sub>2</sub> -Br <sub>2</sub> , photochemical reaction of H <sub>2</sub> - Cl <sub>2</sub> , Decomposition of acetaldehyde and ethane - Rice-Herzfeld mechanism	Completed	Nil
5		12	<b>Potentiometry:</b> Advantages of potentiometric methods - Reference electrode - Standard hydrogen electrode .Acid-alkali or Neutralisation titration, Oxidation – reduction titrations, Precipitation titrations, complexometric titrations, Methods of end point location (Graphical, Differentiation method, Pinkhof- Treadwell method). Calomel electrode -Indicator electrodes: Metal-metal ion electrodes - Inert electrodes -Membrane electrodes - theory of glass membrane potential - Direct potentiometry, potentiometric titrations - Applications.	Completed	

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**SEMESTER TEACHING PLAN**

Name of the Teacher: Dr. V.Sreeram		Program: M.Sc.(Chemistry)	Academic Year:2021-2022		
Department: Chemistry(PG)		Course Code: CH3T1			
Semester: III		Course Name: Advanced Organic Spectroscopy			
S.No.	Month	Probable Number of Periods in Month	Topics to be covered during the month	Completed/ Not-Completed	Remarks
1	July	12	<b>Proton NMR Spectroscopy:</b>  Determination of structure of organic compounds using PMR data. Spin system, Nomenclature of spin system, spin system of simple and complex PMR spectrum (Study of AB – A <sub>2</sub> – AB <sub>2</sub> . ABX – ABC – AMX interactions)  Simplification of complex spectra- nuclear magnetic double resonance, chemical shift reagents, solvent effects on PMR Spectrum . Nuclear Overhauser Effect (NOE).	Completed	Nil
2	Aug	12	<b>ORD&amp; CD Curves:</b> Optical rotatory dispersion : Theory of optical rotatory dispersion – Cotton effect –CD curves-types of ORD and CD curves-similarities and difference between ORD and CD curves. $\alpha$ - Halo keto rule, Octant rule – application in structural studies.	Completed	Nil

3	Sep	12	<p><b>13C-NMR spectroscopy:</b> Similarities and Difference between PMR and CMR-CMR recording techniques - BBC-BBD-SFORD-Gate pulse CMR spectrum.</p> <p>General considerations, chemical shift (aliphatic, olefinic, alkyne, aromatic, heteroaromatic and carbonylcarbon), coupling constants. Typical examples of CMR spectroscopy – simple problems.</p>	Completed	Nil
4	Oct	12	<p><b>2D NMR spectroscopy:</b> Definitions and importance of COSY, DEPT, HOMCOR, HETCOR, INADEQUATE, INDOR, INEPT, NOESY, HOM2DJ, HET2DJ.</p> <p>Study of COSY, DEPT, HOMCOR, HETCOR, INADEQUATE INDOR INEPT ,NOESY HOM2DJ, HET2DJ, taking simple organic compounds as examples.</p>	Completed	Nil
5		12	Structural Elucidation of Organic compounds Using UV, IR, 1H-NMR, 13C-NMR and Mass spectroscopy.	Completed	

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Name of the Teacher: V.N.V.kishore.		Program: M.Sc.(Chemistry)	Academic Year:2021-2022		
Department: Chemistry(PG)		Course Code: CH3T4			
Semester: III		Course Name: Chemistry of Natural products			
S.No.	Month	Probable Number of Periods in Month	Topics to be covered during the month	Completed/ Not-Completed	Remarks
1	July	12	<b>Alkaloids:</b> Introduction, Definition, occurrence, role of alkaloids in plants, classification, isolation and general methods for structural elucidation of alkaloids. Structure elucidation of Morphine, Vincristine, Quinine and Reserpine	Completed	Nil
2	Aug	12	<b>Terpenoids:</b> Introduction, Definition, nomenclature, classification, isolation, isoprene rule and general methods for structural elucidation of Terpenoids. Structure elucidation of Zingiberene, Santonin, farnesol and abietic acid.	Completed	Nil
3	Sep	12	<b>Steroids:</b> Introduction, Definition, nomenclature, classification. Occurrence, isolation, physiological action, structure elucidation of Cholesterol, Androsterone, Ttestosterone and Progesterone	Completed	Nil

4	Oct	12	<b>Flavonoids and Isoflavonoids:</b> Introduction, Definition, classification, isolation, physiological action, structure elucidation of Kaempferol and Quercetin	Completed	Nil
5		12	<b>Pigments:</b> Introduction, classification of natural pigments, introduction and classification of carotenoids, functions of carotenoids in plants and animals, structure and synthesis of $\alpha$ – carotene and $\beta$ – carotene.	Completed	

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**SEMESTER TEACHING PLAN**

Name of the Teacher: Smt.Dilshad Begum		Program: M.Sc.(Chemistry)	Academic Year:2021-2022		
Department: Chemistry(PG)		Course Code: CH3T2			
Semester: III		Course Name: Organic Reaction mechanism			
S.No.	Month	Probable Number of Periods in Month	Topics to be covered during the month	Completed/ Not-Completed	Remarks
1	July	12	<b>Oxidations:</b> Definition and types of Oxidations, oxidations with ruthenium tetroxide, iodobenzenediacetate, Tl(III) nitrate, Chromium (VI) oxidants, Lead tetra acetate, SeO <sub>2</sub> , MnO <sub>2</sub> , Ag <sub>2</sub> CO <sub>3</sub> , Oppenauer oxidation, perhydroxylation using KMnO <sub>4</sub> , OsO <sub>4</sub> , HIO <sub>4</sub> , oxidation with iodine silver carboxylate (Woodward and Prevost conditions), Definition & mechanism of epoxidation by peracids.	Completed	Nil
2	Aug	12	<b>Reductions :</b> Definition and types of reductions, reduction by dissolving metals - Reduction with metal and liquid ammonia (Birch Reduction of aromatic compounds), Reduction with metal acid - Clemensons reduction, Reduction by hydride transfer reagents, Aluminium alkoxide - Meerwein Ponderf Verley Reduction, LiAlH <sub>4</sub> , NaBH <sub>4</sub> , Diisobutylaluminium hydride(DIBAL), Sodium cyano borohydride, trialkyl borohydrides, Reduction with diimide,. Wolff-Kishner reduction	Completed	Nil

3	Sep	12	<p><b>Molecular Rearrangements:</b> Migration to electron deficient carbon atom. Pinacole-Pinacolone rearrangement, Wagner-Meerwein rearrangement, Dienone-Phenol rearrangement, Benzil-Benzilic acid rearrangement, Favorski rearrangement.</p> <p>Migration to electron deficient hetero atom: Wolf, Hofmann, Curtius, Schmidt, Beckmann rearrangement, Baeyer-Villiger rearrangement, Stevens, Neber rearrangements. Fries, Fischer-Hepp, Orton, Bamberger, Dakin, Cumene Hydroperoxide rearrangement.</p>	Completed	Nil
4	Oct	12	<p><b>Pericyclic Reactions – I:</b> Definition, classification of pericyclic reactions, Molecular Orbital energy level diagrams, electronic configuration in ground and first excited states of Ethylene, 1,3-Butadiene, 1,3,5 – Hexatriene, allyl system, stereo chemical notations – suprafacial, antarafacial, conrotatory and disrotatory modes, Woodward and Hoffmann selection rules.</p> <p><b>Electrocyclic reactions:</b> Mechanism, Stereochemistry of (4n) and (4n+2) <math>\pi</math> systems. PMO, FMO and correlation methods.</p> <p><b>Cyclo additions:</b> Mechanism, stereochemistry of (2+2) and (4+2) <math>\pi</math> systems, PMO, FMO and correlation methods.</p> <p><b>Sigmatropic rearrangements:</b> Classification, mechanism for FMO and PMO approach under thermal and photo chemical conditions. (Detailed treatment of Claisen, Cope rearrangements fluxional molecules, aza-cope rearrangements).</p>	Completed	Nil
5		12	<p><b>Photochemistry:</b> Photochemical processes: Energy transfer, sensitization and quenching. Singlet and triplet states and their reactivity. Photochemistry of olefins – conjugated olefins, Aromatic compounds – isomerisation – additions. Photochemistry of carbonyl compounds – Norrish type I and II reactions – Paterno – Buchi Reaction. Photoreduction, Photochemical rearrangements – Photo Fries rearrangement, Di-<math>\pi</math>-methane rearrangement, Barton reaction.</p>	Completed	

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**SEMESTER TEACHING PLAN**

Name of the Teacher: M.Rekha		Program: M.Sc.(Chemistry)	Academic Year:2021-2022		
Department: Chemistry(PG)		Course Code: CH3T3			
Semester: III		Course Name: Organic Synthesis			
S.No.	Month	Probable Number of Periods in Month	Topics to be covered during the month	Completed/ Not-Completed	Remarks

1	July	12	<p><b>Formation of carbon-carbon single bonds:</b>  Alkylation of relatively acidic methylene groups, alkylation of ketones, enamine and related reactions, umplong (dipole inversion).  Allylic alkylation of alkenes, alkylation of <math>\alpha</math>-thiocarbanions- <math>\alpha</math>-selenocarbanions, formation of carbon carbon single bonds by the addition of free radicals to alkenes, synthetic applications of carbenes and carbenoids</p>	Completed	Nil
2	Aug	12	<p><b>Formation of carbon-carbon double bonds</b>  Pyrolytic syn elimination reactions  sulphoxide-sulphonate rearrangement, synthesis of allyl alcohols, the witting reaction, alkenes from sulphones, decarboxylation of <math>\beta</math>-lactones, alkenes.  Stereo selective synthesis of tri and tetra substituted alkenes, oxidative decarboxylation of carboxylic acids, stereospecific synthesis from 1,2-diols, reductive dimerization of carbonyl compounds.</p>	Completed	Nil
3	Sep	12	<p><b>Diels–Alder and related reactions:</b> The dienophile, heterodienophile, oxygen as dienophile, The diene, acyclic dienes, heterodienes, 1,2-dimethylene cycloalkanes, vinyl cycloalkenes, and vinyl arenes, cyclic dienes and furans.  Intra molecular Diels –Alder reactions, stereochemistry and mechanism of Diels – Alder reaction, retro Diels – Alder reaction, catalysis by lewis acids, photosensitized Diels- Alder reactions and 1,3-dipolar cycloaddition reactions.</p>	Completed	Nil
4	Oct	12	<p><b>Disconnection approach</b>  Introduction to Retro-synthetic analysis, Disconnection approach with suitable examples, Definitions: FGI, Disconnection, synthons, synthetic equivalent, reagent, target molecule, General strategy: choosing a disconnection, greatest simplification, symmetry, high yielding steps, recognizable starting materials.  Chemo, regio and stereo selectivity with examples. One group C-C disconnections-Alcohols, carbonyl compounds, alkene synthesis, two group disconnections: 1,3 – dicarbonyl compounds, <math>\alpha,\beta</math> – unsaturated carbonyl compounds.</p>	Completed	Nil

5	12	<b>Protecting groups:</b> Theory and importance of functional group protection and deprotection in organic synthesis:-Protecting agents for the protection of functional groups: Hydroxyl group, Amino group, Carbonyl group and Carboxylic acid group carbon-carbon multiple bonds; chemo- and regioselective protection and deprotection. Illustration of protection and deprotection in organic synthesis.	Completed
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**A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYURU  
DEPARTMENT OF COMPUTER SCIENCE (PG)  
2021-2022 CURRICULAR PLANS**

## **ODD SEMESTER**

### **SEMESTER – I**

**Subject Code: 21CS1T1**

**Title: Problem Solving Using Python Programming**

Month	Unit No.	Topic to be covered
Feb-2022	1	Features of Python, History of Python, The Future of Python, Writing and Executing First Python Program.
Mar - 2022	2	Conditional Branching Statements, Function Definition, Function Call, Variable Scope and Lifetime.
Apr -2022	3	Concatenating, Appending and Multiplying Strings, Sequence, Lists, Functional Programming.
Apr-2022	4	Classes and Objects, Class Method and self Argument, Built-in Class Attributes, Class Methods, Static Methods.
May-2022	5	Inheriting Classes in Python, Types of Inheritance, Introduction to Errors and Exceptions.

### **SEMESTER – I**

**Subject Code: 21CS1T2 Title: Computer Organization**

Month	Unit No.	Topic to be covered
Feb-2022	1	Digital Computers, Logic Gates, Boolean Algebra, Map Simplification, Data Types, Complements, Fixed-Point Representation.
Mar - 2022	2	Register Transfer Language, Register Transfer, Bus & Memory Transfers, Computer Registers, Computer Instructions, Timing & Control, Instruction Cycle.
Apr -2022	3	Control Memory, Address Sequencing, Micro Program Example, General Register Organization, Stack Organization.
Apr-2022	4	Addition and Subtraction, Multiplication Algorithm,
May-2022	5	Peripheral Devices, Input-Output Interface, Asynchronous Data Transfer, Memory

		Hierarchy.
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**SEMESTER – I**

**Subject Code: 21CS1T3**

**Title: Software Engineering**

Month	Unit No.	Topic to be covered
Feb-2022	1	The Nature of Software: Defining Software, Software Application Domains, Legacy Software, A Generic Process Model: Defining a Framework Activity.
Mar - 2022	2	Principles That Guide Process, Principles That Guide Practice, Principles. Requirements Modeling: Scenarios, Information, and Analysis Classes
Apr -2022	3	Software Quality Assurance, Software Testing Strategies, Testing Conventional Applications.
Apr-2022	4	The Management Spectrum: The People, The Product, The Process, Process and Project Metrics
May-2022	5	Online Marketing E- CRM Architectural components

**SEMESTER – I**

**Subject Code: 21CS1T4**

**Title: Database Management Systems**

Month	Unit No.	Topic to be covered
Feb-2022	1	Introduction, An Example, Characteristics of the Database Approach, Actors on the Scene, Database System Concepts and Architecture,
Mar - 2022	2	SQL Data Definition and Data Types, Specifying Constraints in SQL, The Relational Algebra and Relational Calculus.
Apr -2022	3	Data Modeling Using the Entity-Relationship (ER) Model, The Enhanced Entity-Relationship (EER) Model.
Apr-2022	4	Disk Storage, Basic File Structures and Hashing, Indexing Structures for Files.
May-2022	5	Introduction to Transaction Processing Concepts and Theory, Concurrency Control Techniques, Distributed Databases.

**SEMESTER – I**

**Subject Code: 21CS1T5**

**Title: Theory of Computation**

Month	Unit No.	Topic to be covered
Feb-2022	1	Strings, Alphabet, Language, Operations, Finite Automaton Model, Finite Automata: Deterministic Finite Automaton, Non Deterministic Finite Automaton (Simple Problems).
Mar - 2022	2	Regular Sets, Regular Expressions, Identity Rules for Regular Expression,



Apr -2022	3	Regular Grammars - Right Linear and Left Linear Grammars, Context Free Grammars.
Apr-2022	4	Push Down Automata: Definition, Model, and Design of PDA.
May-2022	5	Turing Machine, Computability Theory.

**SEMESTER – III**

**Subject Code: 20CS3T1**

**Title: Cryptography A& Network Security**

Month	Unit No.	Topic to be covered
Feb-2022	1	Computer & Network Security Concepts, Classical Encryption Techniques, Advanced Encryption Standard.
Mar - 2022	2	Public key cryptography and RSA, Key Management, Message authentication and hash functions.
Apr -2022	3	Digital Signatures and Authentication protocols.
Apr-2022	4	Email Security, IP Security, Web security.
May-2022	5	Intruders: Intruders, Intrusion Detection, Firewalls: The Need for Firewalls, Firewall Characteristics and Access Policy.

**SEMESTER – III**

**Subject Code 20CS3T2**

**Title: Design & Analysis of Algorithms**

Month	Unit No.	Topic to be covered
Feb-2022	1	Algorithm Specification Pseudo code Conventions, Elementary Data Structures.
Mar - 2022	2	Divide-and-Conquer: General Method, Defective Chess Board, Binary Search, The Greedy Method.
Apr -2022	3	Requirements Engineering Tasks - Initiating The Requirements Engineering Process
Apr-2022	4	Design Process And Design Quality
May-2022	5	Software Quality Assurance (SQA)

**SEMESTER – III**

**Subject Code 20CS3T3**

**Title: WEB TECHNOLOGIES**

Month	Unit No.	Topic to be covered
Feb-2022	1	Evolution of Internet and World Wide Web, Editing HTML5, First HTML5 Example,

Mar - 2022	2	CSS: Introduction, Inline Styles, Embedded Style Sheets, Conflicting Styles, JavaScript.
Apr -2022	3	JQuery Basics: String, Numbers, Boolean, Objects, jQuery-DOM Attributes:
Apr-2022	4	Apply CSS Properties, Apply Multiple CSS Properties, JQuery Effect Methods, jQuery Hide and Show.
May-2022	5	Introduction, Simple PHP Program, Converting Between Data Types.

**SEMESTER – III**

**Subject Code 20CS3T4 Title: Data Mining Techniques**

Month	Unit No.	Topic to be covered
Feb-2022	1	Warehouse: What is it, Who need it, and Why? Things to consider, Managing the Data Warehouse.
Mar - 2022	2	Data Warehouse Design Methodology: The preferred Architecture, Alternate Warehouse architectures.
Apr -2022	3	Data Mining, Mining Association rules in large databases.
Apr-2022	4	Classification and Prediction: Introduction to classification by decision tree Induction.
May-2022	5	Cluster Analysis : Introduction, types of data in cluster analysis, a categorization of Major clustering methods.

**SEMESTER – III**

**Subject Code 21CS3OEL2 Title: WEB PROGRAMMING**

Month	Unit No.	Topic to be covered
Feb-2022	1	Internet Protocols: Internet Protocols, Host Names, Internet Applications World Wide Web, Basics of WWW and Browsing, URL, Types of Browsers.
Mar - 2022	2	Working with Links, Working with images, Working with tables.
Apr -2022	3	Creating Forms, Named Input Fields, Frames: Introduction to Frames, Frames Document.
Apr-2022	4	CSS: Introduction to Style Sheets, Inline Styles, External Style Sheets, Internal Style Sheets, Style Classes, Multiple Styles.
May-2022	5	Make a Website with Wix, Building Your Wix Website.

## ADD ON COURSE

Applicable for the batch of students applicable during the Academic Year 2021-2022

**M.Sc. (Computer Science)**

**III SEMESTER**

**Course Code: 21CS3A1**

**Title of the Course: PHP with My SQL Certification**

## EVEN SEMESTER

**SEMESTER – II**

**Subject Code 20CS2T1 Title: Computer Networks**

Month	Unit No.	Topic to be covered
July-2021	1	Network Hardware, Network Software, Reference Models
Aug - 2021	2	Data Link Layer: Data Link Layer Design Issues, Error Correcting Codes, Error Detecting Codes, Elementary Data Link Protocols
Sep -2021	3	The Network Layer, Network Layer Design Issues, Routing Algorithms, Internet Working, The Network Layer in the Internet
Sep-2021	4	The Transport Layer, Elements of Transport Protocols
Oct-2021	5	The Application Layer, Electronic Mail, The World Wide Web, Streaming Audio and Video

**SEMESTER – II**

**Subject Code 20CS2T2 Title: Data Structures**

Month	Unit No.	Topic to be covered
July-2021	1	Elementary Data Organization, Data Structures, Data Structure operations, Mathematical Notation and Functions
Aug - 2021	2	String Processing: Storing Strings, Character Data Type, String Operations, Arrays, Records and Pointers
Sep -2021	3	Linked Lists: Representation, Traversing, Searching, Memory Allocation, Stacks, Queues, Recursion: Stacks, Array representation, Linked List representation
Sep-2021	4	Trees: Binary Trees, Representing and Traversing Binary trees, Traversal Algorithms Using Stacks.
Oct-2021	5	Graphs: Terminology, Sequential representation of Graphs, Warshall's Algorithm, Linked Representation of Graphs, Sorting and Searching

**SEMESTER – II**

**Subject Code 20CS2T3 Title: Web Technologies**

Month	Unit No.	Topic to be covered
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July-2021	1	Outline of an HTML Document, Head Section Body Section: Headers, Paragraphs, Text Formatting.
Aug - 2021	2	Java Script: Introduction to Scripting, Control Statements VB Script: Introduction, Embedded VBScript code in an HTML Document, Comments.
Sep -2021	3	Dynamic HTML (DHTML), XML, XML DTD, DTD Elements, DTD Attributes
Sep-2021	4	Servlets: Introduction, Advantages of Servlets over CGI, Installing Servlets, The Servlet Life Cycle, Servlets API, PHP
Oct-2021	5	Java Server Pages (JSP), Active Server Pages (ASP).

**SEMESTER – II**

**Subject Code 20CS2T4**

**Title: Operating systems**

Month	Unit No.	Topic to be covered
July-2021	1	Features of MS-Word – MS-Word Window Components
Aug - 2021	2	Features of PowerPoint – Creating a Blank Presentation - Creating a Presentation using a Template
Sep -2021	3	Creating a new worksheet, Selecting cells, Entering and editing Text, Numbers.
Sep-2021	4	Creating a Simple Database and Tables, Forms: The Form Wizard.
Oct-2021	5	Queries and Dynasts, Creating and using select queries, Returning to the Query Design.

**SEMESTER – II**

**Subject Code: 20CS2OEL1**

**Title: DATAVISUALIZATION**

Month	Unit No.	Topic to be covered
July-2021	1	Creating Visual Analytics with Tableau Desktop, Connecting to Your Data - How To Connect To Your Data.
Aug - 2021	2	Building Your First Visualization-How Me Works-Chart Types, Text Tables, Maps, Bar Chart, Line Charts.
Sep -2021	3	Creating Calculations to enhance Your Data - What is Aggregation, What are Calculated Values and Table Calculations.
Sep-2021	4	Using Maps to Improve Insights - Create a Standard Map View, Plotting Your Own Locations on a Map
Oct-2021	5	Developing an Adhoc Analysis Environment - Generating New Data with Forecasts, Providing Self Evidence Adhoc Analysis with Parameters, Editing Views in Tableau Server.

**SEMESTER – IV**Subject Code: **21MCS401**Title: **MOOCS**

Month	Unit No.	Topic to be covered
July-2021	1	Installing and Configuring MySQL
Aug - 2021	2	Working with Functions and Arrays.
Sep -2021	3	Working with Forms.
Sep-2021	4	Working with Files and Directories.
Oct-2021	5	Interacting with MySQL using PHP

**SEMESTER – IV**Subject Code **21MCS402**Title: **BIG DATA AND ANALYTICS**

Month	Unit No.	Topic to be covered
July-2021	1	Classification of Digital Data. Introduction to Big Data: Characteristics of data, Evolution of Big Data, Definition of big data.
Aug - 2021	2	Big data analytics
Sep -2021	3	No-SQL, Hadoop, Why Hadoop?, Why not III RDBMS?, RDBMS versus Hadoop, Hadoop Overview.
Sep-2021	4	What is Mongo DB?, Why Mongo DB?, Terms used in RDBMS and Mongo DB, Data types in Mongo DB, Mongo DB query language.
Oct-2021	5	What is Pig?, Pig on Hadoop, Pig Latin Overview, Data Types in Pig, Running Pig, Execution Modes of Pig, HDFS commands, Relational Operators.

**SEMESTER – IV**Subject Code **21MCS403**Title: **Artificial Intelligence with Machine Learning**

Month	Unit No.	Topic to be covered
July-2021	1	Problem Solving Agents, Example Problems, Searching for Solutions, Uninformed Search Strategies, Informed (Heuristic) Search Strategies, Heuristic Functions.
Aug - 2021	2	First Order Logic: Representation Revisited, Syntax and Semantics of First Order Logic, Using First Order Logic, Knowledge Engineering in First Order Logic.
Sep -2021	3	Classical Planning, Knowledge Representation.
Sep-2021	4	Learning from Examples, Reinforcement Learning.
Oct-2021	5	Artificial Neural Networks, Instance Based Learning.

**SEMESTER – IV****Subject Code 21MCS404****Title: CLOUD COMPUTING**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
July-2021	1	Era of Cloud Computing, Introducing Virtualization
Aug - 2021	2	Cloud Computing Services, Open Source Cloud Implementation and Administration.
Sep -2021	3	Application Architecture for Cloud, Cloud Programming.
Sep-2021	4	Risks, Consequences and Costs for Cloud Computing, AAA administration for clouds.
Oct-2021	5	Application Development for cloud, Mobile Cloud Computing

**A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYURU**  
**DEPARTMENT OF TELUGU**  
**SEMESTER – I**  
**2022-2023 CURRICULAR PLAN**

Subject Code: **TELT11A** Title: **GENERAL TELUGU**

Month	Unit No.	Topic to be covered
Nov-2021	I	రాజనీతి
Dec-2021	II	దక్షయజ్ఞం
	III	ధౌమ్య ధర్మోపదేశం
Jan - 2022	IV	మధుర స్నేహం
	V	సీతా రావణ సంవాదం
Feb-2022		సంధులు, సమాసాలు, అలంకారాలు
Mar-2022		ఛందస్సు

**SEMESTER – II**  
**CURRICULAR PLAN**

Subject Code: **TELT21A** Title: **GENERAL TELUGU**

Month	Unit No.	Topic to be covered
June -'22	I	1. ఆధునిక కవిత్వం
		2. కన్యక
		3. కొండవీడు
		4. మాతృ సంగీతం
July-'22	II	5. తెలుగు కథానిక
		6. భయం (కథ)
		7. స్వేదం ఖరీదు (కథ)
Aug-'22	III	8. తెలుగు నవల - పరిచయం
		9. రథ చక్రాలు - నవల
		10. రథ చక్రాలు - సమీక్షా వ్యాసం
Sep-'22	IV	11. తెలుగు నాటకం పరిచయం
		12. యక్షగానం - నాటిక / నాటకం
		13. అపురూప కళారూపాల విధ్వంసక దృశ్యం - "యక్షగానం" - సమీక్షావ్యాసం
		14. తెలుగు సాహిత్య విమర్శ
	V	15. విమర్శ - స్వరూప స్వభావాలు , ఉత్తమ విమర్శకుడు

**SEMESTER – III**

**2022-2023 CURRICULAR PLAN**

Subject Code: **TEL - 301**

Title: **GENERAL TELUGU**

Month	Unit No.	Topic to be covered
Nov-2021	I	<p><b>వ్యక్తీకరణ నైపుణ్యాలు</b></p> <p>1. భాష - ప్రాథమిక అంశాలు:- భాష - నిర్వచనం, లక్షణాలు ఆవశ్యకత, ప్రయోజనాలు</p> <p>2. 'వర్ణం - పదం - వాక్యం', వాక్య లక్షణాలు, సామాన్య - సంయుక్త - సంశ్లేష్ట వాక్యాలు.</p> <p>3. భాషా నిర్మాణంలో 'వర్ణం - పదం - వాక్యం' ప్రాధాన్యత</p>
Dec-2021	II	<p><b>సృజనాత్మక రచన</b></p> <p>4. కవితా రచన:- ఉత్తమ కవిత - లక్షణాలు</p> <p>5. కథా రచన:- ఉత్తమ కథ - లక్షణాలు</p> <p>6. వ్యాస రచన:- ఉత్తమ వ్యాసం - లక్షణాలు</p>
Jan-'22	III	<p><b>అనువాద రచన</b></p> <p>7. అనువాదం:- నిర్వచనం, అనువాద పద్ధతులు.</p> <p>8. అనువాద సమస్యలు:- భౌగోళిక, భాషా, సాంస్కృతిక సమస్యలు, పరిష్కారాలు.</p> <p>9. అభ్యాసము:- ఆంగ్లం నుండి తెలుగునకు ఒక పేరాను అనువదించటం</p>
Feb-'22	IV	<p><b>మాధ్యమాలకు రచన - I:- ముద్రణ / ప్రింట్ మీడియా</b></p> <p>10. ముద్రణా మాధ్యమం / అచ్చు /:- పరిచయం, పరిధి, వికాసం.</p> <p>11. వివిధ రకాల పత్రికలూ పరిశీలన, పత్రికా భాష, శైలి, వైవిధ్యం.</p> <p>12. పత్రికా రచన:- వార్తా రచన, సంపాదకీయాలు, సమీక్షలు - అవగాహన.</p>
Mar-'22	V	<p><b>మాధ్యమాలకు రచన - II:- ప్రసార మాధ్యమం / ఎలక్ట్రానిక్ మీడియా</b></p> <p>13. ప్రసార మాధ్యమాలు:- నిర్వచనం, రకాలు, విస్తృతి, ప్రయోజనాలు.</p> <p>14. శ్రవణ మాధ్యమాలు:- రచన:- రేడియో రచన, ప్రసంగాలు, నాటికలు, ప్రసార సమాచారం.</p> <p>15. దృశ్య మాధ్యమాలు - రచన:- వ్యాఖ్యానం / యాంకరింగ్, టెలివిజన్ రచన.</p>



## DEPARTMENT OF HINDI

Academic Year – 2022-23

SEMESTER – I

CURRICULAR PLAN

Subject Code: **HINT11A** Title: **HINDI**

Month	Unit No.	Topic to be covered
Oct-2022 (9)	I IV	1. साहित्यकीमहत्ता 2. व्याकरण
Nov-2022	I II III	2.सच्चीवीरता 1.मुक्तिधन अनुवाद
Dec-2022	II	2.गूढसाई 3.उसनेकहाथा
Jan - 2023	I IV	मित्रता व्याकरण
Feb-2023	V	पत्रलेखन

A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU

## DEPARTMENT OF HINDI

Academic Year – 2022-23

### CURRICULAR PLAN

SEMESTER – III

Subject Code:HINT01A

Title : HINDI

Month	Unit No.	Topic to be covered
Oct-2022 (9)	I  IV	साखी बालवर्णन मातृभूमि अनुवाद
Nov-2022	I II	तोडतीपत्थर हिन्दीसाहित्यकाइतिहास भक्तिकाल: ज्ञान ज्ञानाश्रयीशाखा
Dec-2022	I III	गीतफरोश सामान्यनिबंध: सामाचारपत्र, कंप्यूटर, पर्यावरणऔरप्रदूषण
Jan - 2023	II IV	भक्तिकाल: प्रेमाश्रयीशाखा अनुवाद
Feb-2023	III V	बेकारीकीसमस्या परिपत्र जापन राष्ट्रभाषाहिन्दी

A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU

## DEPARTMENT OF HINDI

Academic Year – 2022-23

SEMESTER – II  
CURRICULAR PLAN

Subject Code :HINT21A

Title: HINDI

Month	Unit No.	Topic to be covered
March -'23 (14)	I II IV	संस्कृति और साहित्य का परस्पर संबंध जरिया संधिविच्छेद
April-'23 (21)	I II III	भारतएकहै भूखहड़ताल अनुवाद
May-'23 (15)	I II III	एचआईवी/एड्स परमात्माकाकुत्ता अनुवाद
June-'23 (11)	IV V	वाक्यप्रयोग अनुवाद
July-'23	V	पत्रलेखन
Aug-'23	ALL	Revision all Lessons

## DEPARTMENT OF ENGLISH

Academic Year – 2022-23

SEMESTER – I

CURRICULAR PLAN

Subject Code: **ENGT11B**

Title: **A COURSE IN COMMUNICATION AND SOFT SKILLS**

Month	Unit No.	Topic to be covered
Oct-2022 (9)	I	<b>Listening Skills</b> – 1. Importance of Listening 2. Types of Listening
Nov-2022	I II III	<b>Listening Skills</b> – Barriers to Effective Listening <b>Speaking Skills</b> – Sounds of English: Vowels and Consonants <b>Grammar</b> –Concord and Modals
Dec-2022	II III	<b>Speaking Skills</b> – Word Accent and Intonation <b>Grammar</b> – Articles, Prepositions and Tenses (Present/Past/Future)
Jan - 2023	III IV	<b>Grammar</b> – Question Tags, Sentence Transformation (Voice, Reported Speech & Degrees of Comparison) and Error Correction <b>Writing</b> – Punctuation and Spelling
Feb-2023	V	<b>Soft Skills</b> –Positive Attitude and Emotional Intelligence, Telephone Etiquette

## DEPARTMENT OF ENGLISH

Academic Year – 2022-23

### CURRICULAR PLAN

SEMESTER – III

Subject Code: ENG 301C

Title : A COURSE IN CONVERSATIONAL SKILLS

Month	Unit No.	Topic to be covered
Oct-2022 (9)	I	<b>Speech:</b> Tryst with Destiny <b>Skills:</b> Greetings Introductions
Nov-2022	II	<b>Speech</b> 1. Yes, We Can <b>Interview</b> 2. A Leader Should Know How to Manage Failure <b>Skills</b> 3. Requests
Dec-2022	III	<b>Interview</b> 1. Nelson Mandela's Interview <b>Skills</b> 2. Asking and Giving Information 3. Agreeing and Disagreeing
Jan - 2023	IV	Interview 1. JRD Tata's Interview With T.N.Ninan <b>Skills</b> 2. Dialogue Building 3. Giving Instructions/Directions
Feb-2023	V	<b>Speech</b> 1. You've Got to Find What You Love Steve Jobs <b>Skills</b> 2. Debates 3. Descriptions 4. Role Play

## DEPARTMENT OF ENGLISH

Academic Year – 2022-23

SEMESTER – II  
CURRICULAR PLAN

Subject Code: ENGT21B

Title: A COURSE IN READING & WRITING SKILLS

Month	Unit No.	Topic to be covered
March - '23 (14)	I	How to Avoid Foolish Opinions
	I	Vocabulary: Conversion of Words
	III	Upagupta
April- '23 (21)	I	One Word Substitutes,
	I	Collocations
	III	The Night Train at Deoli
	V	An Astrologer's Day
May- '23 (15)	IV	Coromandel Fishers
	IV	Notices, Agendas and Minutes
	II	The Doll's House
June- '23 (11)	II	Ode to the West Wind
	II	Florence Nightingale
July- '23	II	Skimming and Scanning
	III	Reading Comprehension
	IV	Note Making/Taking
	V	Expansion of Ideas
	V	Curriculum Vitae and Resume
Aug- '23	V	Letters
	V	E-Correspondence

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**  
**DEPARTMENT OF HISTORY**  
**SEMESTER – I**

**CURRICULAR PLAN**

Subject Code: HIST11B Title: Ancient Indian history and culture (From Indus valley Civil .to 13 century(A.D)

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>Nov-2021</b>	<b>I</b>	Ancient Indian Civilization (from Circa 3000 BC to 6 <sup>th</sup> BC):	
<b>Dec-2021</b>	<b>II</b>	Ancient Indian History & Culture (6 <sup>th</sup> Century BC to 2 <sup>nd</sup> Century AD):	
<b>Jan - 2022</b>	<b>III</b>	History & Culture of South India (2nd Century BC to 8 <sup>th</sup> Century AD):	
<b>Feb-2022</b>	<b>IV</b>	India from 3 <sup>rd</sup> century AD to 8 <sup>th</sup> century AD:	
<b>Mar-2022</b>	<b>V</b>	History and Culture of South India (9 <sup>th</sup> century AD to 13 <sup>th</sup> century AD):	

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**DEPARTMENT OF HISTORY**  
**SEMESTER – III**  
**CURRICULAR PLAN**

Subject Code: HIS301C Title : MODERN INDIAN HISTORY & CULTURE (1764-1947 A. D)

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>Nov-2021</b>	<b>I</b>	Policies of Expansion	
<b>Dec-2021</b>	<b>II</b>	Social, Religious & Self-Respect Movements	
<b>Jan-‘22</b>	<b>III</b>	Causes for the growth of Nationalism	
<b>Feb-‘22</b>	<b>IV</b>	Freedom Struggle from 1920 to 1947:	
<b>Mar-‘22</b>	<b>V</b>	Muslim League & the Growth of Communalism	

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**DEPARTMENT OF HISTORY  
SEMESTER – II  
CURRICULAR PLAN**

**Subject Code: HIST21 Title: Medieval Indian history and Culture(1206 A.D to 1764 A.D)**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>MAR-‘23</b>	<b>I</b>	Impact of Turkish Invasions	
<b>APRIL-‘23</b>	<b>II</b>	Impact of Islam on Indian Society and Culture	
<b>MAY-‘23</b>	<b>III</b>	Emergence of Mughal Empire	
<b>JUN-23</b>	<b>IV</b>	Administration, Economy, Society	
<b>JULY-‘23</b>	<b>V</b>	India under Colonial Hegemony	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE,  
VUYYURU**

**DEPARTMENT OF HISTORY  
SEMESTER – IV  
CURRICULAR PLAN**

**Subject Code: HIST401 Title: HISTORY & CULTURE OF ANDHRA (FROM 1512 TO 1956 AD)**

<b>MONTH</b>	<b>UNIT NO.</b>	<b>TOPIC TO BE COVERED</b>	<b>REMARKS</b>
<b>MAR-‘23</b>	<b>I</b>	1.1-Andhra through 16th& 19th Centuries AD:	
<b>APRIL-‘23</b>	<b>II</b>	Andhra under British rule: Administration	
<b>MAY-‘23</b>	<b>III</b>	Social Reform & New Literary Movements	
<b>JUN-23</b>	<b>IV</b>	Freedom movement in Andhra	
<b>JULY-23</b>	<b>V</b>	Movement for separate Andhra State	



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VUYYURU  
DEPARTMENT OF HISTORY  
SEMESTER – IV  
CURRICULAR PLAN**

**Subject Code: HIS402 Title: HISTORY OF MODERN WORLD (From 15th Cent. AD to 1945 AD)**

<b>MONTH</b>	<b>UNIT NO.</b>	<b>TOPIC TO BE COVERED</b>	<b>REMARKS</b>
<b>JUNE -'22</b>	<b>I</b>	Transformation from Medieval to Modern Era	
<b>JULY-'22</b>	<b>II</b>	American Revolution (1776); French Revolution (1789)	
<b>AUG-'22</b>	<b>III IV</b>	Unification of Italy; Unification of Germany Communist Revolution in Russia	
<b>SEP-'22</b>	<b>V</b>	World War II: Causes Fascism & Nazism	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE,  
VUYYURU  
DEPARTMENT OF HISTORY  
SEMESTER – VI  
CURRICULAR PLAN**

**Subject Code: seCHIS601 Title: TOURISM AND HOSPITALITY SERVICES 6B**

<b>MONTH</b>	<b>UNIT NO.</b>	<b>TOPIC TO BE COVERED</b>	<b>REMARKS</b>
<b>MAR-'23</b>	<b>I</b>	Tourism – Definition – Nature and Scope – History of Tourism–Types of Tourism – Domestic and International Tourism	
<b>APRIL-'23</b>	<b>II</b>	Relationship between history and tourism	
<b>MAY-'23</b>	<b>III</b>	Characteristics of Hospitality Industry – Inflexibility	
<b>MAY-'23</b>	<b>IV</b>	Duties, responsibilities & skills of front office staff – duties	
<b>JUNE-'23</b>	<b>V</b>	Different types of services offered in selected Hotels/Motels/Restaurants	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**  
**DEPARTMENT OF ECONOMICS**  
**SEMESTER – I**

**CURRICULAR PLAN**

Subject Code: **ECOT11B**

Title: **MICRO ECONOMIC ANALYSIS**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>Nov-2022</b>	<b>I</b>	Economic analysis and Methodology	
<b>Dec-2022</b>	<b>II</b>	Theory of Consumption	
<b>Jan - 2023</b>	<b>II</b> <b>III</b>	Theory of Consumption Theory of Production	
<b>Feb-2023</b>	<b>IV</b>	Theory of Exchange	
<b>Mar-2023</b>	<b>V</b>	Theory of Distribution	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**  
**DEPARTMENT OF ECONOMICS**  
**SEMESTER – III**

**CURRICULAR PLAN**

Subject Code: **ECO 301C**

Title : **DEVELOPMENT ECONOMICS**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>Nov-2022</b>	<b>I</b>	Economic Growth & Development	
<b>Dec-2022</b>	<b>I</b> <b>II</b>	Economic Growth & Development Modern Economic Growth	
<b>Jan - 2023</b>	<b>III</b>	Theories of Development and under development	
<b>Feb-2023</b>	<b>IV</b> <b>V</b>	Strategies of Economic development Institutions and Economic Development	
<b>Mar-2023</b>	<b>V</b>	Institutions and Economic Development	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**  
**DEPARTMENT OF ECONOMICS**  
**SEMESTER – III**

**CURRICULAR PLAN**

Subject Code: FM 301C Title: **FINANCIAL MARKETS**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>Nov-2022</b>	<b>I</b>	Introduction	
<b>Dec-2022</b>	<b>I</b>	Introduction	
<b>Jan - 2023</b>	<b>II</b>	Money market	
<b>Feb-2023</b>	<b>III</b>	Capital Market	
<b>Mar-2023</b>	<b>III</b>	Capital Market	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**  
**DEPARTMENT OF ECONOMICS**

**SEMESTER – V**

**CURRICULAR PLAN**

Subject Code: ECO 501 Titles: **ECONOMIC DEVELOPMENT AND INDIAN ECONOMY**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>Nov-2022</b>	<b>I</b>	Concept of Economic Growth	
<b>Dec-2022</b>	<b>II</b>	Sustainable Development	
<b>Jan - 2023</b>	<b>III</b>	Basic Features of Indian Economy	
<b>Feb-2023</b>	<b>IV</b>	National Income in India	
<b>Mar-2023</b>	<b>V</b>	Economic Reforms	

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**DEPARTMENT OF ECONOMICS**  
**SEMESTER – V**

**CURRICULAR PLAN**

Subject Code: ECO 502      Titles: **INDIAN AND ANDHRA PRADESH ECONOMY**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>Nov-2022</b>	<b>I</b>	Indian Agriculture	
<b>Dec-2022</b>	<b>II</b>	Structure and Growth of Indian Industry	
<b>Jan - 2023</b>	<b>III</b>	Disinvestment in India	
<b>Feb-2023</b>	<b>IV</b>	Planing in Indian Economy	
<b>Mar-2023</b>	<b>V</b>	Andhra Pradesh Economy	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**

**DEPARTMENT OF ECONOMICS**

**SEMESTER – II**  
**CURRICULAR PLAN**

Subject Code: **ECOT21B**      Title: **MACRO ECONOMIC ANALYSIS**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
June -'23	I	Introduction and National Income
	II	Theories of Employment
July-'23	II	Theories of Employment
	III	Money and Banking
Aug-'23	III	Money and Banking
	IV	Inflation and Trade cycles
Sep-'23	V	Finance and Insurance

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU  
DEPARTMENT OF ECONOMICS**

**SEMESTER – IV  
CURRICULAR PLAN**

**Subject Code: ECO 401C Title: ECONOMIC DEVELOPMENT IN INDIA  
AND ANDHRA PRADESH**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
June -'23	I	Basic features of Indian Economy
	II	National Income and Demography
July-'23	II	National Income and Demography
	III	Agricultural and Industrial development
Aug-'23	III	Agricultural and Industrial development
	IV	Indian Public Finance
Sep-'23	V	Andhra Pradesh Economy

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**  
**DEPARTMENT OF ECONOMICS**  
**SEMESTER – IV**  
**CURRICULAR PLAN**

Subject Code: **ECO 402C** Title: **STATISTICAL METHODS FOR ECONOMICS**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
June -'23	I	Nature and Definition of Statistics
July-'23	II III	Collection of Data & Diagrammatic Analysis Means of Central tendency
Aug-'23	III V	Means of Central tendency Correlation and Regression
Sep-'23	V	Time Series & Index numbers

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**DEPARTMENT OF ECONOMICS**  
**SEMESTER – VI**  
**CURRICULAR PLAN**

Subject Code: **ECO 601C** Title: **AGRICULTURAL ECONOMICS**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
June -'23	I	Nature and scope of Agricultural economics
July-'23	II III	Concept of Production Function Growth and Productivity , Trends in India Agriculture
Aug-'23	III IV	Growth and Productivity , Trends in India Agriculture System of Farming
Sep-'23	V	Emerging Trends in Production process etc..

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**  
**DEPARTMENT OF POLITICAL SCIENCE**  
**SEMESTER – I**

**CURRICULAR PLAN**

Subject Code: **POL11B** Title: **INTRODUCTION TO POLITICAL SCIENCE**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>Nov-2021</b>	<b>I</b>	Introduction	
<b>Dec-2021</b>	<b>II</b>	State	
<b>Jan - 2022</b>	<b>III</b>	Concepts of Political science	
<b>Feb-2022</b>	<b>IV</b>	Theories of Rights	
<b>Mar-2022</b>	<b>V</b>	Political ideologies	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**  
**DEPARTMENT OF POLITICAL SCIENCE**  
**SEMESTER – III**  
**CURRICULAR PLAN**

Subject Code: **POLT301C** Title : **INDIAN GOVERNMENT AND POLITICS**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>Nov-2021</b>	<b>I</b>	Social and ideologies bases of Indian constitution	
<b>Dec-2021</b>	<b>II</b>	Individual and State	
<b>Jan-‘22</b>	<b>III</b>	Union Executive	
<b>Feb-‘22</b>	<b>IV</b>	State Executive	
<b>Mar-‘22</b>	<b>V</b>	The Indian Judiciary	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**  
**DEPARTMENT OF POLITICAL SCIENCE**

**SEMESTER – V**

**CURRICULAR PLAN**

Subject Code: pol501c Titles: E Governance

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>Nov-2021</b>	<b>I</b>	Introduction to E-Governance	
<b>Dec-2021</b>	<b>II</b>	E-Governance in India	
<b>Jan-‘22</b>	<b>III</b>	Role of ICT	
<b>Feb-‘22</b>	<b>IV</b>	E-Governance Technology Act	
<b>Mar-‘22</b>	<b>V</b>	E-Governance Projects	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**  
**DEPARTMENT OF POLITICAL SCIENCE**

**SEMESTER – V**

**CURRICULAR PLAN**

Subject Code: pol502 Titles: Local Administration

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
<b>Nov-2021</b>	<b>I</b>	Introduction to Local Administration	
<b>Dec-2021</b>	<b>II</b>	Decentralization of Powers	
<b>Jan-‘22</b>	<b>III</b>	Local Governments grants	
<b>Feb-‘22</b>	<b>IV</b>	Challenges for Local administration	
<b>Mar-‘22</b>	<b>V</b>	Types of Reports	



**DEPARTMENT OF POLITICAL SCIENCE**

**SEMESTER – II  
CURRICULAR PLAN**

Subject Code: polt21      Title: **Basic Organs of the Governments**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>	<b>Remarks</b>
June -'22	<b>I</b>	<b>Constitution</b>	
July-'22	<b>II</b>	<b>Organs of Govt</b>	
Aug-'22	<b>III</b> <b>IV</b>	<b>Forms of Govt</b> <b>Democracy</b>	
Sep-'22	<b>V</b>	<b>Political parties Pressures group Public Opinion</b>	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE,  
VUYYURU  
DEPARTMENT OF POLITICAL SCIENCE  
SEMESTER – IV  
CURRICULAR PLAN**

**Subject Code: pol401 Title: Indian Political Process**

<b>MONTH</b>	<b>UNIT NO.</b>	<b>TOPIC TO BE COVERED</b>	<b>REMARKS</b>
<b>JUNE -'22</b>	<b>I</b>	Federal processes	
<b>JULY-'22</b>	<b>II</b>	Electoral processes	
<b>AUG-'22</b>	<b>III IV</b>	Gross Route Democracy-Decentralization Indian political system	
<b>SEP-'22</b>	<b>V</b>	Regularities and governance institutions	

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE,  
VUYYURU  
DEPARTMENT OF POLITICAL SCIENCE  
SEMESTER – IV  
CURRICULAR PLAN**

**Subject Code: pol402 Title: Western Political Thought**

<b>MONTH</b>	<b>UNIT NO.</b>	<b>TOPIC TO BE COVERED</b>	<b>REMARKS</b>
<b>JUNE -'22</b>	<b>I</b>	Ancient Greek Political Thought	
<b>JULY-'22</b>	<b>II</b>	Medieval and Modern Political Thought	
<b>AUG-'22</b>	<b>III IV</b>	Contractual Political thought Utilitarian political thought	
<b>SEP-'22</b>	<b>V</b>	Marxist Political thought	

## TEACHING PLAN 2022-2023

### ENVIRONMENTAL STUDIES

Course Code: CLSC001

B.A, B.COM, B.SC.,

MO NT H	Unit	Learning Units
JAN -22	I	<b>Unit 1: Environment and Natural Resources (8 Periods)</b> Multidisciplinary nature of environmental education. Scope and importance of environmental education. A brief account of forest, water and renewable energy resources. Biodiversity introduction, Levels of Biodiversity: genetic, species and ecosystem diversity. Concept, Structure and functions of an Ecosystem.
FEB -22	II	<b>Unit 2 : Environmental degradation and Impacts (12 Periods)</b> Threats to Biodiversity: Natural calamities, habitat destruction and fragmentation, over exploitation, hunting and poaching, introduction of exotic species, pollution, predator and pest control. A brief account of causes and effects of Air, Water, Soil and Noise pollution. Non-renewable energy resources, their utilization and influences. Climate change, Global warming, Acid rains, Ozone depletion. Human population growth and its impacts on environment; land use change, land degradation, soil erosion and desertification.
MA R-22	III	<b>Unit 3: Conservation of Environment (10 Periods)</b> Conservation of biodiversity: In-situ and ex-situ conservation of biodiversity. Control measures for various types of pollution; use of renewable and alternate sources of energy. Solid waste management- Measures for safe urban and Industrial wastes disposal. Environment Laws: Environment Protection Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols. Environmental movements: Bishnois of Rajasthan, Chipko, Silent valley.

**TEACHING PLAN**  
**Course Code: LSCT06**  
**HUMANVALUESANDPROFESSIONALETHICS**

**B.A, B.COM. B.SC.,**

<b>MO NT H</b>	<b>Unit</b>	<b>Learning Units</b>
JAN -22	I	<p><b>Introduction – Definition, Importance, Process &amp; Classifications of Value Education</b></p> <p>Understanding the need, basic guidelines, content, and process for Value Education Understanding the thought provoking issues; need for Values in our daily life. Choices making– Choosing, Cherishing&amp; Acting Classification of Value Education: understanding Personal Values, Social Values, and Moral Values &amp; Spiritual Values.</p>
FEB -22	II	<p><b>Harmony in the Family–Understanding Values in Human Relationships</b></p> <p>Understanding harmony in the Family-the basic unit of human interaction Understanding the set of proposals to verify the Harmony in the Family. Trust (<i>Vishwas</i>) and Respect (<i>Samman</i>) as the foundational values of relationship Present Scenario: Differentiation (Disrespect) in relationships on the basis of body, physical facilities, or beliefs. Understanding the Problems faced due to differentiation in Relationships Understanding the harmony in the society (society being an extension of family): <i>Samadhan, Samridhi, Abhay, Sah-astitva</i> as comprehensive Human Goals Visualizing universal harmonious order in society-Undivided Society (<i>AkhandSamaj</i>), Universal Order (<i>Sarvabhaum Vyawastha</i>)-from family to world family.</p>
MA R-22	III	<p><b>Professional Ethics in Education</b></p> <p>Understanding about Professional Integrity, Respect &amp; Equality, Privacy, Building Trusting Relationships. Understanding the concepts; Positive co-operation, Respecting the competence of other professions. Understanding about Taking initiative and Promoting the culture of openness.</p> <p style="padding-left: 40px;">✓ Depicting Loyalty towards Goals and objectives.</p> <p>Environment Laws: Environment Protection Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols. Environmental movements: Bishnois of Rajasthan, Chipko, Silent</p>

**ENVIRONMENTAL EDUCATION**  
Common for BA/B.Com/BSc Programmes

MO NT H	Unit	Learning Units
JAN -22	I	<p><b>Unit 1: Environment and Natural Resources</b> 06 Hrs.</p> <p>1. Multidisciplinary nature of environmental education; scope and importance. 2. Man as an integral product and part of the Nature. 3. A brief account of land, forest and water resources in India and their importance. 4. Biodiversity: Definition; importance of Biodiversity - ecological, consumptive, productive, social, ethical and moral, aesthetic, and option value. 5. Levels of Biodiversity: genetic, species and ecosystem diversity.</p>
FEB -22	II	<p><b>Unit-2: Environmental degradation and impacts</b> 12Hrs</p> <p>1. Human population growth and its impacts on environment; land use change, land degradation, soil erosion and desertification. 2. Use and over-exploitation of surface and ground water, construction of dams, floods, conflicts over water (within India). 3. Deforestation: Causes and effects due to expansion of agriculture, firewood, mining, forest fires and building of new habitats. 4. Non-renewable energy resources, their utilization and influences. 5. A brief account of air, water, soil and noise pollutions; Biological, industrial and solid wastes in urban areas. Human health and economic risks. 6. Green house effect - global warming; ocean acidification, ozone layer depletion, acid rains and impacts on human communities and agriculture. 7. Threats to biodiversity: Natural calamities, habitat destruction and fragmentation, over exploitation, hunting and poaching, introduction of exotic species, pollution, predator and pest control.</p>
MA R-22	III	<p><b>Unit 3: Conservation of Environment</b> 12 Hrs</p> <p>1. Concept of sustainability and sustainable development with judicious use of land, water and forest resources; afforestation. 2. Control measures for various types of pollution; use of renewable and alternate sources of energy. 3. Solid waste management: Control measures of urban and industrial waste. 4. Conservation of biodiversity: In-situ and ex-situ conservation of biodiversity. 5. Environment Laws: Environment Protection Act; Act; Wildlife Protection Act; Forest Conservation Act. 6. International agreements: Montreal and Kyoto protocols; Environmental movements: Bishnois of Rajasthan, Chipko, Silent valley.</p>

**TITLE OF THE PAPER: Fundamentals of Accounting**

**Semester: I**

**Course Code: COMT11B**

**Syllabus**

<b>MONTH</b>	<b>Unit</b>	<b>Learning Units</b>
DEC-2022	I	<b>Introduction</b> :Need for Accounting – Definition – Objectives, – Accounting Concepts and Conventions – GAAP - Accounting Cycle - Classification of Accounts and its Rules – Bookkeeping and Accounting - Double Entry Book-Keeping - Journalizing - Posting to Ledgers, Balancing of Ledger Accounts (including Problems).
JAN - 2023	II	<b>Subsidiary Books:</b> Types of Subsidiary Books - Cash Book, Three-column Cash Book- Petty Cash Book (including Problems).
FEB-2023	III	<b>Trial Balance and Rectification of Errors:</b> Preparation of Trial balance - Errors – Meaning – Types of Errors – Rectification of Errors – Suspense Account (including Problems)
Mar-2023	IV	<b>Bank Reconciliation Statement:</b> Need for Bank Reconciliation - Reasons for Difference between Cash Book and Pass Book Balances- Preparation of Bank Reconciliation Statement - Problems on both Favorable and Unfavorable Balance (including Problems).
APR-2023	V	<b>Final Accounts: Preparation of Final Accounts:</b> Trading account – Profit and Loss account – Balance Sheet – Final Accounts with Adjustments (including Problems).

**TITLE OF THE PAPER: Principles of Management**

**Semester: I Course Code COMT14P**

**Syllabus**

<b>MONTH</b>	<b>Unit</b>	<b>Learning Units</b>
DEC-2021	I	<b>Introduction of Management Definition</b> - Management - functions of management - principles of management -levels of management- Trends and Challenges of Management in Global Scenario.
JAN - 2022	II	<b>Planning Nature and purpose of planning</b> - Planning process - Types of plans - Objectives - Managing by objective (MBO) Strategies - Types of strategies
FEB-2022	III	<b>Organizing</b> Nature and purpose of organizing - Organization structure Formal and informal groups organization - Line and Staff authority -Centralization and Decentralization - Delegation of authority
Mar-2022	IV	<b>Motivation</b> Theories -Leadership Styles - Leadership theories - Communication - Barriers to effective communication.
APR-2022	V	<b>Controlling</b> Process of controlling - Types of control- Budgetary and non-budgetary, control techniques - Managing Productivity - Cost Control - Purchase Control- Maintenance Control - Quality Control

**TITLE OF THE PAPER: Business Organization and Management**  
**Semester: I Course Code COMT12A**

MONTH	Unit	Learning Units
DEC-2021	I	<b>Introduction Concepts of Business, Trade, Industry and Commerce:</b> Business – Meaning, Definition, Features and Functions of Business - Trade Classification – Aids to Trade – Industry Classification and Commerce - Factors Influencing the Choice of Suitable form of Organization.
JAN - 2022	II	<b>Forms of Business Organizations:</b> Features, Merits and Demerits of Sole Proprietorship and Partnership Business - Features Merits and Demerits of Joint Stock Companies - Public Sector Enterprises (PSEs) - Multinational Corporations (MNCs)- Differences between Private Limited Public Limited Company.
FEB-2022	III	<b>Company Incorporation:</b> Preparation of Important Documents for Incorporation of Company - Certificate of Incorporation and Certificate of Commencement of Business - Contents of Memorandum and Articles of Association – Content of Prospectus.
Mar-2022	IV	<b>Management:</b> Meaning Characteristics - Fayol's 14 Principles of Management - Administration Vs. Management - Levels of Management.
APR-2022	V	<b>Functions of Management:</b> Different Functions of Management - Meaning – Definition – Characteristics Merits and Demerits of Planning - Principles of Organization – Line and staff of Organization.

**TITLE OF THE PAPER: Business Environment**  
**Semester: I Course Code COMT13**  
**Business Environment**

MONTH	Unit	Learning Units
DEC-2021	I	<b>Overview of Business Environment:</b> Business Environment – Meaning – Characteristics – Scope -Macro and Micro Dimensions of Business Environment -Environmental Analysis- Purpose & Techniques.
JAN - 2022	II	<b>Economic Environment:</b> Economic Environment – Nature of the Economy – Structure of Economy – Economic Policies & Planning the Economic Condition – NITI Ayog – National Development Council – Five Year Plans
FEB-2022	III	<b>Economic Policies:</b> Economic Reforms and New Economic Policy – New Industrial Policy – Competition Law – Fiscal Policy – Objectives and Limitations – Monetary Policy and RBI
Mar-2022	IV	<b>Social, Political and Legal Environment:</b> Concept of Social Responsibility of Business towards Stakeholders - Demonetization, GST and their Impact - Political Stability - Legal Changes.
APR-2022	V	<b>Global Environment:</b> Globalization – Meaning – Role of WTO – WTO Functions -IBRD– Trade Blocks, BRICS, SAARC, ASEAN in Globalization

**TITLE OF THE PAPER: INSURANCE PROMOTION**  
**Semester: I Course Code COMT15S**  
**Syllabus**  
**INSURANCE PROMOTION**

MONTH	Unit	Learning Units
DEC-2021 JAN - 2022	I	Introduction of Insurance - Types of insurances. Growth of Insurance sector in India - Regulatory mechanism (IRDA) - Its functions
FEB-2022 Mar-2022	II	Life Insurance plans. Health insurance plans. Products and features. Contents of documents– Sales Promotion methods - Finding prospective customers –Counselling – Helping customers in filing - Extending post-insurance service to customers
APR-2022	III	General Insurance - It's products (Motor, Marine, Machinery, Fire, Travel and Transportation) and features. Contents of documents. Dealing with customers – Explaining Products to Customers - Promoting Customer loyalty. Maintenance of Records.

**TITLE OF THE PAPER: Advanced Accounting**  
**Semester: I Course Code : COMT31II**  
**Syllabus**

MONTH	Unit	Learning Units
DEC-2021	I	<b>Accounting for Non Profit Organizations:</b> Non Profit Entities- Meaning - Features of Non-Profit Entities –Provisions as per Sec 8 - Accounting Process- Preparation of Accounting Records - Receipts and Payments Account- Income and Expenditure Account - Preparation of Balance Sheet (including problems).
JAN - 2022	II	<b>Single Entry System:</b> Features – Differences between Single Entry and Double Entry – Disadvantages of Single Entry- Ascertainment of Profit and Preparation of Statement of Affairs (including Problems)- Conversion of Single entry to Double entry system (Simple Problems).
FEB-2022	III	<b>Hire Purchase System:</b> Features –Difference between Hire Purchase and Instalment Purchase Systems - Accounting Treatment in the Books of Hire Purchaser and Hire Vendor - Default and Repossession (including Problems).
Mar-2022	IV	<b>Partnership Accounts-I:</b> Meaning – Partnership Deed - Fixed and Fluctuating Capitals-Accounting Treatment of Goodwill - Admission and Retirement of a Partner (including problems).
APR-2022	V	<b>Partnership Accounts-II:</b> Dissolution of a Partnership Firm – Application of Garner v/s Murray Rule in India – Insolvency of one or more Partners (including problems).



**TITLE OF THE PAPER: Business Statistics**  
**Semester: III Course Code COMT32**  
**Syllabus**

MONTH	Unit	Learning Units
DEC-2021	I	<b>Introduction to Statistics:</b> Definition, Importance and limitation of statistics, Collection of data, Schedule and questionnaire, Frequency distribution, Tabulation
JAN - 2022	II	<b>Measures of Central Tendency:</b> Characteristics of measures of central tendency, Types of Averages, Arithmetic Mean, Geometric Mean, Harmonic Mean, Median, Mode
FEB-2022	III	<b>Measures of dispersion and Skewness:</b> Properties of dispersion, Range, Quartile Deviation, Mean deviation, Standard deviation, Coefficient of Variation, Skewness Definition, Karl Pearson's and Bowley's Measures Of skewness
Mar-2022	IV	<b>Measures of Relation:</b> Meaning and use of correlation, Types of correlation, Karl Pearson's correlation coefficient, Probable Error, Spearman's Rank correlation, Regression analysis comparison between correlation and Regression, Regression Equations
APR-2022	V	<b>Analysis of Time Series &amp; Index Numbers</b> Meaning and utility of time series, Components of Time series, Measurement of trend and Seasonal Variations, Techniques of Time series analysis, Methods of averages(Semi , Moving averages), Least square method, Index Numbers, Methods of Construction of Index numbers, Price index numbers, Limitations of index numbers.

**TITLE OF THE PAPER: Marketing**  
**Semester: III Course Code COMT33**  
SYLLABUS **Marketing**

**Course Details**

MONTH	Unit	Learning Units
DEC-2021	I	<b>Introduction:</b> Concepts of Marketing: Need, Wants and Demand - Marketing Concepts – Marketing Mix - 4 P's of Marketing – Marketing Environment.
JAN - 2022	II	<b>Consumer Behavior and Market Segmentation:</b> Buying Decision Process – Stages – Buying Behavior – Market Segmentation –Bases of Segmentation - Selecting Segments – Advantages of Segmentation
FEB-2022	III	<b>Product Management:</b> Product Classification – Levels of Product - Product Life Cycle - New Products, Product Mix and Product Line Decisions - Design, Branding, Packaging and Labelling.
Mar-2022	IV	<b>Pricing Decision:</b> Factors Influencing Price – Determination of Price - Pricing Strategies: Skimming and Penetration Pricing.
APR-2022	V	<b>Promotion and Distribution:</b> Promotion Mix - Advertising - Sales promotion - Publicity – Public Relations - Personal Selling and Direct Marketing - Distribution Channels – Online Marketing

**TITLE OF THE PAPER: E COMMERCE****Semester: III Course Code COMT34****Syllabus**

<b>MONTH</b>	<b>Unit</b>	<b>Learning Units</b>
DEC-2021	I	<b>Introduction, Nature and Scope</b> Introduction- Definition –importance- Nature and scope of e commerce- Advantages and limitations-Types of ecommerce– B2B,B2C,C2B,C2C,B2A,C2A-Frameworkecommerce
JAN - 2022	II	<b>Environmental and Technical support Aspects</b> Technical Components-Internet and its component structure-Internet Vs Intranet, Vs Extranet and their differences-Website design- its structure- designing, developing and deploying the system-
FEB-2022	III	<b>Security and Legal Aspects</b> Security environment –its preliminaries and precautions-protecting Web server with Firewalls-Importance of Digital Signature –its components – Cyber Law-Relevant Provisions of IT Act2000.
Mar-2022	IV	<b>Operational Services of e Commerce</b> E retailing –features- E Services-Banking, Insurance, Travel, Auctions, Learning, Publication and Entertainment-Payment of utilities (Gas, Current Bill, Petrol Products)- On Line Shopping (Amazon,Flip kart, Snapdeal etc.)
APR-2022	V	<b>E payment System</b> Types of e payment system- its features-Digital payments (Debit Card/Credit Cards, Internet Banking, Mobile wallets- Digital Apps (unified Payment Services-Phone Pay, Google Pay, BHIMEtc.)UnstructuredSupplementaryServicesData(BankPrepaidCard,Mobile banking)-

**TITLE OF THE PAPER: ONLINE BUSINESS****Semester: III Course Code COMT 35S****Syllabus ONLINE BUSINESS**

<b>MONTH</b>	<b>Unit</b>	<b>Learning Units</b>
DEC-2021	I	Introduction to Online-Business-Definition-Characteristics-Advantages of Online Business-Challenges- Differences between off-line business, e- commerce and Online Business.
JAN - 2022		
FEB-2022 Mar-2022	II	Online-business Strategies-Strategic Planning Process- Procurement - Logistics & Supply Chain Management- Customer Relationship management.
APR-2022	III	Designing Online Business Website – Policies - Security & Legal Issues - Online Advertisements - Payment Gateways - Case Study

**TITLE OF THE PAPER: INSURANCE PROMOTION**  
**Semester: III Course Code COMT36S**  
**Syllabus**  
**INSURANCE PROMOTION**

<b>MONTH</b>	<b>Unit</b>	<b>Learning Units</b>
DEC-2021 JAN - 2022	I	Introduction of Insurance - Types of insurances. Growth of Insurance sector in India - Regulatory mechanism (IRDA) - Its functions
FEB-2022 Mar-2022	II	Life Insurance plans. Health insurance plans. Products and features. Contents of documents– Sales Promotion methods - Finding prospective customers –Counselling – Helping customers in filing - Extending post-insurance service to customers
APR-2022	III	General Insurance - It's products (Motor, Marine, Machinery, Fire, Travel and Transportation) and features. Contents of documents. Dealing with customers – Explaining Products to Customers - Promoting Customer loyalty. Maintenance of Records.

**TITLE OF THE PAPER: Advanced Corporate Accounting**  
**Semester: V / VI**  
**Syllabus: ADVANCED CORPORATE ACCOUNTING**  
**Paper code: CACA-501 G/C**

<b>MONTH</b>	<b>Unit</b>	<b>Learning Units</b>
DEC-2021	I	<b>Purchase of Business</b> Meaning - Purchase Consideration - Methods for determining Purchase Consideration-Discharge of Purchase Consideration-Accounting Treatment.
JAN - 2022	II	<b>Amalgamation of Companies</b> Meaning and Objectives - Provisions for Amalgamation of Companies as per Accounting Standard 14 - Accounting Treatment.
FEB-2022	III	<b>Internal Reconstruction of Companies</b> Meaning - Forms of Internal Reconstruction - Alteration of Share Capital and Reduction of Share Capital- Accounting Treatment.
Mar-2022	IV	<b>Accounts of Holding Companies</b> Meaning of Holding Companies and Subsidiary companies- Consolidated Financial Statements- Legal requirements on Consolidation-Calculation of Minority Interest- Accounting Treatment.
APR-2022	V	<b>Liquidation</b> Meaning - Modes of Winding up of a Company- - Liquidator's Final Statement of Account - Calculation of Liquidator's Remuneration - Preparation of Statement of Affairs and Deficiency Account- Accounting Treatment

**TITLE OF THE PAPER: SOFTWARE SOLUTIONS TO ACCOUNTING****Semester: V / VI****Syllabus: SOFTWARE SOLUTIONS TO ACCOUNTING****Paper code: - CSSA-502 G/C**

<b>MONTH</b>	<b>Unit</b>	<b>Learning Units</b>
DEC-2021	I	<b>Computerized Accounting</b> Microsoft Excel Spread Sheet- Functions in Excel- Preparation of Accounts, Statements and Budgets using MS Excel- Analysis and Interpretation.
JAN - 2022	II	<b>Introduction to Leading Accounting Soft wares –</b> Busy - Marg – Quick Books - Zoho Books -Tally- Features and Accounting.
FEB-2022	III	<b>Tally ERP-9 - Company Creation –</b> Tally Startup Screen- Gateway of Tally- Create a Company - Alter & Delete company- Backup and Restore- Security Features in Tally.
Mar-2022	IV	<b>Tally- Accounting Masters-</b> Groups- Create Ledgers- Alter& Delete - Inventory Masters- Creating Stock Groups - Stock Items- Unit of Measurement- Alter & Delete.
APR-2022	V	<b>Tally-Voucher Entry –</b> Vouchers Types - Vouchers Entry - Alter and deleting Settings Purchase Vouchers and Sales Vouchers including Tax component –Reports Generation.

**TITLE OF THE PAPER: ADVERTISING AND MEDIA PLANNING****Semester: V / VI****Syllabus: ADVERTISING AND MEDIA PLANNING****Paper code : CAMP-503 G/C**

<b>MONTH</b>	<b>Unit</b>	<b>Learning Units</b>
DEC-2021	I	<b>Introduction, Nature and Scope</b> Advertising- Nature and Scope- Functions - Impact on Social, Ethical and Economical Aspects - Its Significance – Advertising as a Marketing Tool and Process for Promotion of Business Development - Criticism on advertising
JAN - 2022	II	<b>Strategies of Advertisements</b> Types of Advertising Agencies and their Strategies in Creating Advertisements - Objectives - Approach - Campaigning Process - Role of Advertising Standard Council of India (ASCI) - DAGMAR approach
FEB-2022	III	<b>Process of Advertisement</b> Creativeness and Communication of Advertising –Creative Thinking – Proces – Appeals – Copy Writing - Issues in Creation of Copy Testing –Slogan Elements of Design and Principles of Design
Mar-2022	IV	<b>Media Planning</b> Advertising Media - Role of Media - Types of Media - Print Media - Electronic Media and other Media - Advantages and Disadvantages – Media Planning - Selection of Media
APR-2022	V	<b>Analysis of Market Media</b> Media Strategy – Market Analysis -Media Choices - Influencing Factors - Target, Nature, Timing, Frequency, Languages and Geographical Issues - Cas Studies

**TITLE OF THE PAPER: SALES PROMOTION AND PRACTICE****Semester: V / VI****Syllabus: SALES PROMOTION AND PRACTICE****Paper code: CSPP -504 G/C**

<b>MONTH</b>	<b>Unit</b>	<b>Learning Units</b>
DEC-2021	I	<b>Introduction to Sales Promotion:</b> Nature and Scope of Sales Promotion- Influencing Factors - Sales Promotion and Control - Strengths and Limitations of Sales Promotion – Sales Organization - Setting-up of Sales Organization - Types of Sales Organization.
JAN - 2022	II	<b>Sales Promotion and Product Life Cycle:</b> Types of Sales Promotion - Consumer Oriented - Trade Oriented - Sales Oriented - Various Aspects - Sales Promotion methods in different Product Life Cycle – Cross Promotion - Sales Executive Functions- Theories of Personal Selling - Surrogate Selling.
FEB-2022	III	<b>Strategies and Promotion Campaign:</b> Tools of Sales Promotion - Displays, Demonstration, Fashion Shows, Conventions - Conferences, Competitions – Steps in designing of Sales Promotion Campaign – Involvement of Salesmen and Dealers – Promotional Strategies - Ethical and Legal issues in Sales Promotion.
Mar-2022	IV	<b>Salesmanship and Sales Operations:</b> Types of Salesman - Prospecting - Pre-approach and Approach - Selling Sequence - Sales budget, Sales territories, Sales Quota's - Point of Sale – Sales Contests - Coupons and Discounts - Free Offers - Showrooms and Exhibitions - Sales Manager Qualities and functions.
APR-2022	V	<b>Sales force Management and Designing:</b> Recruitment and Selection - Training - Induction - Motivation of sales personnel - Compensation and Evaluation of Sales Personnel - Designing of Events for Enhancing Sales Promotion

**TITLE OF THE PAPER: DIGITAL MARKETING****Semester: V / VI****Syllabus: DIGITAL MARKETING****Paper code: CDM -505 G**

<b>MONTH</b>	<b>Unit</b>	<b>Learning Units</b>
DEC-2021	I	<b>Introduction</b> Digital marketing: Meaning – importance – traditional online marketing vs digital marketing – online market place analysis Micro Environment – Online Macro Environment - trends in digital marketing – competitive analysis.
JAN - 2022	II	<b>Web site planning and creation</b> Web Site: meaning – objectives – components of website - website creation – incorporation of design and– adding content, installing and activating plugins.
FEB-2022	III	<b>Search Engine Optimization (SEO)</b> SEO: Meaning – History and growth of SEO –Importance of Search Engine - On page Optimization – off page optimization – Role of Search Engine Operation- google Ad words – Search Engine Marketing: Campaign Creation – Ad Creation, Approval and Extensions.
Mar-2022	IV	<b>Social Media Marketing:</b> Meaning of social media and Social Media Marketing – social Management tools-strategy and planning – social media network – Social Networking – video creation and sharing – use of different social media platforms - Content creation - Blogging – Guest Blogging.
APR-2022	V	<b>Email marketing:</b> Meaning – Evolution of email – importance of email marketing – Development and Advancements in e mail marketing - email marketing platforms – creating and Tracking emailers–create forms – create opt-in lists – mapping industry trends and eliminating spam messages.

**TITLE OF THE PAPER: Service Marketing**

**Semester: V / VI**

**Syllabus: Service Marketing**

**Paper code: CSM -506 G**

<b>MONTH</b>	<b>Unit</b>	<b>Learning Units</b>
DEC-2021	I	<b>Introduction: Nature and Scope of services</b> Introduction: Nature and Scope of services characteristics of services, classification of services – need for service marketing - reasons for the growth of services sector, Overview of marketing Different Service Sectors - Marketing of Banking Services -Marketing in Insurance Sector - Marketing of Education Services.
JAN -2022	II	<b>Consumer Behavior in Services Marketing</b> Customer Expectations on Services- Factors influencing customer expectation of services. - Service Costs experienced by Consumer, the Role of customer in Service Delivery, Conflict Handling in Services, Customer Responses in Services, Concept of Customer Delight
FEB-2022	III	<b>Customer Relationship marketing and Services Market Segmentation.</b> Customer Relationship marketing: Meaning -Importance of customer & customer's role in service delivery, Benefits of customer relationship, retention strategies. Services Market Segmentation: - Market segmentation - Basis & Need for segmentation of services, bases of segmentation services, segmentation strategies in service marketing.
Mar-2022	IV	<b>Customer Defined Service Standards.</b> Customer Defined Service Standards - Hard and Soft, Concept of Service Leadership and Service Vision -Meeting Customer Defined Service Standards -Service Flexibility Versus Standards - Strategies to Match Capacity and Demand - managing Demand and Supply of Service – applications of Waiting Line and Queuing Theories to Understand Pattern Demand.
APR-2022	V	<b>Service Development and Quality Improvement.</b> Service Development – need, importance and Types of New Services - stages in development of new services, service Quality Dimensions - Service Quality Measurement and Service Mapping, Improving Service Quality and Service Delivery, Service Failure and Recovery.

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2022-23

Class: I B.Sc MPC, MPCS, MCCS & MSCS

Paper Title: Differential Equations

Course Code: MATT11A

Academic Year: 2022-23

Month	Units	Planned (Unit No. & Chapter Title)
Nov-21	Unit III	Higher Order L.D. Equations-I, Solution of Homogeneous L.D. Equations & Non Homogeneous L.D. Equations with constant coefficients (Method I & II).
Dec-21	Unit IV	Higher Order L.D. Equations -II, Solution of Non Homogeneous L.D. Equations with constant coefficients (Method III, IV & V).
Jan-22	Unit V	Higher Order L.D. Equations - III, M.V.P Method, The Cauchy-Euler Equation.
Feb-22	Unit I	Differential Equations Of First Order & First Degree, L.D. Equations, D.E reducible to Linear form, Exact D.E., Integrating factors, Change of Variables.
Mar-22	Unit II	Differential Equations of the First Order but not of the First Degree, Orthogonal Trajectories, Equations Solvable for $p, y$ & $x$ , Equations of the First Degree In $x$ & $y$ -Clairaut's Equation.

Class: II B.Sc MPC, MCCS, MPCS, MSCS

Paper Title: Abstract Algebra

Course Code: MATT31

Academic Year: 2022-23

Month	Units	Planned (Unit No. & Chapter Title)
Oct-22	Unit-I:	Groups: Binary operation, Semi group, group definition and elementary properties, finite and infinite groups-examples order of a group, composition tables with examples
Nov-22	Unit-II:	Subgroups: Multiplication of two subgroups, union and intersection of two subgroups, subgroup of index 2 is a normal subgroup, quotient group
Nov-22	Unit-III:	Normal Subgroups, proper and improper normal subgroups, intersection of two normal sub groups group.
Dec-22	Unit-IV:	Homomorphism, Kernel of Homomorphism, fundamental theorem on Homomorphism.
Dec-22	Unit-V:	Permutations And Cyclic Group, Inverse of a permutation, even & odd permutations, Cayley's theorem.

Class: III B.Sc MPC,MPCS,MCCS  
 Paper Title: Ring Theory & Vector Calculus  
 Course Code: SECMAT501  
 Academic Year: 2022-23

Month	Units	Planned (Unit No. & Chapter Title)
<b>OCT-22</b>	Unit-I:	Multiple Integrals-I
<b>NOV-22</b>	Unit-II	Multiple Integrals-II
<b>DEC-22</b>	Unit-III:	Vector Differentiation : Gradient,Divergent,Curl Operators of Vectors
<b>JAN-23</b>	Unit-IV:	Vector Integration: Line Integral, Surface Integral, Volume Integral Unit with examples
<b>JAN-23</b>	Unit-V:	Vector Integration Applications: Theorems of Gauss and Stokes, Green's theorem in plane and applications of these theorems

Class: III B.Sc MPC,MPCS, MCCS  
 Paper Title: Integral Transform with application  
 Course Code: SECMAT502  
 Academic Year: 2022-23

Month	Units	Planned (Unit No. & Chapter Title)
<b>OCT-22</b>	Unit - I :	Applications of Laplace Transforms of D.E with Constant coefficients
<b>NOV-22</b>	Unit - II :	Applications of Laplace Transforms of solutions D.E - II
<b>DEC-22</b>	Unit - III :	Applications of Laplace Transforms to Integral Equations
<b>JAN-23</b>	Unit - IV :	Fourier Series - I
<b>JAN-23</b>	Unit - V :	Fourier Series - II

Class: I B.Sc MPCS,MCCS,MSCS  
 Paper Title: Real Analysis  
 Course Code: MATT201  
 Academic Year: 2022-23

Month	Units	Planned (Unit No. & Chapter Title)
<b>MARCH-23</b>	Unit-I :	Real Numbers, Sequences bounded sequences, the cauchy's criterion, bolzano- theorem ,cauchy's general principle of convergence theorem
<b>APRIL-23</b>	Unit-II:	Infinite Series: p-test, cauchy's nth Root test, Ratio test ,Leibnitz test
<b>JUNE-23</b>	Unit-III :	Limits and Continuity, Left and Right hand limits
<b>JUNE-23</b>	Unit-IV:	Differentiation And Mean Value Theorem,Role's Theorem, Cauchy's Mean Value Theorem.
<b>JULY-23</b>	Unit-V:	Riemann Integration, Darboux Theorem, Fundamental Theorem of integral calculus.



Class: II B.Sc MPC,MPCS,MCCS & MSCS

Paper Title: linear Algebra

Course Code: MATT41A

Academic Year: 2022-23

Month	Units	Planned (Unit No. & Chapter Title)
<b>MARCH-23</b>	Unit IV:	Matrices, Linear System of Equations
<b>APRIL-23</b>	Unit IV: Unit V:	Characteristic roots and vectors of a square matrices. Inner Product Spaces.
<b>MAY-23</b>	Unit I: Unit II:	Vector Space I, Vector Subspaces, LD and LID Vector Space II,
<b>JUNE-23</b>	Unit II: Unit III:	Vector Space II, Basis and Dimensions Linear Transformations
<b>JULY-23</b>	Unit III:	Linear Transformations, Rank Nullity theorem

Class: II B.Sc MPC,MPCS,MCCS & MSCS

Paper Title: Solid Geometry

Course Code: MATT01A

Academic Year: 2022-23

Month	Units	Planned (Unit No. & Chapter Title)
<b>MARCH-23</b>	Unit-I	The Plane
<b>APRIL-23</b>	Unit-II	The Line
<b>MAY-23</b>	Unit-III	Sphere
<b>JUNE-23</b>	Unit-Iv	cone
<b>JULY-23</b>	Unit-V	Cylinder

Class: III B.Sc MPC,MPCS & MCCS

Paper Title: Multiple Integrals & Applications of Vector Calculus

Course Code: SECMAT501

Academic Year: 2022-23

Month	Units	Planned (Unit No. & Chapter Title)
<b>MARCH-23</b>	Unit-I:	Multiple Integrals-I
<b>APRIL-23</b>	Unit-II	Multiple Integrals-II
<b>MAY-23</b>	Unit-III:	Vector Differentiation :Gradient,Divergent,Curl Operators of Vectors
<b>JUNE-23</b>	Unit-IV:	Vector Intigration:Line Integral,Surface Integral,Volume Integral Unit with examples
<b>JUNE-23</b>	Unit-V:	Vector Intigration Applications:Theorems of Gauss and Stokes,Green's theorem in plane and applications of these theorems

Class: III B.Sc MPC,MPCS & M CCS  
 Paper Title: Integral Transforms with Applications  
 Course Code: SECMAT502  
 Academic Year: 2022-23

Month	Units	Planned (Unit No. & Chapter Title)
<b>MARCH-23</b>	Unit - I :	Applications of Laplace Transforms of D.E with Constant coefficients
<b>APRIL-23</b>	Unit - II	Applications of Laplace Transforms of solutions D.E - II
<b>MAY-23</b>	Unit - III :	Applications of Laplace Transforms to Integral Equations
<b>JUNE-23</b>	Unit - IV :	Fourier Series - I
<b>JUNE-23</b>	Unit - V :	Fourier Series - II

Class: I B.Sc  
 Paper Title: Analytical Skills  
 Course Code: LSC003  
 Academic Year: 2022-23

Month	Units	Planned (Unit No. & Chapter Title)
<b>Oct-22</b>	Unit - I :	Data Interpretations
<b>Nov-22</b>	Unit - II	Verbal Reasoning & Arithmetic Ability
<b>Dec-22</b>	Unit - III :	Quantitative Aptitude & Business Computations

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Semester wise Academic Plan & Fulfillment Record

NAME OF THE DEPARTMENT : Statistics

Academic Year : 2021-2022

Paper Title : Descriptive Statistics and Theory of Probability

Class: I MSCs

Course Code: STAT11B

<b>Month</b>	<b>Planned (Unit No. &amp; Chapter Title)</b>	<b>Remarks</b>
<b>Nov-21</b>	Unit-I : Moments, central and non-central, Inter-relationships, Shippard's corrections, Skewness, karl pearson's, Bowley's formule, Kurtosis, problems.	
<b>Dec-21</b>	Unit-II : Probability-I, Definitions, Addition of probabilities two and n events, Boole's inequality, problems.	
<b>Jan-22</b>	Unit-III : Probability-II, Conditional probability, dependent and independence events, multiplication law of probability two and n events, Baye's theorem, problems.	
<b>Feb-22</b>	Unit-IV : Random Variables, Definitions, Types, Bivariate random variables, Types, Distribution function and properties, problems.	
<b>Mar-22</b>	Unit-V : Mathematical Expectations, Properties, Cauchy-Schwartz inequality, m.g.f, c.g.f, p.g.f, c.f, Chebyshev's inequality, wlln, problems.	

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Vuyyuru - 521 165.**

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**NAME OF THE DEPARTMENT : Statistics**

Academic Year : 2021-2022

Paper Title : Probability  
Distributions and Statistical  
Methods

Class: I MSCs

Course Code: STAT21C

<b>Month</b>	<b>Planned (Unit No. &amp; Chapter Title)</b>	<b>Remarks</b>
<b>May-22</b>	Unit-I : Theoretical Probability Discrete Distributions, Rectangular, Binomial, Poisson, Negative Binomial, Geometric, Hyper Geometric Distributions, problems.	
<b>Jun-22</b>	Unit-II : Theoretical Probability Continuous Distributions, Rectangular, Normal, Exponential, Gamma, Beta Distributions.	
<b>Jul-22</b>	Unit-IV : Correlation, Types, Karl pearson's, Rank correlation, Bi-variate frequency distribution. Multiple and Partial correlations, properties, multiple determination, problems.	
<b>Aug-22</b>	Unit-V : Curve fitting, fitting of straight line, second degree parabola, power curve, exponential curve, Regression Analysis, linear regression , properties, angle b/w two lines, coefficient of determination, problems.	
<b>Sep-22</b>	Unit-III : Theory of Attributes, Definitions, Consistency of data, Independence of attributes, Yule's coefficient of association and colligation, problems.	

**AG & SG Siddhartha Degree College of Arts & Science,  
(Autonomous) Vuyyuru - 521 165.**

Krishna Dt., A.P. (An Autonomous College in the Jurisdiction of Krishana University)

Semesterwise Academic Plan & Fulfillment Record

NAME OF THE DEPARTMENT : Statistics

Academic Year :

2022-2023

III

Paper Title :

Statistical Inference

II MSCs

STAT31C

<b>Month</b>	<b>Planned (Unit No. &amp; Chapter Title)</b>	<b>Remarks</b>
<b>Oct-22</b>	Unit-I : Exact Sampling Distributions, Definitions.	
<b>Nov-22</b>	Unit-I : Exact Sampling Distributions, Student t-distribution, F-distribution, Chi-Square distribution. Unit-II : Theory of Estimation, Criteria of a good estimator, Neyman's factorization, MLE's.	
<b>Dec-22</b>	Unit-III : Testing of Hypothesis, Definitions, Neyman-pearson's lemma, binomial, poisson, Exponential, Normal distributions. Unit-IV : Large sample tests, z-test one,two samples, proportions, problems.	
<b>Jan-23</b>	Unit-IV : Small sample tests-I, t-test one,two,paired samples,F-test, problems.	
<b>Feb-23</b>	Unit-V : Small sample tests-II, Chi-square test for goodness of fit, Independence of attributes. Parametric tests, one and samples tests.	

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**Semesterwise Academic Plan & Fulfillment Record**

NAME OF THE DEPARTMENT : Statistics

Academic Year :

2022-2023

IV

Paper Title :

Sampling Techniques and Design of Experiments

II MSCs

STAT41B

<b>Month</b>	<b>Planned (Unit No. &amp; Chapter Title)</b>	<b>Remarks</b>
<b>Mar-23</b>	Unit-I : Introductory Concepts of Sampling, Basic Principles, Definitions. Simple Random sampling, Definitions, Procedure, Mean, Variance, Advantages and Disadvantages.	
<b>Apr-23</b>	Unit-II : Stratified Random sampling, Advantages and Disadvantages, Types of Allocation, Mean and Variance, Comparison b/w proportional and optimum with srswor.	
<b>May-23</b>	Unit-II : Systematic sampling, merits and demerits, Comparison of sys with strat and srswor. Unit-III : Analysis of Variance, One-way and Two- way classifications, Design of Experiments, Principles of Design of experiments, CRD, problems.	
<b>Jun-23</b>	Unit-IV : RBD, LSD, Advantages and Disadvantages , Missing plot in RBD and LSD. Efficiency RBD over CRD, LSD over RBD and CRD, problems.	

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Semesterwise Academic Plan & Fulfillment Record

NAME OF THE DEPARTMENT : Statistics

Academic Year :

2022-2023

IV

Paper Title :

Applied Statistics

II MSCs

STAT01

<b>Month</b>	<b>Planned (Unit No. &amp; Chapter Title)</b>	<b>Remarks</b>
<b>Mar-23</b>	Unit-I : Index Numbers, Basic problems, Construction of index numbers, Criteria of good index number, Cost of living, Uses and limitations, problems.	
<b>Apr-23</b>	Unit-II : Statistical Quality Control-I, Basics of SQC, Xbar and R charts, 3sigma limits, Interpretation, Uses, problems.	
<b>May-23</b>	Unit-III : Statistical Quality Control-II, Construction of P and C charts, Interpretation, Natural and Specification limits, ASP, AQL, LTPD, AOQL, ASN, OC Curves, problems.	
<b>Jun-23</b>	Unit-IV : Vital Statistics, Definition, Uses, Sources, Mortality and Fertility rates, Life tables, Reproduction rates, problems.	

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**Semesterwise Academic Plan & Fulfillment Record**

NAME OF THE DEPARTMENT : Statistics

Academic Year :  
2021-2022

2022-2023

I

Paper Title :

Descriptive Statistics and Theory of Probability

I MSCs

STAT11B

<b>Month</b>	<b>Planned (Unit No. &amp; Chapter Title)</b>	<b>Remarks</b>
<b>Oct-22</b>	Unit-I : Moments, central and non-central, Inter-relationships, Shippard's corrections, Skewness, karl pearson's, Bowley's formule, Kurtosis, problems.	
<b>Nov-22</b>	Unit-II : Probability-I, Definitions, Addition of probabilities two and n events, Boole's inequality, problems.	
<b>Dec-22</b>	Unit-III : Probability-II, Conditional probability, dependent and independence events, multiplication law of probability two and n events, Baye's theorem, problems.	
<b>Jan-23</b>	Unit-IV : Random Variables, Definitions, Types, Bivariate random variables, Types, Distribution function and properties, problems.	
<b>Feb-23</b>	Unit-V : Mathematical Expectations, Properties, Cauchy-Schwartz inequality, m.g.f, c.g.f, p.g.f, c.f, Chebyshev's inequality, wlln, problems.	



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Krishna Dt., A.P. (An Autonomous College in the Jurisdiction of Krishana University)

**Semesterwise Academic Plan & Fulfillment Record**

NAME OF THE DEPARTMENT : Statistics

Academic Year :  
2022-23

2022-2023

II

Paper Title :

Probability Distributions and Statistical Methods

I MSCs

STAT21C

<b>Month</b>	<b>Planned (Unit No. &amp; Chapter Title)</b>	<b>Remarks</b>
<b>Mar-23</b>	Unit-I : Theoretical Probability Discrete Distributions, Rectangular, Binomial, Poisson, Negative Binomial, Geometric, Hyper Geometric Distributions, problems.	
<b>Apr-23</b>	Unit-II : Theoretical Probability Continuous Distributions, Rectangular, Normal, Exponential, Gamma, Beta Distributions.	
<b>May-23</b>	Unit-IV : Correlation, Types, Karl pearson's, Rank correlation, Bi-variate frequency distribution. Multiple and Partial correlations, properties, multiple determination, problems.	
<b>Jun-23</b>	Unit-V : Curve fitting, fitting of straight line, second degree parabola, power curve, exponential curve, Regression Analysis, linear regression , properties, angle b/w two lines, coefficient of determination, problems.	

**A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYURU**  
**DEPARTMENT OF PHYSICS**  
**SEMESTER – I**  
**2022-2023**

**TEACHING PLAN**

Subject Code : **PHYT 11B**

Title: **Mechanics, waves & oscillations**

Month	Unit No.	Topic to be covered
OCT-2022	I	<p><b>1. Mechanics of Particles</b>            Review of Newton's Laws of Motion, Motion of variable mass system, Motion of a rocket, Multistage rocket, Concept of impact parameter, scattering cross-section, Rutherford scattering-</p> <p><b>2. Mechanics of Rigid bodies</b>            Rigid body, rotational kinematic relations, Equation of motion for a rotating body, Angular momentum and Moment of inertia tensor, Euler equations, Precession of a spinning top, Gyroscope, Precession of atom and nucleus in magnetic field, Precession of the equinoxes</p>
NOV - 2022	II	<p><b>3. Motion in a Central Force Field</b>            Central forces, definition and examples, characteristics of central forces, conservative nature of central forces, Equation of motion under a central force, Kepler's laws of planetary motion- Proofs, Kepler's third law from inverse-square law of Gravitation. Motion of satellites, Basic idea of Global Positioning System (GPS).</p>
DEC-2022	III	<p><b>Frames of reference and transformations</b>            Introduction to relativity, Frames of reference, Galilean transformations, absolute frames, Michelson-Morley experiment, Postulates of Special theory of relativity, Lorentz transformation, time dilation, length contraction, variation of mass with velocity, Einstein's mass-energy relation</p>
JAN-2023	IV	<p><b>5. Undamped, Damped and Forced oscillations:</b>            Simple harmonic oscillator and solution of the differential equation, Damped harmonic oscillator, Forced harmonic oscillator – Their differential equations and solutions, Resonance, Logarithmic decrement, Relaxation time and Quality factor.</p> <p><b>6. Coupled oscillations:</b>            Coupled oscillators-Introduction, Two coupled oscillators, N-coupled oscillators and wave equation.</p>
FEB-23	V	<p><b>7. Vibrating Strings:</b>            Transverse wave propagation along a stretched string, General solution of wave equation and its significance, Modes of vibration of stretched string clamped at ends, Overtones and Harmonics, Melde's strings.</p> <p><b>8. Ultrasonics:</b>            Ultrasonics, General Properties of ultrasonic waves, Production of ultrasonics by piezoelectric and magnetostriction methods, Detection of ultrasonics, Applications of ultrasonic waves, Ultrasonic interferometer.</p>

**SEMESTER – II**  
**TEACHING PLAN**

Subject Code : PHYT21C

Title: **WAVE OPTICS**

Month	Unit No.	Topic to be covered
MAR -'23	I	<p><b>1. Aberrations:</b> Introduction – monochromatic aberrations, spherical aberration, methods of minimizing spherical aberration, coma, astigmatism and curvature of field, distortion. Chromatic aberration-the achromatic doublet. Achromatism for two lenses ( i )in contact and (ii) separated by a distance.</p>
	II	<p><b>2. Interference : Division of wavefront:</b> Principle of superposition-coherence-conditions for interference of light..Fresnel's biprism-determination of wavelength of light. Determination of thickness of a transparent material using biprism – Determination of the thickness of a thin sheet of transparent material. Change of phase on reflection – Stoke's Law.</p>
APR-'23	III	<p><b>3. Division of Amplitude:</b> Oblique incidence of a plane wave on a thin film due to reflected and transmitted light (cosine law) –colors of thin films-Non reflecting films-interference by a plane parallel film illuminated by a point source-Interference by a film with two non-parallel reflecting surfaces (Wedge shaped film). Determination of diameter of wire- Newton's rings in reflected light- Determination of wavelength of monochromatic light. Michelson interferometer- Determination of wavelength of monochromatic light.</p>
MAY-'23	IV	<p><b>4. Diffraction:</b>Introduction,distinction between Fresnel and Fraunhofer diffraction, Fraunhofer diffraction –Diffraction due to single slit and circular aperture-Limit of resolution-Fraunhofer diffraction due to double slit-Fraunhofer diffraction pattern with N slits (diffraction grating).Resolving power of grating-Determination of wavelength of light in normal and oblique incidence methods using diffraction grating.Fresnel's half period zones-area of the half period zones-zone plate-comparison of zone plate with convex lens-difference between interference and diffraction.</p>
JUN-'23	V	<p><b>5. Polarisation :</b> Polarized light: methods of polarization polarization by reflection, refraction, double refraction, scattering of light-Brewster's law-Mauls law-Nicol prism polarizer and analyzer-Quarter wave plate, Half wave plate-optical activity, analysis of light by Laurent's half shade polarimeter-Babinet's compensator.</p> <p><b>6. Lasers and Holography:</b> Lasers: introduction,spontaneous emission, stimulated emission. Population Inversion, Laser principle-Einstein coefficients-Types of lasers-He-Ne laser, Ruby laser- Applications of lasers. Holography: Basic principle of holography-Gabor hologram and its limitations, Applications of holography</p>

## SEMESTER – III

2022-2023      TEACHING PLAN

Subject Code: **PHYT31A**

Title: **HEAT AND THERMODYNAMICS**

Month	Unit No.	Topic to be covered
NOV-2022	I	<b>1. Kinetic theory of gases:</b> Introduction –Deduction of Maxwell’s law of distribution of molecular speeds, Transport phenomena-Viscosity of gases-thermal conductivity-diffusion of gases.
DEC-2022	II	<b>2. Thermodynamics:</b> Introduction- Isothermal and adiabatic process-Reversible and irreversible processes-Carnot’s engine and its efficiency-Carnot’s theorem-Second law of thermodynamics. Kelvin’s and Clausius statements-Entropy, physical significance –Change in entropy in reversible and irreversible processes-Entropy and disorder-Entropy of Universe-Temperature-Entropy (T-S) diagram-Change of entropy of a perfect gas- change of entropy when ice changes into steam.
JAN-2023	III	<b>3. Thermodynamic potentials and Maxwell’s equations:</b> Thermodynamic potentials-Derivation of Maxwell’s thermodynamic relations-Clausius-Clayperon’s equation-Derivation for ratio of specific heats-Derivation for difference of two specific heats for perfect gas. Joule Kelvin effect-expression for Joule Kelvin coefficient for perfect.
FEB-2023	IV	<b>4. Low temperature Physics:</b> Introduction-Joule Kelvin effect-liquefaction of gas using porous plug experiment Joule expansion-Distinction between adiabatic and Joule Thomson expansion-Expression for Joule Thomson cooling-Liquefaction of helium, Kapitza’s method-Adiabatic demagnetization, Production of low temperatures -applications of substances at low-temperature-effects of chloro and fluoro carbons on ozone layer.
MAR-2023	V	<b>5. Quantum theory of radiation:</b> Blackbody-Ferry’s black body-distribution of energy in the spectrum of black body-Wein’s displacement law, Wein’s law, Rayleigh-Jean’s law-Quantum theory of radiation-Planck’s law-Measurement of radiation-Types of pyrometers –Angstrom pyroheliometer-determination of solar constant, Temperature of Sun.

## SEMESTER – IV

2022-2023      TEACHING PLAN

Subject Code : **PHYT41A**

Title : **Electricity, Magnetism and Electronics**

MAR-2023	I	<p><b>1.Electrostatics</b> Gauss's law Statement and its proof-Electric field intensity due to (1) Uniformly charged sphere and (2) an infinite conducting sheet of charge. Electric potential- Equipotential surface –potential due to i) a point charge ii) charged spherical shell .</p> <p><b>2.Dielectrics</b> Electric dipole moment and molecular polarizability- Electric displacement D, electric polarization P – relation between D, E, and P- Dielectric constant, susceptibility .</p>
APR - 2023	II	<p><b>3. Electric and magnetic field</b>      Biot – Savart's law and calculation of B due to long straight wire, a circular current loop and solenoid. Hall effect-determination of Hall coefficient and applications.</p> <p><b>4.Electromagnetic induction</b> Faraday's law – Lenz's law self and mutual inductance, coefficient of coupling, calculation of self inductance of a long solenoid, energy stored in magnetic field. Transformer- energy losses and efficiency.</p>
MAY-2023	III	<p><b>5.Alternating current and electro magnetic waves</b> Alternating current –Relation between current and voltage in LR and CR circuits, vector diagrams, LCR series and parallel resonant circuit , Q- factor, power in AC circuits.</p> <p><b>6.Maxwell's equations</b> Idea of displacement current- Maxwell's equations (integral and differential forms ) (no derivation) Maxwell's wave equation(with derivation), Transverse nature of electromagnetic wave. Poynting Vector (statement and proof) production of electromagnetic wave Hertz experiment.</p>
JUN-2023	IV	<p><b>7.Basic electronics:</b> PN junction diode Zener diode ,I-V characteristics, PNP and NPN Transistors, CB,CE and CC configuration Relation between <math>\alpha</math> <math>\beta</math> and <math>\Gamma</math> transistors (CE) characteristics, Transistor as an amplifier.</p>
JUN-23	V	<p><b>Digital electronics:</b> Number systems-conversion of binary to decimal system and vice versa. Binary addition and subtraction (1's and 2's complement methods) laws of Boolean algebra-De Morgan's laws- statement and proof basic logic gates, NAND and NOR as universal gates Half adder and FULL adder.</p>

## SEMESTER – IV

2022-2023

TEACHING PLAN

Subject Code: PHYT01

Title : MODERN PHYSICS

MAR-2023	I	<b>1. Atomic and molecular physics</b> Introduction – Drawbacks of Bohr’s atomic model – Sommerfeld’s elliptical orbits- relativistic correction (no derivation). Vector atom model and Stern & Gerlach experiment - quantum numbers associated with it. L- S and j-j coupling schemes. Zeeman Effect and its experimental study. Raman effect, stokes and Anti stokes lines . Quantum theory of Raman effect. Experimental arrangement – Applications of Raman effect.
APR - 2023	II	<b>2. Matter waves &amp; Uncertainty Principle</b> Matter waves, de Broglie’s hypothesis – wavelength of matter waves, Properties of matter waves – Davisson and Germer experiment, uses of electron diffraction-Phase velocity and Group velocity (definitions only)- relation between phase velocity and Group velocity–Heisenberg’s uncertainty principle for position and momentum (x and p) & energy and time (E and t). Experiment verification.
MAY-2023	III	<b>3.Quantum (wave) mechanics</b> Basic postulates of quantum mechanics – Schrodinger time independent and time dependent wave equation – derivations. Physical interpretation of wave function. Applications of Schrodinger wave equation to particle in one dimensional infinite box. Harmonic oscillator.
JUN-2023	IV	<b>4.General properties of Nuclei</b> Basic ideas of nucleus – size,mass,charge density(matter energy), binding energy,angular momentum, parity, magnetic moment, electric quadrupole moments.Liquid drop model and shell model (qualitative aspects only)- Magic numbers. <b>5. Radioactivity decay</b> Alpha decay : basis of $\alpha$ – decay processes. Range of $\alpha$ -particles , Geiger’’s Law,Geiger- Nuttal law. $\beta$ – decay, $\beta$ ray continuous and discrete spectrum, neutrino hypothesis.
JUN-23	V	<b>6.Crystal structure</b> Amorphous and crystalline materials, unit cell, Miller indices, reciprocal lattice, types of lattices, diffraction of X- rays by crystals, Bragg’s law, experimental techniques, Laue’s method and powder diffraction method. <b>7. Superconductivity:</b> Introduction – experimental facts, critical temperature – critical field – Meissner effect – isotope effect – Type I and Type II superconductors – BCS theory (elementary ideas only) – applications of superconductors.

## SEMESTER – V

### 2022-2023 TEACHING PLAN

Subject Code : SECPHY501C Title : APPLICATIONS OF Electricity

Dec-2022	I	<b>I INTRODUCTION TO PASSIVE ELEMENTS</b> (10 hrs.) Passive and Active elements- Examples, Resistor-Types of Resistors, Color coding - Applications of a Resistor as a heating element in heaters and as a fuse element. Capacitor-Types of Capacitors, Color coding, Energy stored in a capacitor, Applications of Capacitor in power supplies, motors(Fans) etc., Inductor-Types of Inductors, EMF induced in an Inductor, Applications of Inductor, Application of choke in a fan and in a radio tuning circuit, Series resonance circuit as a Radio tuning circuit
Jan - 2023	II	<b>Power Sources (Batteries)</b> (10 hrs.) Types of power sources-DC & AC sources, Different types of batteries, Rechargeable batteries –Lead acid batteries, Ni-MH batteries, Li-ion batteries- Li-PO batteries, Series, Parallel& Series-Parallel configuration of batteries, Constant Voltage source-Constant Current Source- Applications of Current sources & Voltage sources, SMPS used in computers .
Feb-2023	III	<b>Alternating Currents (10 hrs)</b> A.C Power source-Generator, Construction and its working principle, TransformersConstruction and its working principle, Types of Transformers-Step-down and Step-up Transformers, Relation between primary turns and secondary turns of the transformer with emf., Use of a Transformer in a regulated Power supplies, Single phase motor –working principle, Applications of motors(like water pump, fan etc.).
Mar-2023	IV	<b>Power Supplies (Skill Based)</b> (10 hrs.) Working of a DC regulated power supply, Construction of a 5 volts regulated power supply, Design of a step-down (ex: 220-12V) and step-up (ex: 120-240V) transformersSimple Design of FM Radio circuit using LCR series resonance (tuning) circuit, Checking the output voltage of a battery eliminator using a MultiMate.(Trouble shooting), Design of a simple 5 volts DC charger, Power supply for computers(SMPS)
MAR-2023	V	<b>Applications of Electromagnetic Induction</b> (10 hrs.) DC motor –Construction and operating principle, Calculation of power, voltage and current in a DC motor, Design of a simple Motor (for example Fan) with suitable turns of coil-DC generator-Construction, operating principle and EMF equation, Construction of a simple DC generator, Difference between DC and AC generators

## SEMESTER – V

2022-2023

TEACHING PLAN

Subject Code: SECPHY- 502C

Title: ELECTRONIC INSTRUMENTATION

Dec-2022	I	<b>. INTRODUCTION TO INSTRUMENTS</b> (10 hrs) Types of electronic Instruments- Analog instruments & Digital Instruments, DC Voltmeter and AC Voltmeter, Construction and working of an Analog Multimeter and Digital Multimeter (Block diagram approach), Sensitivity, $3\frac{1}{2}$ display and $4\frac{1}{2}$ display Digital multimeters, Basic ideas on Function generator
Jan - 2023	II	<b>OSCILLOSCOPE</b> (10 hrs) Cathode Ray Oscilloscope-Introduction, Block diagram of basic CRO, Cathode ray tube, Electron gun assembly, Screen for CRT, Time base operation, Vertical deflection system, Horizontal deflection system, Use of CRO for the measurement of voltage (DC and DC), frequency, phase difference, Different types of oscilloscopes and their uses, Digital storage Oscilloscope
Feb-2023	III	<b>TRANSDUCERS</b> (10 hrs) Classification of transducers, Selection of transducers, Resistive, capacitive & inductive transducers, Resistive and capacitive touch screen transducer used in mobiles, Displacement transducer-LVDT, Piezoelectric transducer, Photo transducer, Digital transducer, Fibre optic sensors
Mar-2023	IV	<b>DISPLAY INSTRUMENTS</b> (10 hrs) Introduction to Display devices, LED Displays, Seven Segment Displays, Construction and operation (Display of numbers), Types of SSDs (Common Anode & Common Cathode type), Limitations of SSDs, Liquid Crystal Displays, Principle and working of 2x16 display and 4x16 LCD modules, Applications of LCD modules.
MARCH- 23	V	<b>BIOMEDICAL INSTRUMENTS</b> (10 hrs) Basic operating principles and uses of (i) Clinical thermometer (ii) Stethoscope (iii) Sphygmomanometer (iv) ECG machine (v) Radiography (vi) Ophthalmoscope (vii) Ultrasound scanning (viii) Ventilator (ix) Pulse oxymeter (x) Glucometer, Basic ideas of CT scan and MRI scan



## SEMESTER – VI

### 2022-2023 TEACHING PLAN

Subject Code : SECPHY501C Title : APPLICATIONS OF Electricity

MAR-2023	I	<b>I INTRODUCTION TO PASSIVE ELEMENTS</b> (10 hrs.) Passive and Active elements- Examples, Resistor-Types of Resistors, Color coding - Applications of a Resistor as a heating element in heaters and as a fuse element. Capacitor-Types of Capacitors, Color coding, Energy stored in a capacitor, Applications of Capacitor in power supplies, motors(Fans) etc., Inductor-Types of Inductors, EMF induced in an Inductor, Applications of Inductor, Application of choke in a fan and in a radio tuning circuit, Series resonance circuit as a Radio tuning circuit
APR - 2023	II	<b>Power Sources (Batteries)</b> (10 hrs.) Types of power sources-DC & AC sources, Different types of batteries, Rechargeable batteries –Lead acid batteries, Ni-MH batteries, Li-ion batteries- Li-PO batteries, Series, Parallel& Series-Parallel configuration of batteries, Constant Voltage source-Constant Current Source-Applications of Current sources & Voltage sources, SMPS used in computers .
MAY-2023	III	<b>Alternating Currents (10 hrs)</b> A.C Power source-Generator, Construction and its working principle, TransformersConstruction and its working principle, Types of Transformers- Step-down and Step-up Transformers, Relation between primary turns and secondary turns of the transformer with emf., Use of a Transformer in a regulated Power supplies, Single phase motor –working principle, Applications of motors(like water pump, fan etc.).
MAY-2023	IV	<b>Power Supplies (Skill Based)</b> (10 hrs.) Working of a DC regulated power supply, Construction of a 5 volts regulated power supply, Design of a step-down (ex: 220-12V) and step-up (ex: 120-240V) transformersSimple Design of FM Radio circuit using LCR series resonance (tuning) circuit, Checking the output voltage of a battery eliminator using a MultiMate.(Trouble shooting), Design of a simple 5 volts DC charger, Power supply for computers(SMPS)
JUN-2023	V	<b>Applications of Electromagnetic Induction</b> (10 hrs.) DC motor –Construction and operating principle, Calculation of power, voltage and current in a DC motor, Design of a simple Motor (for example Fan) with suitable turns of coil-DC generator-Construction, operating principle and EMF equation, Construction of a simple DC generator, Difference between DC and AC generators

## SEMESTER – VI

2022-2023

TEACHING PLAN

Subject Code: SECPHY- 502C

Title : ELECTRONIC INSTRUMENTATION

MAR-2023	I	<b>INTRODUCTION TO INSTRUMENTS</b> (10 hrs) Types of electronic Instruments- Analog instruments & Digital Instruments, DC Voltmeter and AC Voltmeter, Construction and working of an Analog Multimeter and Digital Multimeter (Block diagram approach), Sensitivity, 3½ display and 4½ display Digital multimeters, Basic ideas on Function generator
APR - 2023	II	<b>OSCILLOSCOPE</b> (10 hrs) Cathode Ray Oscilloscope-Introduction, Block diagram of basic CRO, Cathode ray tube, Electron gun assembly, Screen for CRT, Time base operation, Vertical deflection system, Horizontal deflection system, Use of CRO for the measurement of voltage (DC and DC), frequency, phase difference, Different types of oscilloscopes and their uses, Digital storage Oscilloscope
MAY-2023	III	<b>TRANSDUCERS</b> (10 hrs) Classification of transducers, Selection of transducers, Resistive, capacitive & inductive transducers, Resistive and capacitive touch screen transducer used in mobiles, Displacement transducer-LVDT, Piezoelectric transducer, Photo transducer, Digital transducer, Fibre optic sensors
JUN-2023	IV	<b>DISPLAY INSTRUMENTS</b> (10 hrs) Introduction to Display devices, LED Displays, Seven Segment Displays, Construction and operation (Display of numbers), Types of SSDs (Common Anode & Common Cathode type), Limitations of SSDs, Liquid Crystal Displays, Principle and working of 2x16 display and 4x16 LCD modules, Applications of LCD modules.
JUN-23	V	<b>BIOMEDICAL INSTRUMENTS</b> (10 hrs) Basic operating principles and uses of (i) Clinical thermometer (ii) Stethoscope (iii) Sphygmomanometer (iv) ECG machine (v) Radiography (vi) Ophthalmoscope (vii) Ultrasound scanning (viii) Ventilator (ix) Pulse oxymeter (x) Glucometer, Basic ideas of CT scan and MRI scan

**A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**  
**DEPARTMENT OF Chemistry**  
**SEMESTER – I**  
**2022-23 CURRICULAR PLAN**

Subject Code: **CHE TIA** Title: Inorganic and Physical chemistry

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Oct-22	I	Chemistry of P- block elements
Nov-22	II	Chemistry of d -block elements, Chemistry of f-block elements, and Theories of bonding in metals
Dec-22	III	Solid state
Jan-23	IV	Gaseous and Liquid state
Feb-23	V	Sollutions ,Dilute sollutions

**SEMESTER – II**  
**2022-23 CURRICULAR PLAN**

Subject Code: **CHE 201C** Title: **Organic and General chemistry**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Mar-23	I	Alkanes and cyclo alkanes
Apr-23	II	Alkenes ands alkynes
May-23	III	Benzene and its reactivity
June-23	IV	Chemical bonding & Surface chemistry
July-23	V	Chemical bonding & Surface chemistry

**SEMESTER – III**  
**2022-23 CURRICULAR PLAN**

Subject Code: **CHET31A**

Title :Organic and spectroscopy

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Oct-22	I	Halogenated hydrocarbons and alcohols and phenols
Nov-22	II	Carbonyl compounds
Dec-22	III	Carboxylic acids
Jan-23	IV	Molecular spectroscopy-ESR and NMR spectroscopy
Feb-23	V	Applications of spectroscopy

**SEMESTER – IV**  
**2022-23 CURRICULAR PLAN**

Subject Code: **CHE- 401C**

Title :Inorganic,Organic and Physical chemistry

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Mar-23	I	Organo metallic compounds
Apr-23	II	Carbohydrates
May-23	III	Amino acids and proteins and heterocyclic compounds
June-23	IV	Nitrogen containing functional groups
July-23	V	Photo chemistry and Thermodynamics

## SEMESTER – IV

### 2022-23 CURRICULAR PLAN

Subject Code: **CHE- 402C**

Title :Inorganic and Physical chemistry

Month	Unit No.	Topic to be covered
Mar-23	I	Co-ordination chemistry
Apr-23	II	Inorganic reaction mechanisms and Bio-inorganic chemistry
May-23	III	Phase rule
June-23	IV	Electro chemistry
July-23	V	Chemical kinetics

## SEMESTER – V(501)

### 2022-23 CURRICULAR PLAN

Subject Code: CHE-501

Title :Analytical Methods in Chemistry-I

Month	Unit No.	Topic to be covered
Oct-22	I	Qualitative analysis-I
Nov-22	II	Qualitative analysis-2
Dec-22	III	Treatment of analytical data
Jan-23	IV	Separation techniques
Feb-23	V	Analysis of water

## SEMESTER – V(502)

### 2022-23 CURRICULAR PLAN

Subject Code: CHE-502

Title : Analytical Methods in Chemistry-2

Month	Unit No.	Topic to be covered
Oct-22	I	Chromatography
Nov-22	II	TLC and paper chromatography
Dec-22	III	Column chromatography
Jan-23	IV	Gas chromatography
Feb-23	V	HPLC chromatography

## SEMESTER – VI(601)

### 2022-23 CURRICULAR PLAN

Subject Code: CHE-601

Title :Analytical Methods in Chemistry-I

Month	Unit No.	Topic to be covered
Mar-23	I	Qualitative analysis-I
Apr-23	II	Qualitative analysis-2
May-23	III	Treatment of analytical data
June-23	IV	Separation techniques
July-23	V	Analysis of water

**SEMESTER – VI(602)**

**2022-23 CURRICULAR PLAN**

Subject Code: CHE-602

Title : Analytical Methods in Chemistry-2

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Mar-23	I	Chromatography
Apr-23	II	TLC and paper chromatography
May-23	III	Column chromatography
June-23	IV	Gas chromatography
July-23	V	HPLC chromatography

**A.G & S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**2022-2023**  
**SEMESTER – I**  
**CURRICULAR PLAN**

**Title:** Problem solving in C

**Subject Code:** CSCT11B

**SECTIONS:** B.Sc. (MPCS / MCCS/ MSCS)

Month	Unit No.	Topic to be covered
Nov2022	I	<p><b>General Fundamentals:</b> Introduction to computers: Block diagram of a computer, characteristics and limitations of computers, applications of computers, types of computers, computer generations.</p> <p><b>Introduction to Algorithms and Programming Languages:</b> Algorithm – Key features of Algorithms, Flow Charts, Programming Languages – Generations of Programming Languages – Structured Programming Language- Design and Implementation of Correct, Efficient and Maintainable Programs</p>
Dec- 2022	II  III	<p><b>Introduction to C:</b> Introduction – Structure of C Program – Writing the first C Program –File used in C Program – Compiling and Executing C Programs – Using Comments – Keywords – Identifiers – Basic Data Types in C – Variables – Constants – I/O Statements in C- Operators in C- Programming Examples.</p> <p><b>Decision Control and Looping Statements:</b> Introduction to Decision Control Statements– Conditional BranchingStatements – Iterative Statements – Nested Loops – Break and Continue Statement – goto Statement.</p>
Jan-2023	III  IV	<p><b>Introduction – Declaration of Arrays</b> – Accessing elements of the Array – Storing Values in Array– Operations on Arrays one dimensional, two dimensional and multi-dimensional arrays, character handling and strings.</p> <p><b>Functions:</b>Introduction – using functions – Function declaration/ prototype – Function definition – function call – return statement –Passing parameters – Scope of variables – Storage Classes – Recursive functions.<b>Structure, Union, and Enumerated Data Types:</b> Introduction – Nested Structures – Arrays of Structures – Structuresand Functions– Union – Arrays of Unions Variables – Unions inside Structures – Enumerated Data Types.</p>



Feb-2023	V	<p><b>Pointers:</b> Understanding Computer Memory – Introduction to Pointers – declaring Pointer Variables – PointerExpressions and Pointer Arithmetic – Null Pointers - Passing Arguments to Functions using Pointer – Pointer and Arrays – Memory Allocation in C Programs – Memory Usage – Dynamic Memory Allocation – Drawbacks of Pointers</p> <p><b>Files:</b> Introduction to Files – Using Files in C – Reading Data from Files – Writing Data to Files – Detecting the End-of-file – Error Handling during File Operations – Accepting Command Line Arguments.</p>
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**SEMESTER – I**  
**CURRICULAR PLAN**

**Title:** INFORMATION TECHNOLOGY

**Subject Code:** CSBT11A

**Section:** B.Com (CA)

Month	Unit No.	Topic to be covered
Nov2022	I	<p><b>INTRODUCTION:</b> Introduction to the Computer Generation of computers, over view of computer System, input &amp; Output devices.</p> <p>Hardware: Basic components of a computer system- Control unit– ALU- Input/output functions.Memory – RAM – ROM – EPROM - PROM and Other types of memory</p>
Dec- 2022	II III	<p><b>OPERATING SYSTEM(OS):</b> Meaning Definition &amp; functions , DOS-commands, windows start button, control panel</p> <p><b>SOFTWARE:</b> System software ,Application software, Mobile devise operating system and notebook operating systems Application software Types of personal application software Procedural language, non-procedural language, natural programming language. Hypertext mark-up language, modelling language, object-oriented programming language</p>
Jan-2023	IV	<p><b>DATA COMMUNICATION:</b> Telecommunication and Networks Communication media&amp; channel cable mediaBroad cast media channels twisted pair Coaxial cable, fibers optical cable, micro wave, satellite, radio, cellular radio, infrared global positioning system. Introduction, Analog and Digital signals, modulation need of modulations, modems.Telecommunication System communication processors: Front –end-processor. LAN, WAN, MAN ,PAN, VPN Internet, intranet Extranets The evolution of the internet, service provided by the internet, World Wide Web.</p>
Feb-2023	V	<p><b>NEW TECHNOLOGIES</b> New technologies in Information Technology: Introduction to hyper media, artificial intelligence and business intelligence,knowledge discovery in database (KDD) Data warehouse and data marts. Data mining and OLAP.</p>

**SEMESTER – I**  
**CURRICULAR PLAN**

**Title:** COMPUTER APPLICATIONS

**Subject Code:** CCSE101

**SECTIONS:** B.Com (E-Commerce-Computes)

Month	Unit No.	Topic to be covered
Nov2022	I	<b>MS-WORD:</b> Features of MS-Word – MS-Word Window Components – Creating, Editing, Formatting and Printing of Documents – Headers and Footers – Insert/Draw Tables, Table Auto format – Page Borders and Shading Inserting Symbols, Shapes, Word Art, Page Numbers, Equations – Spelling and Grammar – Thesaurus –Mail Merge
Dec- 2022	II  III	<b>MS-POWER POINT:</b> Features of PowerPoint – Creating a Blank Presentation - Creating a Presentation using a Template -Inserting and Deleting Slides in a Presentation – Adding Clip Art/Pictures - Inserting Other Objects, Audio, Video - Resizing and Scaling of an Object – Slide Transition – Custom Animation <b>MS-Excel :</b> Overview of Excel features – Creating a new worksheet, Selecting cells, Entering and editing Text, Numbers, Formulae, Referencing cells – Inserting Rows/Columns – Changing column widths and row heights, auto format, changing font sizes, colors, shading and attributes – Data Sorting and Filters – Functions – Functions requiring Addis, Functions by category Creating different types of Charts
Jan-2023	IV	<b>MS Access:</b> Creating a Simple Database and Tables: Features of Ms-Access, Creating a Database, Parts of Access.Tables: table creation using design view, table wizard, data sheet view, import table, link table. Forms: The Form Wizard, design view, columnar, tabular, data sheet, chart wizard.
Feb-2023	V	<b>Finding, Sorting and Displaying Data:</b> Queries and Dynasts, Creating and using select queries, Returning to the Query Design, Multi-level sorts,Finding incomplete matches, showing All records after a Query, saving queries - Crosstab Queries. Printing Reports: Form and Database Printing.

**SEMESTER – II**  
**CURRICULAR PLAN**

**Title: Data Structures**

**Subject Code: CSCT21B**

**SECTIONS: B.Sc. (MPCS / MCCS/ MSCS)**

Month	Unit No.	Topic to be covered
June -'22	I	<p><b>Introduction to Data Structures:</b> Introduction to the Theory of Data Structures, Data Representation, Abstract Data Types, Data Types, Primitive Data Types, Data Structure and Structured Type, Atomic Type, Difference between Abstract Data Types, Data Types, and Data Structures, Refinement Stages.</p> <p><b>Principles of Programming and Analysis of Algorithms:</b> Software Engineering, Program Design, Algorithms, Different Approaches to Designing an Algorithm, Complexity, Big 'O' Notation, Algorithm Analysis, Recursion.</p>
July-'22	II  III	<p><b>Linked Lists:</b> Introduction to Lists and Linked Lists, Basic Linked List Operations, Doubly Linked List, Circular Linked List, Atomic Linked List, Linked List in Arrays, Linked List versus Arrays</p> <p><b>Stacks:</b> Introduction to Stacks, Stack as an Abstract Data Type, Representation of Stacks through Arrays, Representation of Stacks through Linked Lists, Applications of Stacks, Stacks and Recursion</p> <p><b>Queues:</b> Introduction, Queue as an Abstract data Type, Representation of Queues, Circular Queues, Double Ended Queues-De-ques, Priority Queues, Application of Queues</p>
Aug-'22	IV	<p><b>Binary Trees:</b> Introduction to Non- Linear Data Structures, Introduction Binary Trees, Types of Trees, Basic Definition of Binary Trees, Properties of Binary Trees, Representation of Binary Trees, Operations on a Binary Search Tree, Binary Tree Traversal, Counting Number of nodes in Binary Trees, Applications of Binary Tree</p>
Sep-'22	V	<p><b>Searching and sorting:</b> Sorting – An Introduction, Bubble Sort, Insertion Sort, Merge Sort, searching – An Introduction, Linear or Sequential Search, Binary Search, Indexed Sequential Search</p> <p><b>Graphs:</b> Introduction to Graphs, Terms Associated with Graphs, Sequential Representation of Graphs, Linked Representation of Graphs, Traversal of Graphs, Spanning Trees, Shortest Path, Application of Graphs.</p>

**SEMESTER – II  
CURRICULAR PLAN**

**Title:** E–COMMERCE & WEB DESIGNING

**Subject Code:** CABT21A

**Section:** B.Com (CA)

Month	Unit No.	Topic to be covered
June -'22	I	<b>Introduction E-Commerce:</b> Definition of E Commerce and its advantages & disadvantages, Electronic Data Interchange (EDI) ,E-Commerce transactional issues and challenges Difference between Commerce and E-Commerce <b>Business Models for Ecommerce</b> B2C -Business to consumer.B2B – Business to business,C2B – Consumer to business. C2C – Consumer to consumer
July-'22	II III	<b>E-Marketing &amp;E – CRM&amp; Electronic Payment Systems</b> <b>Online Marketing:</b> Traditional Vs. E-Marketing Online Marketing ,E-Advertising, Internet marketing <b>E – CRM:</b> Definition of CRM and E-CRM and its Applications, E- CRM Architectural components, Definition & characteristics of E- SCM, Benefits and goals of E – SCM,E-Logistics of UPS <b>Electronic Payment Systems:</b> Types of EPS, Traditional payment system and modern payment system, Steps for electronic payment, Payment security
Aug-'22	IV	Introduction to Web Designing HTML Define HTML, Structure of HTML, Basic HTML tags Formatting HTML tags, Lists Ordered List, Unordered List, Links, Link tag, Image tag, Marquee tag Tables Table Creation, Attributes of Table ,forms & Frames ,Forms creation, Form tag, Input fields of form, Frame Creation, Frameset tag, Frame tag
Sep-'22	V	<b>Introduction to WIX Editor</b> Getting Started with Wix ,Adding an Image to Your Page Background ,Gallery and Button ,Video

**SEMESTER – II**

**CURRICULAR PLAN**

**Title:** Programming in 'C'

**Subject Code:** ECCSCT21

**Section:** B.Com(E-Com-Computers)

Month	Unit No.	Topic to be covered
		General Fundamentals & Programming Languages General Fundamentals: Introduction to computers: Block diagram of a computer, characteristics and limitations of computers, applications of computers, types of computers, computer generations.

June -'22	I	<p>Introduction to Algorithms and Programming Languages: Algorithm – Key features of Algorithms, Flow Charts, Programming Languages – Generations of Programming Languages – Structured Programming Language- Design and Implementation of Correct, Efficient and Maintainable Programs.</p>
July-'22	II III	<p><b>Introduction To C &amp; Decision Making control Statements</b>  Introduction to C: Introduction – Structure of C Program – Writing the first C Program – File used in C Program – Compiling and Executing C Programs – Using Comment , Keywords – Identifiers – Basic Data Types in C – Variables – Constants – I/O Statements in C-Operators in C- Programming Examples.  Decision Control and Looping Statements: Introduction to Decision Control Statements– Conditional Branching Statements – Iterative Statements – Nested Loops – Break and Continue Statement – Goto Statement.</p> <p><b>Arrays</b>  Introduction – Declaration of Arrays – Accessing elements of the Array – Storing Values in Array– Operations on Arrays – one dimensional, two dimensional and multi dimensional arrays, character handling and strings.</p>
Aug-'22	IV	<p><b>Functions &amp; Structures</b>  <b>Functions:</b> Introduction – using functions – Function declaration/ prototype – Function definition – function call – return statement – Passing parameters – Scope of variables – Storage Classes – Recursive functions.  <b>Structure, Union, and Enumerated Data Types:</b> Introduction – Nested Structures – Arrays of Structures – Structures and Functions– Union – Arrays of Unions Variables – Unions inside Structures – Enumerated Data Types.</p>
Sep-'22	V	<p><b>Pointes &amp; Files</b>  Pointers: Understanding Computer Memory – Introduction to Pointers – declaring Pointer Variables – Pointer Expressions and Pointer Arithmetic – Null Pointers – Memory Allocation in C Programs – Memory Usage – Dynamic Memory Allocation – Drawbacks of Pointers  Files: Introduction to Files – Using Files in C – Reading Data from Files – Writing Data to Files – Detecting the End-of-file – Error Handling during File Operations – Accepting Command Line Arguments.</p>

**DEPARTMENT OF COMPUTER SCIENCE**

**2022-2023**

**SEMESTER – III**

**CURRICULAR PLAN**

**Title:** DATABASE MANAGEMENT SYSTEMS      **Subject Code:** CSCT37

**SECTIONS:** B.Sc. (MPCS / MCCS/ MSCS)

Month	Unit No.	Topic to be covered
Nov 2022	I	<b>Database Concepts-A Relational approach:</b> Database - Relationships - DBMS - Relational data model - Integrity rules - Theoretical relational languages. <b>Database Design:</b> Data mode -Dependency - Database design - Normal forms -Dependency diagrams – Demoralization
Dec- 2022	II III	<b>Structured Query Language (SQL):</b> Introduction – DDL - Naming rules and conventions - D a t a types-Constraints- Creating a table- Displaying t able information - Altering an existing table – Dropping, renaming, and truncating table - Table types <b>Working with tables:</b> DML - Adding a new Row/Record - Customized prompts - Updating and deleting an existing rows/records - Retrieving data from table - Arithmetic operations - Restricting data with WHERE clause - Sorting - Substitutionvariables - DEFINE command - CASE structure. <b>Functions and Grouping:</b> Built-infunctions - Grouping data. <b>Joins and Views:</b> Join - join types- <b>Views:</b> Views - Creating a view - Removing a view - Altering a view.
Jan-2023	IV	<b>PL/SQL:</b> Fundamentals - Block structure - comments - Data types – Other data types - Variable declaration - Assignment operation - Bind variables - Substitution variables - Printing. <b>Control Structures and Embedded SQL:</b> Control structures - Nested blocks - SQL in PL/SQL - Data manipulation - Transaction control statements
Feb 23	V	<b>PL/SQL Cursors and Exceptions:</b> Cursors - Implicit & explicit cursors and attributes - cursor FOR loops - SELECT...FOR UPDATE - WHERE CURRENTOF Clause - cursor with parameters - Cursor variables - Exceptions - Types of exceptions - Records - Tables -Procedures - <u>Functions</u> – Triggers

**SEMESTER – III**  
**CURRICULAR PLAN**

**Title:** PROGRAMMING WITH C & C++ **Subject Code:** CABT31A

**SECTIONS:** B.Com (CA)

Month	Unit No.	Topic to be covered
Nov 2022	I	<p><b>INTRODUCTION TO C LANGUAGE, VARIABLES, DATA TYPES</b> Introduction to Programming languages and Generations of Programming languages, Structure of C Program , Writing the first C Program, Files used in C Program, Compiling and Executing C- Programs, Using Comments, Keywords, Identifiers, Basic Data Types in C, Variables- Numeric, Character, Declaring, Initializing, Constants- Integer, Float, Character, String Declaring constants, I/O Statements in C- Formatting I/O, Print scanf ().</p>
Dec- 2022	II  III	<p><b>Operators:</b> Operator and its types in C - Arithmetic, Relational, Equality, Logical, Unary, Conditional, Bitwise, Assignment, Comma, Size of.</p> <p><b>WORKING WITH CONTROL STATEMENTS, LOOPS:</b> Introduction to Decision Control Statements , Conditional Branching Statements – If, If-Else, If-Else-if, Switch Case, Iterative or Looping Statements – While, Do-While, For , Break and Continue Statement , Go to Statement</p>
Jan-2023	IV	<p><b>STRINGS:</b> Introduction to strings and string handling functions <b>Structures &amp; Unions:</b> Introduction to structures, Structure Declaration, Typedef, Initialization, accessing the members of a structure, Nested structures, Arrays of structures, Unions – Declaring, Accessing and Initialization, Differences between Structures and Unions..</p>
Feb 23	V	<p><b>OBJECT ORIENTED CONCEPTS USING C++</b> Introduction to Object Oriented Programming, Object Oriented Concepts, Class-Object-Inheritance- Polymorphism- Encapsulation-Abstraction, Structure of C++ program, Differences between C &amp; CPP, Input and output statements in CPP.</p> <p><b>Operators &amp; Data types:</b> Operators in CPP, Data types in CPP, OperatorOverloading</p>

**SEMESTER – III**  
**CURRICULAR PLAN**

**Title: Problem solving in C**

**Subject Code: CSCT11B**

**SECTIONS:** B.Com (E-Commerce- Computers)

Month	Unit No.	Topic to be covered
Nov 2022	I	<b>General Fundamentals:</b> Introduction to computers: Block diagram of a computer, characteristics and limitations of computers, applications of computers, types of computers, computer generations. <b>Introduction to Algorithms and Programming Languages:</b> Algorithm – Key features of Algorithms, Flow Charts, Programming Languages – Generations of Programming Languages – Structured Programming Language- Design and Implementation of Correct, Efficient and Maintainable Programs.
Dec- 2022	II III	<b>Introduction to C:</b> Introduction – Structure of C Program – Writing the first C Program –File used in C Program –Compiling and Executing C Programs – Using, Comments, Keywords – Identifiers – Basic Data Types in C – Variables – Constants – I/O Statements in C- Operators in C-Programming Examples. <b>Decision Control and Looping Statements:</b> Introduction to Decision Control Statements– Conditional BranchingStatements – Iterative Statements – Nested Loops – Break and Continue Statement – goto Statement. <b>Arrays:</b> Introduction – Declaration of Arrays – Accessing elements of the Array – Storing Values in Array– Operations on Arrays – one dimensional, two dimensional and multi-dimensional arrays, character handling and strings.
Jan-2023	IV	<b>Structures &amp; Unions:</b> Introduction to structures, Structure Declaration, Typedef, Initialization, accessing the members of a structure, Nested structures, Arrays of structures, Unions – Declaring, Accessing and Initialization, Differences between Structures and Unions..
Feb 23	V	<b>Pointers:</b> Understanding Computer Memory – Introduction to Pointers – declaring Pointer Variables – Pointer Expressions and Pointer Arithmetic – Null Pointers - Passing Arguments to Functions using Pointer – Pointer and Arrays – Memory Allocation in C Programs – Memory Usage – Dynamic Memory Allocation – Drawbacks of Pointers <b>Files:</b> Introduction to Files – Using Files in C – Reading Data from Files – Writing Data to Files – Detecting the End-of-file – Error Handling during File Operations – Accepting Command Line Arguments.



**SEMESTER – IV**  
**DEPARTEMENT OF COMPUTER SCIENCE**  
**CURRICULAR PLAN**

**Title:** Object Oriented Programming Using JAVA

**Subject Code :** CSCT01

**Sections:** B. Sc. (MPCS.MCCS,MSCS)

Month	Unit No.	Topic to be covered
Mar-2022	I	<p><b>Fundamentals Of Object – Oriented Programming:</b> Introduction, Object Oriented paradigm, Basic Concepts of OOP, Benefits of OOP, Applications of OOP, Java features</p> <p><b>Overview Of Java Language:</b> Introduction, Simple Java program structure, Java tokens, Java Statements, Implementing a Java Program, Java Virtual Machine, Command line arguments</p> <p><b>Constants, Variables &amp; Data types:</b> Introduction, Constants, Variables, Data Types, Declaration of Variables, Giving Value to Variables, Scope of variables, Symbolic Constants, Type casting, Getting Value of Variables, Standard Default values</p> <p><b>Operators &amp; Expressions</b></p>
Apr-2022	II	<p><b>Decision Making &amp; Branching:</b> Introduction, Decision making with if statement, Simple if statement, If - Else statement, Nesting of if- else statements, The else if ladder, The switch statement, The conditional operator.</p> <p><b>Looping:</b> Introduction, The While statement, The do-while statement, The for statement, Jumps in loops.</p> <p><b>Classes, Objects &amp; Methods:</b> Introduction, Defining a class, Adding variables, Adding methods, Creating objects, Accessing class members, Constructors, Method overloading, Static members, Nesting of methods.</p>
May'22	III	<p><b>Inheritance:</b> Extending a class, Overloading methods, Final variables and methods, Final classes, Abstract methods and classes.</p> <p><b>Arrays, Strings:</b> Arrays, One-dimensional arrays, Creating an array, Two – dimensional arrays, Strings, Wrapper classes.</p> <p><b>Interfaces:</b> MULTIPLE INHERITANCE: Introduction, Defining interfaces, Extending interfaces, Implementing interfaces, Assessing interface variables.</p>
June-'22	IV	<p><b>Multithreaded Programming:</b> Introduction, Creating Threads, Extending the Threads, Stopping and Blocking a Thread, Lifecycle of a Thread, Using Thread Methods, Thread Exceptions, Thread Priority, Synchronization, Implementing the 'Runnable' Interface.</p> <p><b>Managing Errors And Exceptions:</b> Types of errors, Compile-time errors, Run-time errors, Exceptions, Exception handling, Multiple Catch Statements, Using finally statement.</p>

		<b>Packages:</b> Introduction, Java API Packages, Creating Packages, Accessing a Package, Using a Package.
July 22	V	<b>Applet Programming:</b> Local and remote applets, Applets and Applications, Building Applet code, Applet Life cycle: Initialization state, Running state, Idle or stopped state, Dead state, Display state. <b>Managing Input /Output Files In Java:</b> Introduction, Concept of Streams, Stream classes, Byte Stream Classes, Character Stream classes: Reader stream classes, Writer Stream classes, Reading and writing files. <b>Java Database Connectivity:</b> JDBC introduction, Stages in JDBC Program, Working with Oracle Database: Inserting, Deleting and Updating records

**SEMESTER – IV  
CURRICULAR PLAN**

**Title:** Operating systems

**Subject Code :** CSCT41C

**Sections:** B. Sc. (MPCS, MCCS, MSCS)

Month	Unit No.	Topic to be covered
Mar-2022	I	<b>Operating System:</b> Introduction, Operating Systems Objectives and functions, Computer System Architecture, OS Structure, OS Operations. Evolution of Operating Systems , Types of operating system - Simple, Batch, Multi programmed , Time shared , Parallel, Distributed Systems, Real-Time Systems, Operating System services.
Apr-2022	II	<b>Process and CPU Scheduling</b> – Process concepts , The Process, Process State, Process Control Block, Process communication, Threads. Process Scheduling - Scheduling Queues, Schedulers, Context Switch, Preemptive Scheduling, Dispatcher, , Scheduling Criteria, Scheduling algorithms, Case studies: Linux, Windows. Process Synchronization - The Critical section Problem, Synchronization Hardware, Semaphores, Classic Problems of Synchronization, Monitors.
May'22	III	<b>Memory Management and Virtual Memory</b> – Logical & physical Address Space, Swapping, Contiguous Allocation , Paging-Structure of Page Table, Segmentation, Segmentation with Paging, Virtual Memory, Demand Paging, Performance of Demanding Paging, Page Replacement , Page Replacement Algorithms, Allocation of Frames.
June-'22	IV	<b>File System Interface</b> – The Concept of a File , Access methods , Directory Structure, ,File System Mounting , File Sharing, Protection, File System Structure, Mass Storage Structure - Overview of Mass Storage Structure , Disk Structure, Disk Attachment, Disk Scheduling.

July 22	V	Deadlocks – System Model, Deadlock Characterization, Methods for Handling Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection and Recovery from Deadlock.
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**SEMESTER – IV  
CURRICULAR PLAN**

**Title:** Database Management Systems

**Subject Code :** CABT41A

**Section:** B.Com (CA)

Month	Unit No.	Topic to be covered
Mar-2022	I	Databases and Database Users : Introduction - Data and Information, Characteristics of the Database Approach, Self-Describing Nature of the Database System, Insulation between Programs and Data, Data Abstraction, Support of Multiple Views of the data, Sharing of Data and multiuser Transaction Processing, Evolution of Database System
Apr-2022	II	Traditional File Processing Systems - Disadvantages of Traditional File Processing Systems, Advantages of the Database Approach, Database system Concepts and Architecture - Data Models, Schemas and Instances, Categories of Data Models, Schemas, Instances and Database State, Three-Schema architecture for database development, Data Independence
May'22	III	Entity Relationship Model – Introduction, Entity types, Entity sets, Attributes and Keys, Entities and Attributes, Entity Types, Entity Sets, Keys and Value Sets, Relationships, Relationship types, Roles, and Structural Constraints – Relational types, Sets and Instances, Relationship degree, Role names, recursive relationships, constraints on relationship types, Attributes of relationship types. Weak entity types, E R diagrams, Naming conventions, design issues - Summary of Notation for ER Diagrams, Proper Naming of Schema Constructs.
June-'22	IV	Enhanced Entity-Relationship - Subclasses, super classes, and inheritance, Specialization and Generalization, Constraints and characteristics of Specialization and Generalization, Data Abstraction and knowledge representation concepts - Classification and Instantiation, Identification, Aggregation and Association. The Relational Data Model, Relational Constraints - Introduction, Relational Model Concepts, Domains, Attributes, Tuples and Relations , Relational Model Notation, Relational Constraints and Relational Database Schemas, Entity Integrity, Referential , Integrity and Foreign Keys.

July 22	V	SQL (STRUCTURED QUERY LANGUAGE) Introduction, Data Definition, Constraints and Schema changes in SQL - Schema AND Catalog Concepts in SQL, The CREATE TABLE Command and SQL Data Types and Constraints, The DROP SCHEMA and DROP TABLE Command, The ALTER TABLE Command, Basic Queries in SQL - The SELECT-FROM-WHERE Structure of SQL Queries, Dealing with Ambiguous Attribute Names and Naming (Aliasing), Unspecified WHERE-Clause and Use of Asterisk (*), Tables as sets in SQL, Substring Comparisons, Arithmetic Operators, and Ordering. Aggregate Functions and Grouping 5.5, Insert, Delete, and Update Statements in SQL - The INSERT Command, The DELETE Command, The Update Command.
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**SEMESTER – IV  
CURRICULAR PLAN**

**Title:** OBJECT ORIENTED PROGRAMMING USING JAVA      **Subject Code :** CCSCT42

**Section:** B.Com (CA)

Month	Unit No.	Topic to be covered
Mar-2022	I	<b>Fundamentals of Object – Oriented Programming:</b> Introduction, Object Oriented paradigm, Basic Concepts of OOP, Benefits of OOP, Applications of OOP, Java features:
Apr-2022	II	<b>Overview of Java Language:</b> Introduction, Simple Java program structure, Java tokens, Java Statements, Implementing a Java Program, Java Virtual Machine, Command line arguments. <b>Constants, Variables &amp; Data Types:</b> Introduction, Constants, Variables, Data Types, Declaration of Variables, Giving Value to Variables, Scope of variables, Type casting, Getting Value of Variables, <b>Operators.</b>
May'22	III	<b>Decision Making &amp; Branching:</b> Introduction, Decision making with if statement, Simple if statement, if-Else statement, Nesting of if-else statements, the else if ladder, the switch statement, the conditional operator. <b>Looping:</b> Introduction, while statement, do-while statement, for statement, Jumps in loops.
June-'22	IV	<b>Classes, Objects &amp; Methods:</b> Introduction, defining a class, adding variables, adding methods, creating objects, Accessing class members, Constructors, Method overloading, Method Overriding, Static members, Nesting of methods;
July 22	V	<b>Inheritance:</b> Extending a Class, Overriding Methods, Final Variables and Methods, Final Classes, Abstract Methods and Classes; <b>Arrays, Strings And Vectors:</b> Arrays, One-dimensional arrays, Creating an array, Two – dimensional arrays, Strings, Vectors, Wrapper classes; <b>Interfaces: Multiple Inheritance:</b> Introduction, Defining interfaces, Extending interfaces, Implementing interfaces, Assessing interface variables;

**SEMESTER – IV  
CURRICULAR PLAN**

**Title:** OBJECT ORIENTED PROGRAMMING USING JAVA **Subject Code :** ECCSCT41

**Section:** : B.Com (E-Commerce- Computers)

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Mar-2022	I	<b>Fundamentals of Object – Oriented Programming:</b> Introduction, Object Oriented paradigm, Basic Concepts of OOP, Benefits of OOP, Applications of OOP, Java features:
Apr-2022	II	<b>Overview of Java Language:</b> Introduction, Simple Java program structure, Java tokens, Java Statements, Implementing a Java Program, Java Virtual Machine, Command line arguments. <b>Constants, Variables &amp; Data Types:</b> Introduction, Constants, Variables, Data Types, Declaration of Variables, Giving Value to Variables, Scope of variables, Type casting, Getting Value of Variables, <b>Operators.</b>
May'22	III	<b>Decision Making &amp; Branching:</b> Introduction, Decision making with if statement, Simple if statement, if-Else statement, Nesting of if-else statements, the else if ladder, the switch statement, the conditional operator. <b>Looping:</b> Introduction, while statement, do-while statement, for statement, Jumps in loops.
June-'22	IV	<b>Classes, Objects &amp; Methods:</b> Introduction, defining a class, adding variables, adding methods, creating objects, Accessing class members, Constructors, Method overloading, Method Overriding, Static members, Nesting of methods;
July 22	V	<b>Inheritance:</b> Extending a Class, Overriding Methods, Final Variables and Methods, Final Classes, Abstract Methods and Classes; <b>Arrays, Strings And Vectors:</b> Arrays, One-dimensional arrays, Creating an array, Two – dimensional arrays, Strings, Vectors, Wrapper classes; <b>Interfaces: Multiple Inheritance:</b> Introduction, Defining interfaces, Extending interfaces, Implementing interfaces, Assessing interface variables;

**SEMESTER – IV  
CURRICULAR PLAN**

**Title: DATA BASE MANAGEMENT SYSTEMS**

**Subject Code: ECCSCT42**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Mar-2022	I	<b>Database Systems Introduction</b> <i>Database Systems:</i> Introducing the database and DBMS, Why the database is important, <i>Historical Roots:</i> Files and File Systems, Problems with File System, Data Management, Database Systems. <i>Data Models:</i> The importance of Data models, Data Model Basic Building Blocks, The evaluation of Data Models.
Apr-2022	II	<b>Relational Database &amp; Data Modelling</b> <i>The Relational Database Model:</i> A logical view of Data, Keys, Integrity Rules, Relational Set Operators, Indexes, Codd's relational database rules. <i>Entity Relationship Model:</i> The ER Model <i>Advanced Data Modelling:</i> The Extended Entity Relationship Model, Entity clustering.
May'22	III	<b>Normalization and Database Design</b> <i>Normalization of database tables:</i> Database Tables and Normalization, The need for Normalization, The Normalization Process, High level Normal Forms, Normalization and database design, de normalization
June-'22	IV	<b>Structured Query Language</b> <i>Introduction to SQL:</i> Data Definition Commands, Data Manipulation Commands, Select queries, Advanced Data Definition Commands, Advanced Select queries, Virtual Tables, SQL Join Operators,
July 22	V	<b>Procedural SQL</b> <i>Introduction to PL/SQL :</i> Triggers, Stored Procedures, PL/ SQL Stored Functions

**DEPARTMENT OF COMPUTER SCIENCE**

**SEMESTER – V**

**CURRICULAR PLAN**

**Title:** WEB INTERFACE DESIGNING TECHNOLOGIES      **Subject Code:** SECCSCT01

**SECTIONS:** BSc (MPCS, MCCS)

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Nov 2023	I	<b>Web Designing, HTML</b> <b>Web Designing:</b> Introduction To Web Designing, Difference Between WebApplications And Desktop Applications. <b>HTML:</b> Introduction To HTML, Introduction To HTML, Headings, Paragraphs Styles & Colors, HTML Formatting, Quotations, Comments, Hyperlinks, Lists, Using colors and images, Tables, Multimedia Objects - Video, Audio, Plugins, You Tube, Frames, Forms
Dec-2023	II	<b>CSS, HTML API'S</b> <b>CSS:</b> Introduction, Using Styles, Simple Examples, Defining Your Own Styles, Properties and Values in Styles, Style Sheets, Formatting blocks of information, Layers, CSS Combinators, Pseudo Class, Pseudo Elements, Opacity, ToolTips, Image Gallery, CSS Forms, CSS Counters, CSS Responsive. <b>HTML API'S:</b> Geolocation, Drag/drop, local storage, HTML SSE
Jan-2023	III	<b>Client side Validation:</b> Introduction to JavaScript: What Is DHTML?, JavaScript Basics, Variables, String Manipulations, Mathematical Functions, Statements, Operators, Arrays, Functions . Objects in JavaScript –Data and Objects In JavaScript, Regular Expressions, Exception Handling. DHTML with JavaScript :Data Validation, Opening a New Window, Messages and Confirmations, The Status Bar, Different Frames, Rollover Buttons, Moving Images
Jan-2023	IV	<b>XML:</b> Introduction to xml, How to write a xml document, Elements and attributes, Comments in xml, Namespace in xml, Xml css, Advantages of xml, Uses of xml, xmlschema, data types, simple types, complex types ,Validating DTD,XSD.
Feb-2023	V	<b>Word press</b> Introduction to word press, servers like wamp, bitnami e.tc, installing and configuring word press, understanding admin panel, working with posts and pages, using editor, textformatting with shortcuts, working with media-Adding, editing, deleting media elements, working with widgets, menus.

**SEMESTER – V**  
**CURRICULAR PLAN**

**Title:** WEB APPLICATIONS DEVELOPMENT USING PHP AND MYSQL    Subject Code: SECCSCT02  
SECTIONS: BSc (MPCS, MCCS)

Month	Unit No.	Topic to be covered
Nov 2022	I	<b>The Building blocks of PHP :</b> Variables, Data Types, Operators and Expressions, Constants. <b>Flow Control Functions in PHP:</b> Switching Flow, Loops, Code Blocks and Browser Output. <b>Working with Functions:</b> What is function? ,Calling functions, Functions, Returning the values from User-DefinedFunctions, Variable Scope.
Dec- 2022	II III	<b>Working with Arrays:</b> What are Arrays?, Creating Arrays, <b>Working with Objects</b> Creating Objects, Object Inheritance, <b>Working with Strings, Dates and Time-</b> Formatting strings with PHP, Investigating Strings with PHP, Manipulating Strings with PHP, Using Date and Time Functions in PHP. <b>Working with Forms-</b> Creating Forms, Accessing Form Input with User defined Arrays, Combining HTML and PHP code on a single Page, <b>Working with Cookies and User Sessions-</b> Introducing Cookies, Setting a Cookie with PHP, Session Function Overview, Starting a Session, Working with session variables
Jan-2023	IV	<b>Working with Files and Directories:</b> Creating and Deleting Files, Opening a File for Writing, Reading or Appending, Reading from File, Writing or Appending to a File. <b>Working with Images</b> -Understanding the Image-Creation Process, Drawing a New Image ,Modifying Existing Images ,Image Creation from User Input.
Feb-2023	V	<b>Interacting with MySQL using PHP</b> -MySQL versus MySQLi Functions, Connecting to MySQL with PHP ,Working with MySQL Data, <b>Creating an Online Address Book</b> -Planning and Creating Database Tables, Creating Menu, Creating Record, Addition Mechanism, Viewing Records, Creating the Record Deletion Mechanism, Adding Sub-entities to a Record.



**DEPARTMENT OF COMPUTER SCIENCE**

**SEMESTER – VI**

**CURRICULAR PLAN**

**Title:** WEB INTERFACE DESIGNING TECHNOLOGIES      **Subject Code:** SECCSCT01

**SECTIONS:** BSc (MPCS)

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
MAR 2023	I	<b>Web Designing, HTML</b> <b>Web Designing:</b> Introduction To Web Designing, Difference Between WebApplications And Desktop Applications. <b>HTML:</b> Introduction To HTML, Introduction To HTML, Headings, Paragraphs Styles & Colors, HTML Formatting, Quotations, Comments, Hyperlinks, Lists, Using colors and images, Tables, Multimedia Objects - Video, Audio, Plugins, You Tube, Frames, Forms
APR 2023	II  III	<b>CSS, HTML API'S</b> <b>CSS:</b> Introduction, Using Styles, Simple Examples, Defining Your Own Styles, Properties and Values in Styles, Style Sheets, Formatting blocks of information, Layers, CSS Combinators, Pseudo Class, Pseudo Elements, Opacity, ToolTips, Image Gallery, CSS Forms, CSS Counters, CSS Responsive. <b>HTML API'S:</b> Geolocation, Drag/drop, local storage, HTML SSE <b>Client side Validation:</b> Introduction to JavaScript: What Is DHTML?, JavaScript Basics, Variables, String Manipulations, Mathematical Functions, Statements, Operators, Arrays, Functions . Objects in JavaScript – Data and Objects In JavaScript, Regular Expressions, Exception Handling. DHTML with JavaScript : Data Validation, Opening a New Window, Messages and Confirmations, The Status Bar, Different Frames, Rollover Buttons, Moving Images
MAY -2023	IV	<b>XML:</b> Introduction to xml, How to write a xml document, Elements and attributes, Comments in xml, Namespace in xml, Xml css, Advantages of xml, Uses of xml, xmlschema, data types, simple types, complex types , Validating DTD, XSD.
JUN E 2023	V	<b>Word press</b> Introduction to word press, servers like wamp, bitnami e.tc, installing and configuring word press, understanding admin panel, working with posts and pages, using editor, text formatting with shortcuts, working with media- Adding, editing, deleting media elements, working with widgets, menus.

**SEMESTER – VI  
CURRICULAR PLAN**

**Title:** WEB APPLICATIONS DEVELOPMENT USING PHP AND MYSQL    **Subject Code:** SECCSCT02

**SECTIONS:** BSc (MPCS)

Month	Unit No.	Topic to be covered
MARCH 2023	I	<b>The Building blocks of PHP :</b> Variables, Data Types, Operators and Expressions, Constants. <b>Flow Control Functions in PHP:</b> Switching Flow, Loops, Code Blocks and Browser Output. <b>Working with Functions:</b> What is function? ,Calling functions, Functions, Returning the values from User-DefinedFunctions, Variable Scope.
APR 2023	II  III	<b>Working with Arrays:</b> What are Arrays?, Creating Arrays, <b>Working with Objects</b> Creating Objects, Object Inheritance, <b>Working with Strings, Dates and Time-</b> Formatting strings with PHP, Investigating Strings with PHP, Manipulating Strings with PHP, Using Date and Time Functions in PHP. <b>Working with Forms-</b> Creating Forms, Accessing Form Input with User defined Arrays, Combining HTML and PHP code on a single Page, <b>Working with Cookies and User Sessions-</b> Introducing Cookies, Setting a Cookie with PHP, Session Function Overview, Starting a Session, Working with session variables
MAY 2023	IV	<b>Working with Files and Directories:</b> Creating and Deleting Files, Opening a File for Writing, Reading or Appending, Reading from File, Writing or Appending to a File. <b>Working with Images -</b> Understanding the Image-Creation Process, Drawing a New Image ,Modifying Existing Images ,Image Creation from User Input.
JUNE 2023	V	<b>Interacting with MySQL using PHP -</b> MySQL versus MySQLi Functions, Connecting to MySQL with PHP ,Working with MySQL Data, <b>Creating an Online Address Book -</b> Planning and Creating Database Tables, Creating Menu, Creating Record, Addition Mechanism, Viewing Records, Creating the Record Deletion Mechanism, Adding Sub-entities to a Record.

**SEMESTER – VI  
CURRICULAR PLAN**

**Title:** BIG DATA ANALYTICS USING R    **Subject Code:** CCSC605

**SECTIONS:** B.Com (CA)

Month	Unit No.	Topic to be covered
MARCH 2023	I	<b>Introduction to Big data:</b> What is data, Classification of Digital Data-Structured Unstructured, semi-structured data, Characteristics of data, Evaluation of big data, Definition and

		challenges of big data, what is big data and why to use big data
APRIL 2023	II  III	<b>Big data Analytics:</b> What is and isn't big data analytics? Classification of analytics, Importance of big data analytics, Technologies needed to meet challenges of big data, data science, Data scientist <b>Introduction to R and getting started with R:</b> What is R? Why R? Advantages of R over other programming languages, Data types in R - logical, numeric, integer, character, double, Complex, raw, coercion, Is () command, Expressions, Variables and functions, control structures, Array, Matrix, Vectors, Factors, R packages
MAY 2023	IV	<b>Exploring data in R</b> — Data frames-data frame access, Ordering data frames, functions for data frames dim(), nrow(), ncol(), str(), summary(), names(), head(), tail(), edit(), Load data frames—reading from .CSV files, Sub setting data frames, reading from tab separated value files, Reading from tables, merging data frames
JUNE- 2023	V	<b>Data Visualization using R:</b> Reading and getting data into R (External Data), Using CSV files, XML files, Web Data, JSON files, Databases, Excel files, Working with R Charts and Graphs: Histograms, Boxplots, Bar Charts, Line Graphs, Scatter plots, Pie Chart

**SEMESTER – VI  
CURRICULAR PLAN**

**Title:** Data Science using Python      **Subject Code:** CCSC606  
**SECTIONS:** B.Com (CA)

Month	Unit No.	Topic to be covered
MARCH 2023	I	<b>INTRODUCTION TO DATA SCIENCE</b> Data science and its importance, Advantages of data science, The process of data science, Responsibilities of a data scientist, Qualifications of data scientists, Would you be a good data scientist?, Why to use python for data science
APRIL 2023	II  III	<b>INTRODUCTION TO PYTHON</b> What is python?, Features of python, History of python, Writing and executing the python program, Basic syntax, Variables, Keywords, Data types, Operators, Indentation, Control Structures-Conditional statements—If, If-else, Nested if-else, Looping statements—For, While, Nested Loops, Break, Continue, Pass <b>STRINGS AND DATA STRUCTURES</b> Strings - definition, accessing, slicing and basic operations, Lists - introduction, accessing list, operations, working with lists, functions and methods, Tuples - introduction,

		accessing tuple, operations, Dictionaries- introduction, accessing, values in dictionaries, working with dictionaries.
MAY2023	IV	<p><b>FUNCTIONSANDMODULES</b></p> <p>Functions- Defining a function, Calling a function, Types of functions, Function arguments, Local and global variables, Lambda and recursive functions, Modules---Math, Random, OS, Date and Time</p>
JUNE 2023	V	<p><b>PANDAS</b></p> <p>What is Pandas?, Series, Data Frame, Read CSV Files,Analyzing Data Frames, Data Correlations, Data Cleaning---Empty cells, Data in wrong format, Wrong data,Duplicates, Pandas Plotting-- plot () method, bar plot, hist plot, box plot, area plot, scatter plot, pie plot</p>

**A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYURU**

**DEPARTMENT OF BOTANY**

**2022 CURRICULAR PLAN (2022-23)**

**SEMESTER I Fundamentals of microbes and Non – Vascular Plants BOT11A**

Month	Unit No.	Topic to be covered
Nov2022	I	<p><b>Origin of life and viruses</b>                      Origin of life, concept of primary Abiogenesis; Miller and Urey experiment. Five kingdom classifications of R.H. Whittaker.                      Discovery of micro- organisms, Pasteur experiments, germ theory of diseases.                      Shape and symmetry of viruses; structure of TMV and Gemini virus; multiplication of TMV, a brief account of Prions and Viroids.                      A general account on symptoms of plant diseases caused by Viruses. Transmission of plant viruses and their control.                      Significance of viruses in vaccine production, bio-pesticides and as cloning vectors.</p>
Dec- 2022	II  III	<p><b>Special groups of Bacteria and Eubacteria</b>                      Brief account of Archaeobacteria, Actinomycetes and Cyano bacteria.                      Cell structure and nutrition of Eubacteria.                      Reproduction- Asexual (Binary fission and endospores) and bacterial recombination.(Conjugation, Transformation, Transduction).                      Economic importance of Bacteria with reference to their role in Agriculture and industry (fermentation and medicine).                      A general account on symptoms of plant diseases caused by Bacteria; Citrus canker.</p>
Jan-2023	III  IV	<p><b>Fungi &amp; Lichens</b>                      General characteristics of fungi and Ainsworth classification (up to classes).Structure, reproduction and life history of (a)<i>Rhizopus</i> (Zygomycota)and(b)<i>Puccinia</i> (Basidiomycota).                      Economic uses of fungi in food industry, pharmacy and agriculture.                      A general account on symptoms of plant diseases caused by Fungi; Blight of Rice.                      Lichens- structure and reproduction; ecological and economic importance.</p>
Feb-2023	IV  V	<p><b>Algae</b>                      General characteristics of Algae (pigments, flagella and reserve food material), Fritsch classification (up to classes).                      Thallus organization and life cycles in Algae.                      Occurrence, structure, reproduction and life cycle of (a)<i>Spirogyra</i> (Chlorophyceae) and (b) <i>Polysiphonia</i>(Rhodophyceae).                      Economic importance of Algae.</p>
Nov2022	I	<p><b>Bryophytes</b>                      General characteristics of Bryophytes; classification up to classes.                      Occurrence, morphology, anatomy, reproduction (developmental details are not needed) and life cycle of (a) <i>Marchantia</i>(Hepaticopsida) and (b) <i>Funaria</i>(Bryopsida).                      General account on evolution of sporophytes in Bryophyta.</p>

**SEMESTER II Basics of Vascular plants and Phytogeography BOT 201 C**

Month	Unit No.	Topic to be covered
June - '22	I	<p><b>Pteridophytes</b>                      General characteristics of Pteridophyta; classification of Smith (1955) upto divisions.                      Occurrence, morphology, anatomy, reproduction (developmental details are not needed) and life history of (a) <i>Lycopodium</i> (Lycopsida) and (b) <i>Marsilea</i> (Filicopsida).                      Stelar evolution in Pteridophytes                      Heterospory and seed habit.</p>
July- '22	II	<p><b>Gymnosperms</b>                      General characteristics of Gymnosperms; Sporne classification upto classes.                      Occurrence, morphology, anatomy, reproduction (developmental details are not needed) and life history of (a) <i>Cycas</i> (<i>Cycadopsida</i>) and (b) <i>Gnetum</i> (Gnetopsida).                      Outlines of geological time scale.                      A brief account on Cycadeoidea</p>
Aug- '22	III  IV	<p><b>Basic aspects of Taxonomy</b>                      Aim and scope of taxonomy; Species concept: Taxonomic hierarchy, species, genus and family.                      Plant nomenclature: Binomial system, ICBN –rules for nomenclature.                      Herbarium and its techniques, BSI herbarium and Kew herbarium; concept of digital herbaria.                      Bentham and Hooker system of classification                      Systematic description and economic importance of the following families:(a) Annonaceae (b) Curcubitaceae</p>
Sep- '22	V	<p><b>Systematic Taxonomy</b>                      Systematic description and economic importance of the following families:                      (a) Asteraceae                      (b) Asclepiadaceae                      (c) Amaranthaceae                      (d) Euphorbiaceae(e)                      Orchidaceae                      (f) Arecaceae(i)                      Poaceae                      Outlines of Angiosperm Phylogeny Group (APG IV).</p>
June - '22	I	<p><b>Phytogeography</b>                      Principles of Phytogeography, Distribution (wides, endemic, discontinuous species)                      Endemism – types and causes.                      Phytogeographic regions of World.                      Pytogeographic regions of India.                      Vegetation types in Andhra Pradesh</p>

**Semester: III Anatomy and Embryology of Angiosperms, Plant Ecology and Biodiversity**

Month	Unit No.	Topic to be covered
Nov 2022	I	<p><b>Anatomy of Angiosperms</b>            Organization of apical meristems: Tunica-carpus theory and Histogen theory.            Tissue systems–Epidermal, ground and vascular.            Anomalous secondary growth in <i>Boerhaavia</i> and <i>Dracaena</i>.            Study of timbers of economic importance - Teak, Red sanders and Rosewood.</p>
Dec- 2022	II	<p><b>Embryology of Angiosperms</b>            Structure of anther, anther wall, types of tapetum. Microsporogenesis and development of male gametophyte. Structure of ovule, megasporogenesis; monosporic (<i>Polygonum</i>), bisporic (<i>Allium</i>) and tetrasporic (<i>Peperomia</i>) types of embryo sacs.            Outlines of pollination, pollen – pistil interaction and fertilization.            Endosperm - Types and biological importance - Free nuclear, helobial and ruminant.            Development of Dicot (<i>Capsella bursa-pastoris</i>) embryo.</p>
Jan-2023	III  IV	<p><b>Basics of Ecology</b>            Ecology: definition, branches and significance of ecology.            Ecosystem: Concept and components, energy flow, food chain, food web, ecological pyramids.            Plants and environment: Climatic (light and temperature), edaphic and biotic factors.            Ecological succession: Hydrosere and Xerosere.</p>
Feb 23	V	<p><b>Population, Community and Production Ecology</b>            Population ecology: Natality, mortality, growth curves, ecotypes, ecads            Community ecology: Frequency, density, cover, life forms, biological spectrum            Concepts of productivity: GPP, NPP and Community Respiration            Secondary production, P/R ratio and Ecosystems</p>
Nov 2022	I	<p><b>Basics of Biodiversity</b>            Biodiversity: Basic concepts, Convention on Biodiversity - Earth Summit.            Value of Biodiversity; types and levels of biodiversity and Threats to biodiversity            Biodiversity Hot spots in India. Biodiversity in North Eastern Himalayas and Western Ghats.            Principles of conservation: IUCN threat-categories, RED data book            Role of NBPGR and NBA in the conservation of Biodiversity.</p>

Mar-2022	I	<p><b>Plant - water</b></p> <p>Importance of water to plant life, physical properties of water, diffusion, Imbibition, Osmosis. Water potential, osmotic potential, pressure potential.</p> <p>Absorption and lateral transport of water; Ascent of sap</p> <p>Transpiration: stomata structure and mechanism of stomatal movements (<math>K^+</math> ion flux). Mechanism of phloem transport; source-sink relationships.</p>
Apr-2022	II	<p><b>Mineral nutrition, Enzymes and Respiration</b></p> <p>Essential macro and micro mineral nutrients and their role in plants; symptoms of mineral deficiency.</p> <p>Absorption of mineral ions; passive and active processes.</p> <p>Characteristics, nomenclature and classification of Enzymes.</p> <p>Mechanism of enzyme action, enzyme kinetics.</p> <p>Respiration: Aerobic and Anaerobic; Glycolysis, Krebs cycle; electron transport system, mechanism of oxidative phosphorylation, Pentose Phosphate Pathway (HMP shunt).</p>
May'22	III	<p><b>Photosynthesis and Photorespiration</b></p> <p>Photosynthesis: Photosynthetic pigments, absorption and action spectra; Red drop and Emerson enhancement effect.</p> <p>Concept of two photosystems; mechanism of photosynthetic electron transport and evolution of oxygen; photophosphorylation</p> <p>Carbon assimilation pathways (<math>C_3</math>, <math>C_4</math> and CAM); Photorespiration - <math>C_2</math> pathway.</p>
June-'22	IV	<p><b>Nitrogen and lipid metabolism</b></p> <p>Nitrogen metabolism: Biological nitrogen fixation – asymbiotic and symbiotic nitrogen fixing organisms. Nitrogenase enzyme system. Lipid metabolism: Classification of Plant lipids, saturated and unsaturated fatty acids. Anabolism of triglycerides, <math>\beta</math>-oxidation of fatty acids, Glyoxylate cycle.</p>
July 22	V	<p><b>Plant growth – development and stress physiology</b></p> <p>Growth and Development: Definition, phases and kinetics of growth.</p> <p>Physiological effects of Plant Growth Regulators (PGRs) - auxins, gibberellins, cytokinins, ABA, ethylene and brassinosteroids.</p> <p>Physiology of flowering: Photoperiodism, role of phytochrome in flowering.</p> <p>Seed germination and senescence; physiological changes.</p>



**SEMESTER V Cell Biology, Genetics and Plant Breeding BOT-402**

Month	Unit No.	Topic to be covered
Mar-2022	I	<p><b>The Cell:</b></p> <p>Cell theory; prokaryotic vs eukaryotic cell; animal vs plant cell; a brief account on ultra- structure of a plant cell. Ultra-structure of cell wall. Ultra-structure of plasma membrane and various theories on its organization. Polymorphic cell organelles (Plastids); ultra structure of chloroplast. Plastid DNA.</p>
Apr-2022	II	<p><b>Chromosomes:</b></p> <p>Prokaryotic vs eukaryotic chromosome. Morphology of a eukaryotic chromosome. Euchromatin and Heterochromatin; Karyotype and ideogram. Brief account of chromosomal aberrations - structural and numerical changes Organization of DNA in a chromosome (nucleosome models).</p>
May'22	III	<p><b>Mendelian and Non-Mendelian genetics</b></p> <p>Mendel's laws of inheritance. Incomplete dominance and co-dominance; Multiple allelism. Complementary, supplementary and duplicate gene interactions (plant based examples are to be dealt). A brief account of linkage and crossing over; Chromosomal mapping - 2 point and 3 point test cross.</p>
June-'22	IV	<p><b>Structure and functions of DNA</b></p> <p>Watson and Crick model of DNA. Brief account on DNA Replication (Semi- conservative method). Brief account on Transcription, types and functions of RNA. Gene concept and genetic code and Translation. Regulation of gene expression in prokaryotes - Lac Operon.</p>
July 22	V	<p><b>Plant Breeding</b></p> <p>Plant Breeding and its scope; Genetic basis for plant breeding. Plant Introduction and acclimatization. Definition, procedure; applications and uses; advantages and limitations of : (a) Mass selection, (b) Pure line selection and (c) Clonal selection. Hybridization – schemes, and technique; Heterosis (hybrid vigor). A brief account on Molecular breeding – DNA markers in plant breeding. RAPD, RFLP.</p>

	Unit	Learning Units
Nov 2022	I	<b>Basic concepts of plant tissue culture (10h)</b> Plant tissue culture: Definition, history, scope and significance. Totipotency, differentiation, dedifferentiation, and redifferentiation; types of cultures. Infrastructure and equipment required to establish a tissue culture laboratory.
Dec- 2022	II  III	<b>Sterilization techniques and culture media (10h)</b> Aseptic conditions – Fumigation, wet and dry sterilization, UV sterilization, ultrafiltration. Nutrient media: Composition of commonly used nutrient culture media with respect to their contents like inorganic chemicals, organic constituents, vitamins, amino acids etc. Composition and preparation of Murashige and Skoog culture medium
Jan- 2023	IV	<b>Callus culture technique (10h)</b> Explant: Definition, different explants for tissue culture: shoot tip, axillary buds, leaf discs, cotyledons, inflorescence and floral organs, their isolation and surface sterilization; inoculation methods. <b>Callus culture:</b> Definition, various steps in callus culture Initiation and maintenance of callus - Growth measurements and subculture; somaclonal variations.
Feb- 2023	V	<b>Micropropagation (10h)</b> Direct and indirect morphogenesis, organogenesis, role of PGRs; somatic embryogenesis and synthetic seeds. Greenhouse hardening unit operation and management; acclimatization and hardening of plantlets - need, process, packaging, exports. Pathogen (Virus) indexing- significance, methods, advantages, applications.
Feb 2023	v	<b>Applications of plant tissue culture (10h)</b> Germplasm conservation: cryopreservation methods, slow growth, applications and limitations; cryoprotectants.  Plant transformation techniques and bioreactors; production of secondary metabolites-optimization of yield, commercial aspects, applications, limitations. Transgenic plants- gene transfer methods; BT cotton.

SEMESTER V: Mushroom Cultivatiom SECBOT-502

Month	Unit No.	Topic to be covered
Nov 2022	I	<p>Mushrooms: Definition, structure of a mushroom and a brief account of life cycle; historical account and scope of mushroom cultivation; difference between edible and poisonous mushrooms.</p> <p>Morphological features of any four edible mushrooms, Button mushroom (<i>Agaricusbisporus</i>), Milky mushroom (<i>Calocybe indica</i>), Oyster mushroom (<i>Pleurotussajor-caju</i>) and Paddy straw mushroom (<i>Volvariellavolvacea</i>).</p> <p>Nutritional value of mushrooms; medicinal mushrooms in South India - <i>Ganoderma lucidum</i>, <i>Phellinus rimosus</i>, <i>Pleurotus florida</i> and <i>Pleurotus pulmonaris</i> – their therapeutic value; Poisonous mushrooms - harmful effects</p>
Dec- 2022	II  III	<p>Basic requirements of cultivation system</p> <p>Small village unit and larger commercial unit; layout of a mushroom farm - location of building plot, design of farm, bulk chamber, composting, equipment and facilities, pasteurization room and growing rooms.</p> <p>Compost and composting: Definition, machinery required for compost making, materials for compost preparation.</p> <p>Methods of composting- long method of composting and short method of composting</p>
Jan-2023	IV	<p>Spawning and casing</p> <p>Spawn and spawning: Definition, facilities required for spawn preparation; preparation of spawn substrate.</p> <p>Preparation of pure culture, media used in raising pure culture; culture maintenance, storage of spawn.</p> <p>Casing: Definition, Importance of casing mixture, Quality parameters of casing soil, different types of casing mixtures, commonly used materials</p>
Feb-2023	V	<p><b>Mushroom cultivation</b></p> <p>Raw material, compost, spawning, casing, cropping, and problems in cultivation (diseases, pests and nematodes, weed molds and their management strategies), picking and packing for any Four of the following mushrooms: (a) Button mushroom (b) Oyster mushroom (c) Milky mushroom and (d) Paddy straw mushroom</p>
Feb 2023	v	<p><b>Post harvest technology</b></p> <p>Shelf life of mushrooms; preservation of mushrooms - freezing, dry freezing, drying and canning. Quality assurance and entrepreneurship - economics of different types of mushrooms; value added products of mushrooms. Management of spent substrates and waste disposal of various mushrooms.</p>

**A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU****DEPARTMENT OF ZOOLOGY****2022-2023****SEMESTER – I****CURRICULAR PLAN**Subject Code: **ZOOTIA**Title: **Animal Diversity Biology of Non – Chordates**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Nov2022	I	Introduction to Non-chordates – Origin of metazoans Type study: <i>Polystomella</i> (structure and life cycle) Locomotion in protozoans Nutrition in protozoans Type study: <i>Sycon</i> (Structure, histology and skeleton) Canal system in sponges
Dec- 2022	II III	Type study: <i>Obelia</i> . (Structure – polyp and medusa and life cycle) Polymorphism in cnidarians. Corals and coral reefs Ctenophora (structure and affinities) Type study: <i>Fasciola hepatica</i> (Structure, reproduction, life cycle and pathogenicity) Parasitic adaptations in helminthes
Jan-2023	III IV	Type study: <i>Ascarislumbricoides</i> (Structure, reproduction, life cycle and pathogenicity) Type study: <i>Hirudinaria</i> (Structure, circulatory, excretory and reproductive systems) Coelom and coelomoducts in annelid Structural affinities of Onychophora Type study: <i>Macrobrachiumrosenbergii</i> (Structure, appendages and Respiratory system)
Feb-2023	IV V	Economic importance of insects (Beneficial – Lac insect, honey bee, <i>Bombyxmori</i> and Lady bird; Harmful – house fly, mosquito, locustand bedbug) Metamorphosis in insects Study of Pearl Oyster and Pearl Formation Torsion in gastropods Water-vascular system Echinoderm larvae <i>Balanoglossus</i> - Structure and affinities

**SEMESTER – II**  
**CURRICULAR PLAN**

**Subject Code: ZOO T21A Title: Animal Diversity – Biology of Chordates**

Month	Unit No.	Topic to be covered
June - '22	I	Protochordates to cyclostomes Protochordates Salient features of Urochordata and Cephalochordata Structure and life-history of <i>Herdmania</i> , Significance of retrogressive metamorphosis. General organization of vertebrates General characters of cyclostomes Comparison of <i>Petromyzon</i> and <i>Myxine</i>
July - '22	II	Fishes Type study – <i>Scoliodon</i> - Morphology, respiratory, circulatory, excretory and nervous systems and sense organs. Migration in fishes. Viviparity in fishes Types of scales Accessory respiratory organs in fishes
Aug - '22	III  IV	Amphibia South Indian Amphibians. Type study - <i>Rana</i> : Morphology, digestive system, respiratory system, circulatory system, excretory system, nervous system and reproductive system Parental care in amphibians Reptilia South Indian Chelonians. Type study – <i>Calotes</i> : Morphology, digestive, respiratory, circulatory, urinogenital and nervous systems. Identification of poisonous snakes
Sep - '22	V	Aves and Mammalia <b>Aves</b> Birds as Glorified Reptiles. Type study - Pigeon ( <i>Columba livia</i> ): Exoskeleton, respiratory, circulatory and excretory systems Significance of migration in birds Flight adaptations in birds <b>Mammalia</b> Aquatic Mammals Dentition in Mammals

DEPARTMENT OF ZOOLOGY

2022-2023

SEMESTER – III

CURRICULAR PLAN

Subject Code: ZOOT31A Title: Cell Biology, Cellular Metabolism, Genetics, Organic Evolution and Animal Behaviour

Month	Unit No.	Topic to be covered
Nov 2022	I	Electron microscopic structure of animal cell. Structure and functions of Golgi complex, Endoplasmic Reticulum And Liposome's Structure and functions of Ribosome's and Mitochondria Structure and functions of Chromosomes (Polygene and Lamp brush chromosomes) Structure and functions of Nucleus and its components
Dec- 2022	II	Bio molecules Carbohydrates - Classification of carbohydrates; Structure of glucose Proteins - Classification of proteins; General properties of amino acids Lipids - Classification of lipids 1 Hour Carbohydrate metabolism – Glycogen metabolism, Gluconeogenesis Protein metabolism-Transamination, Deamination and Urea Cycle
Jan-2023	III	Gene interactions (lethal genes, Epistasis & Pleiotropy) DNA damage and repair Human karyotyping and amniocentesis Autosomal and allosomal disorders (Klinefelter syndrome, Turner Syndrome, Down syndrome, Phenylketonuria, Alkaptonuria & Sickle cell anaemia) Modern synthetic theory of evolution Variations Isolating mechanisms
	IV	Types of natural selection (directional, stabilizing & disruptive) Artificial selection Speciation – allopatry and sympatry. Microevolution vs. Macroevolution (Example: Darwin finches)
Feb 23	V	Ethology and its branches. Concepts of Ethology (motivation, fixed action patterns, releasers, learning) Biological clocks Biological rhythms (Circadian, Circalunar and Circannual) Sexual behavior in animals (Intra sexual selection & Inter sexual selection) Coloration & Mimicry

**SEMESTER – IV  
CURRICULAR PLAN**

**Subject Code : ZOOT41A Title: Embryology, Animal Physiology, and Ecology**

Month	Unit No.	Topic to be covered
Mar-2022	I	1.0. Embryology                      1.1. Spermatogenesis, oogenesis and Fertilization. 1.2.Types of eggs                      1.3 Types of cleavages 1.4. Development of frog up to gastrulation and formation of primary germ layers 1.5.Foetal membranes and their significance in chick embryo 1.6. Placenta in mammals: types and functions
Apr-2022	II	2.0 Physiology - I 2.1.Digestive system: process of digestion 2.2. Absorption of digested food 2.3. Respiratory system - Pulmonary ventilation, transport of oxygen and Carbon dioxide 2.4. Circulatory system - Structure and functioning of heart, Cardiac cycle. 2.5 Excretory system - Structure of nephron, urine formation, and counter current Mechanism
May'22	III	3.0 Physiology - II 3.1. Nerve impulse -Resting membrane potential, origin and propagation of action potentials along myelinated and non- myelinated nerve 3.2. Muscle contraction - Ultra structure of muscle fibre, molecular and chemical basis of muscle contraction 3.3. Endocrine glands - Structure, secretions and the functions (of hormones) of pituitary, thyroid, parathyroid, adrenal glands and pancreas 3.4. Hormonal control of reproduction in human
June-'22	IV	4.0. Ecology I                      4.1. Physical and chemical factors of an ecosystem 4.1.1. Pressure                      4.1.2. Atmospheric gases: oxygen and carbon dioxide. 4.2 Functional aspects of an ecosystem 4.2.1. Biogeochemical cycles: nitrogen cycle, phosphorus cycle and carbon cycle 4.3 Animal communities 4.3.1 Types of communities 4.3.2. Community structure                      4.3.3. Ecotone and edge effect, 4.4 Community interactions                      4.4.1 Prey-predator relationships 4.4.2. Competition
July 22	V	5.0. Ecology - II 5.1Habitat Ecology and adaptations 5.1.1. Ecological habitat and niche 5.1.2. Desert adaptations 5.1.3. Pelagic adaptations 5.2.Population Ecology 5.2.1. Characteristics of animal populations 5.3. Zoogeography 5.3.1 Zoogeographical regions: Study of physical and faunal peculiarities of Oriental, Australian and Ethiopian regions

**SEMESTER – IV****2022-23****CURRICULAR PLAN****Title: Immunology and Animal Biotechnology Course Code: ZOOTO1**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Mar-2023	I	1.0 Immunology – I (Overview of Immune system) 1.1. Introduction to basic concepts in Immunology 1.2. Innate and adaptive immunity 1.3. Vaccines and Immunization programme 1.4. Cells of immune system 1.5. Organs of immune system
Apr-2023	II	2.0. Immunology – II (Antigens, Antibodies, MHC and Hypersensitivity) 2.1Antigens: 2.1.1Basic properties of antigens 2.1.2.B and T cell epitopes, haptens and adjuvants 2.1.3. Factors influencing immunogenicity 2.2. Antigen – antibody reactions Antibodies Structure of antibody, Classes and functions of antibodies 2.3. Structure and functions of major histocompatibility complexes 2.4. Exogenous and Endogenous pathways of antigen presentation 2.5. Hypersensitivity – Classification and Types 2.6. Basic properties and functions of cytokines
May'23	III	3.0. Biotechnology – I (Techniques of Recombinant DNA technology) 3.1.Genetic Engineering: Basic concept, Vectors, Restriction Endonucleases and Recombinant DNA technology 3.2. Gene delivery: Microinjection, electroporation, biolistic method (gene gun), liposome and viral-mediated gene delivery 3.3. PCR: Principle, procedure and advantages of PCR 3.4. DNA Sequencing: Maxam Gilbert and Sanger's methods of DNA sequencing- traditional and automated sequencing 3.5. Hybridization techniques: Southern, Northern and Western blotting
June-23		4.0 Biotechnology – II (Cell culture techniques) 4.1. Animal Cell, Tissue and Organ culture media: Natural and Synthetic media 4.2. Cell cultures 4.2.1. Establishment of cell culture: Primary culture, Protocols for Primary Cell Culture and Secondary culture 4.2.2. Types of cell lines: Continuous and Established Cell lines (common examples such as MRC, HeLa, CHO, BHK, Vero 4.3. Organ culture; Cryopreservation of cultures 4.4. Stem cells: Types of stem cells and applications 4.5. Hybridoma Technology: Production & applications of Monoclonal antibodies(mAb)



July- '23	IV	UNIT – V 5.0. Biotechnology – III (Applications of Animal Biotechnology) 5.1. Transgenesis: Production of Transgenic animals: sheep and fish 5.2. Ethical, Legal, Social and Disposable issues of Genetically Modified Organisms 5.3. Manipulation of reproduction in animals: Artificial Insemination, <i>In vitro</i> fertilization, super ovulation, Embryo transfer, Embryo cloning 5.4. Applications in Industry: Fermentation: Different types of Fermentation and Downstream processing
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**DEPARTMENT OF ZOOLOGY**  
**2022-2023**  
**SEMESTER – V**  
**2022-2023 CURRICULAR PLAN**

Subject Code: **ZOO501**

Title: **SUSTAINABLE AQUACULTURE MANAGEMENT**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Nov 2023	I	Present status of Aquaculture – Global and National scenario, Major cultivable species for aquaculture: freshwater, brackish water and marine. Traditional, extensive, modified extensive, semi-intensive and intensive cultures of fish and shrimp. Design and construction of fish and shrimp farms.
Dec- 2023	II III	Functional classification of ponds – head pond, hatchery, nursery ponds. Functional classification of ponds -rearing, production, stocking and quarantine ponds. Need of fertilizer and manure application in culture ponds. Physio-chemical conditions of soil and water optimum for culture (Temperature, depth, turbidity, light, water, PH, BOD, CO <sub>2</sub> and nutrients)
Jan-2023	IV	Induced breeding in fishes Culture of Indian major carps: Pre-stocking management (Dewatering, drying, ploughing/desilting; Predators, weeds and algal blooms and their control, Liming and fertilization) Culture of Indian major carps - Stocking management Culture of Indian major carps - post-stocking management
Feb-2023	V	Commercial importance of shrimp & prawn <i>Macrobrachium rosenbergii</i> - biology, seed production. Culture of <i>L. vannamei</i> – hatchery technology and culture practices Mixed culture of fish and prawns. Viral diseases of Fin Fish & shell fish Fungal diseases of Fin & Shell fish Bacterial diseases of Finfish & Shell fish Prophylaxis in aquaculture

**DEPARTMENT OF ZOOLOGY**  
**SEMESTER – V**  
**2022-2023 CURRICULAR PLAN**

Subject Code: **ZOO502**

**Title: POSTHARVEST TECHNOLOGY OF FISH AND FISHERIES**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Nov 2022	I	<b>Handling and Principles of fish Preservation</b> Handling of fresh fish, storage and transport of fresh fish, post mortem changes (rigor mortis and spoilage), spoilage in marine fish and fresh water fish. Principles of preservation – cleaning, lowering of temperature, rising of temperature, denudation, use of salt, use of fish preservatives, exposure to low radiation of gamma rays.
Dec- 2022	II  III	<b>Methods of fish Preservation</b> Traditional methods - sun drying, salt curing, pickling and smoking. .Advanced methods – chilling or icing, refrigerated sea water, freezing, canning, irradiation and Accelerated Freeze drying (AFD) <b>Processing and preservation of fish and fish by-products</b> Fish products – fish minced meat, fish meal, fish oil, fish liquid (ensilage), fish protein concentrate, fish chowder, fish cake, fish sauce, fish salads, fish powder, pet food from trash fish, fish manure. 3.2 Fish by-products – fish glue, Using glass, chitosan, pearl essence, shark fins, fish Leather and fish maws
Jan-2023	IV	<b>Sanitation and Quality control</b> Sanitation in processing plants - Environmental hygiene and Personal hygiene in processing plants. 4.2 Quality Control of fish and fishery products – pre-processing control, control during processing and control after processing.
Feb-2023	V	<b>Quality Assurance, Management and Certification</b> Seafood Quality Assurance and Systems: Good Manufacturing Practices (GMPs); Good Laboratory Practices (GLPs); Standard Operating Procedures (SOPs); Concept of Hazard Analysis and Critical Control Points (HACCP) in seafood safety. National and International standards – ISO 9000: 2000 Series of Quality Assurance System, <i>Codex Alimentarius</i>

## SEM VI INTERNSHIP

### DEPARTMENT OF ZOOLOGY SEMESTER – III 2022-2023 CURRICULAR PLAN

Subject Code: LSCZOOT01 Title: Health and Hygiene

Month	Unit No.	Topic to be covered
Nov-2021	I	Nutrition – definition, importance, Good nutrition and mal nutrition; Balanced Diet: Basics of Meal Planning Carbohydrates –functions, dietary sources, effects of deficiency. Lipids –functions, dietary sources, effects of deficiency. Proteins –functions, dietary sources, effects of deficiency. Brief account of Vitamins- functions, food sources, effects of deficiency, Macro and micro minerals –functions, effects of deficiency; food sources of Calcium, Potassium and Sodium; food sources of Iron, Iodine and Zinc Importance of water– functions, sources, requirement and effects of deficiency.
Dec&Jan – 2021&2022	II	<b>Health</b> Health - Determinants of health, Key Health Indicators, Environment health & Public health; Health-Education: Principles and Strategies Health Policy & Health Organizations: Health Indicators and National Health Policy of Govt. of India-2017; Functioning of various nutrition and health organizations in India viz., NIN (National Institution of Nutrition), FNB (Food and Nutrition Board), ICMR (Indian Council of Medical Research), IDA (Indian Dietetics Association),WHO-India, UNICEF-India National Health Mission: National Rural Health Mission (NRHM) Framework, National Urban Health Mission (NUHM) Framework Women & Child Health Care Schemes: Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+); Janani Shishu Suraksha Karyakaram (JSSK); Rashtriya Bal Swasthya Karyakram(RBSK); India Newborn Action Plan (INAP); Adolecent Health- Rashtriya Kishor Swasthya Karyakram (RKSK) Disaster Management – Containment, Control and Prevention of Epidemics and Pandemics – Acts, Guidelines and Role of Government and Public
Feb-2022	III	<b>Hygiene</b> Hygiene – Definition; Personal, Community, Medical and Culinary hygiene; WASH (WAter, Sanitation and Hygiene) programme Rural Community Health: Village health sanitation & Nutritional committee (Roles & Responsibilities); About Accredited Social Health Activist (ASHA); Village Health Nutrition Day, Rogi Kalyan Samitis Community & Personal Hygiene: Environmental Sanitation and Sanitation in Public places Public Awareness through Digital Media - An Introduction to Mobile Apps of Government of India: NHP, Swasth Bharat, No More Tension, Pradhan Mantri Surakshit Mantritva Abhiyan (PM Suman Yojana), My Hospital (Mera aspataal), India fights Dengue, JSK Helpline, Ayushman Bhava, Arogya Setu, Covid 19AP

**B.SC. AQUACULTURE/ TEACHING PLAN****2022-2023****SEMESTER – I**Subject Code: **AQU P11A**Title: **Basic principles of aquaculture**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Mar-2023	I	Definition and History of Aquaculture Concept of Blue Revolution and Pradhan Mantri Matsya Sampada Yojana (PMMSY) Present status of Aquaculture at global level, India and Andhra Pradesh Aquaculture versus Agriculture; Present day needs with special reference to Andhra Pradesh Aquaculture resources: Ponds, tanks, lakes, reservoirsetc. Capture and Culture fisheries; Advantages of culture fishery over capture fishery
Apr - 2023	II	Lotic and lentic systems, streams and springs, Classification of ponds based on water resources – spring, rain water, flood water, well water and water course. Functional classification of ponds – head pond, hatchery, nursery, rearing, production and stocking ponds; quarantine ponds, isolation ponds and wintering ponds Hatchery design
May-2023	III IV	Important factors in the construction of an ideal fish pond – site selection, topography, nature of the soil, water resources Lay out and arrangement of ponds in a fishfar Construction of an ideal fish pond – space allocation, structure and components of barrage Pond Types of aquaculture Fresh water aquaculture Brackish water aquaculture Mariculture Aquaculture Systems – Pond, Raceways, Cage, Pen, Rafts, Running water, Water Recirculating Systems, Biofloc Technology and 3-C System
Jun-2023	IV V	Pond culture practices- Traditional, Extensive, Modified Extensive, Semi-Intensive, Intensive & Super-intensive systems of fish and shrimp and their significance. Fin fish culture methods - Monoculture, Polyculture and Monosex cultureand Integrated fish farming Dewatering,drying,ploughing/desilting Liming and fertilization; Need of fertilizer and manure application, NPK contents of different fertilizers and manures and precautions in their Application Predators, weeds and weed fish in culture ponds - Advantages and disadvantages of weed plants; Toxins used for weed control and control ofpredators. Algal blooms and their control
Jul-2023	V	<b>Stocking Management</b> – Stocking density and stocking <b>Post-stocking Management</b> Feeding: Role of nutrients Water quality: Physico-chemical conditions of soil and water optimum for culture – temperature, depth, turbidity, light, water and shore currents, PH, DOD, CO2, NH3, NO2 and nutrients Measures to increase oxygen and reduce ammonia & hydrogen sulphide in culture ponds; correction of PH

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**DEPARTMENT OF ZOOLOGY**

**SEMESTER – II**

**CURRICULAR PLAN/ TEACHING PLAN**

**2022-2023**

**Subject Code: AQTT21A**

**Title: : Biology of fin fish & shell fish**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
June-2022	I	Classification of Finfish and Shell fish Classification of fishes up to the level of Class. Classification of crustaceans up to the level of Class Finfish and Shell fish of Commercial Importance Cultivable fin fish Cultivable shell fish . Sense organs of fishes and crustaceans Specialized organs in fishes – electric organ, venom and toxins . buoyancy in fishes- swim bladder and mechanism of gas secretion
July -2022	II	Natural fish food Feeding habits, feeding intensity, stimuli for feeding, utilization of food Gut content analysis. Structural modifications in relation to feeding habits. Forage ratio and food selectivity index <b>.Age and Growth</b> Principles of Age and growth determination Growth regulation Growth rate measurement – scale method, otolith method, skeletal parts as age indicators
Aug2022	II  III	Genetic, biotic & ecological factors in determining the longevity of fishes Length frequency method, age composition, age-length keys, absolute and specific growth, back calculation of length and growth, annual survival rate, asymptomatic length, fitting of growth curve . Length-weight relationship Condition factor/Ponderal index, relative condition factor <b>Breeding in Fishes.</b> Breeding habits & breeding grounds Breeding in natural environment and in artificial ponds, courtship Reproductive cycles Induced breeding in fishes <b>Breeding in shrimp</b> <b>Breeding in pearl oyster</b>
Sep2022	IV  V	Ovo-viviparity, oviparity, viviparity in fishes Parental care in fishes, nest building and brooding Embryonic and larval development of fishes Embryonic and larval development of shrimp 4.. Embryonic and larval development of crabs Environmental factors affecting reproduction and development of cultivable aquatic fin & shellfish Endocrine system in fishes Neurosecretory cells, androgenic gland, ovary, Y-organ, chromatophores, Pericardial glands and cuticle. Molting, molting stages, metamorphosis in crustacean shellfish

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**SEMESTER – III**

**CURRICULAR PLAN/ TEACHING PLAN**

**2022-2023**

Subject Code: **AQTT31A**

Title: **Fresh water & Brackish water Aquaculture**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Mar-2023	I	Status, scope and prospects of fresh water aquaculture in the world, India and AP Criteria for the selection of species for culture Natural seed resources and procurement of seed for stocking Culture of cultivable major Indian carps– <i>Labeo</i> , <i>Catla</i> and <i>Cirrhinus</i> And Minor carps Culture of Exotic fish species – <i>Tilapia</i> , <i>Pangassius</i> and <i>Clarius species</i> Impact of exotic fish, compatibility of Indian and exotic carps and Competition among them Composite fish culture system of Indian and exotic and genetically modified carps (Amur common carp, Jayanthi Rohu
Apr - 2023	II	Fresh water prawns of India -commercial value Natural seed resources and procurement of seed for stocking <i>Macrobrachium rosenbergii</i> – biology, seed production, pond preparation, stocking Management of nursery and grow-out ponds, feeding ,morpho types and harvesting <i>M. malcolmsonii</i> - biology, seed production, pond preparation, stocking, Management of nursery and grow-out ponds, feeding, morpho types and harvesting
May-2023	III	Status, scope and prospects of brackish water aquaculture in the world, India and AP Major cultivable species for brackish water aquaculture Biology and culture of <i>Latescalcarifer</i> Biology and culture of <i>Chanoschanos</i> Biology and culture of <i>Mugilcephalus</i> Biology and culture of <i>Etroplussuratensis</i> Biology and culture of <i>Trachinotussps</i> (Pampano
Jun-2023	IV	<b>Brackish Water Shell Fish Aquaculture-I</b> Culture of <i>P.mondon</i> –Hatchery technology and culture practices including feed and Disease management Culture of <i>L.vannamei</i> – Hatchery technology and culture practices including feed and Disease management. Mixed culture of fish and prawns
Jul-2023	V	<b>Export – oriented Brackish Water Shell Fish Aquaculture-II</b> Biology and culture of <i>Scylla serrata</i> Biology and culture of <i>Pinctada vulgaris</i> Biology and culture of <i>Crassostrea species</i>

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DEPARTMENT OF ZOOLOGY

**SEMESTER – IV**

**CURRICULAR PLAN/ TEACHING PLAN**

**2021-2022**

**Subject Code: AQU 401C**

**Title: Fish nutrition & Feed technology**

Month	Unit No.	Topic to be covered
Mar-2022	I	Nutritional requirements of cultivable fish and shellfish Classification of nutrients; Nutritional requirements (energy, proteins, carbohydrates, lipids, fiber, micronutrients) of different stages of cultivable fish and shellfish. Essential amino acids and fatty acids, protein to energy ratio, nutrient interactions and protein sparing effect Dietary sources of energy, effect of ration on growth, determination of feeding rate, check tray, factors affecting energy partitioning and feeding Importance of natural and supplementary feeds, balanced diet.
Apr - 2022	II	Live foods: Fish food organisms – Bacterioplankton, phytoplankton, zooplankton and their role in larval nutrition. Artificial feeds: Supplementary feed stuffs; Non-conventional feed ingredients; Forms of processed feeds - wet feeds, moist feeds, dry feeds, mashes, pelleted feeds - floating and sinking pellets; advantages of pelletization Water stability feeds, farm made aqua feeds, micro-coated feeds, micro-encapsulated feeds and micro-bound diets Feed additives: Binders, antioxidants, probiotics, enzymes, pigments, growth promoters, feed stimulants; use of preservatives
May-2022	III	Feed ingredients: selection, nutrient composition and nutrient availability. Feed formulation and manufacturing – extrusion processing and steam pelleting - grinding, mixing and drying, pelletization, and packing Microbial, insect and rodent damage of feed, chemical spoilage during storage period and feed storage methods.
June-2022	IV	Feeding devices and methods: Manual feeding, demand feeders, automatic feeders, surface spraying, bag feeding & tray feeding Feeding schedules: Frequency of feeding, feeding rates and ration size Feed evaluation: feed conversion ratio, feed conversion efficiency and protein efficiency ratio.
July-2022	V	Protein (Essential amino acid) and Lipid (Essential fatty acid) deficiency disorders; Fatty liver disease in fishes Vitamin and mineral deficiency disorders Anti-nutrients and aflatoxins.



**DEPARTMENT OF ZOOLOGY**  
**SEMESTER – IV**  
**CURRICULAR PLAN/ TEACHING PLAN**  
**2021-2022**

**Subject Code: AQU 402C**

**Title: Fish health management**

Month	Unit No.	Topic to be covered
Mar-2022	I	Principles of disease diagnosis and fish health management. Prophylaxis, Hygiene and Therapy of fish diseases. Defense mechanism in finfish and shellfish – specific and non-specific immune system. Role of stress and host defense mechanism in disease development - Host, pathogen and environment interaction.
Apr - 2022	II	Clinical symptoms, pathology, prevention and therapy of <b>Viral diseases:</b> Viral Haemorrhagic septicemia, Infectious Hematopoietic Necrosis (IHN) <b>Bacterial diseases:</b> Epizootic ulcerative syndrome, Infectious abdominal dropsy, Bacterial gill disease, Columnaris disease, Tail and fin rot <b>Fungal diseases:</b> Saprolegniasis and Brachiomyxosis. <b>Protozoan diseases:</b> Ichthyophthiriasis, Myxoboliasis/ Whirling disease, Enterococcidiasis <b>Helminthic and Crustacean parasitic diseases:</b> Gyrodactylosis and Dactylogyrosis; Argulosis and Lernaeiasis.
May- 2022	III	Clinical symptoms, pathology, prevention and therapy of <b>Viral diseases:</b> White spot syndrome, Monodon Baculovirus, Infectious hypodermal and haematopoietic necrosis virus, Hepato Pancreatic parvo like virus, Yellow head baculovirus, Taura Syndrome. <b>Bacterial diseases:</b> Vibriosis, white gut disease, loose shell syndrome, Acute Hepato- pancreatic Necrosis Disease (Early Mortality Syndrome, EMS) <b>Fungal diseases:</b> Hepatopancreatic microsporidiosis (HPM) by .Enterocytozoon hepatopenaei (EHP), <i>Lagenidium</i> and <i>Fusarium</i> disease. <b>Protozoan diseases:</b> ectocommensal protozoa – <i>Zoothamnium</i> and <i>Acineta</i>
June- 2022	IV	Nutritional and Environmental disorders Clinical symptoms, pathology, prevention and therapy of <b>Fish:</b> Protein (Essential amino acid) and Lipid (Essential fatty acid) deficiency disorders; Vitamin and mineral deficiency disorders; Fatty liver disease; Gas bubble disease, Asphyxiation. <b>Shrimp:</b> Soft shell syndrome, Blue disease/Pigment deficiency syndrome, Red disease, Cramp tail syndrome, Black gill disease, Muscle necrosis, Black death disease. Role of gut probiotics in health management of fish and shrimp. Bioremediation of soil and water as a strategy for health management in ponds.
July-2022	V	Diagnostic tools – immune detection- DNA/RNA technique – molecular diagnosis of viral diseases. Principles and methods of vaccine production and fish immunization. Quarantine and health certification in aquaculture. Significance of Biosecurity and Specific pathogen free seed (SPF) in health management.

**DEPARTMENT OF ZOOLOGY**  
**SEMESTER – V INTERNSHIP**  
**2022-2023**

**CURRICULAR PLAN/ TEACHING PLAN**

**SEMESTER – VI**

Subject Code: **AQU501**      **Title: Aquarium Management and Ornamental Fish Culture**

<b>Month</b>	<b>Unit No.</b>	<b>Topic to be covered</b>
Mar-2023	I	Aquarium design and Construction <b>Introduction</b> to aquarium. World aquarium trade and present status. Design and construction of home and public aquaria (freshwater and marine), oceanarium. Aquarium accessories - Aerators, filters (different types) and lighting. Water quality requirements
Apr - 2023	II	<b>Aquarium Management</b> Setting up of aquarium – under gravel filter, pebbles, plants, drift wood, ornamental objects and selection of fishes, Quarantine measures. Aquarium maintenance and water quality management for fresh water and marine aquariums.
	III	Handling, care, packing and transportation of fishes - Use of anaesthetics. Temperature acclimation Freshwater Ornamental Fishes Species of ornamental fishes - their taxonomy and biology- Live bearers, Gold fish and Koi, Gourami, Barbs and Tetras, angel fish, cichlids
May-2023	III	.Maturation, secondary sexual characters, breeding habits, spawning, parental care, fertilization and development of eggs Hatching, larval rearing and their health.
	IV	Commercial Production Commercial production of goldfish, live bearers, gouramies, barbs and tetras, angel fish. Natural ponds for the mass production of ornamental fishes.
Jun-2023	IV	Multiplication of aquarium plants – different methods. Marine Ornamental Fishes
	V	Marine ornamental fishes – varieties and their habitat. Major marine ornamental fish resources of India. Method of collection of live fish. Breeding of marine ornamental fishes (clown fishes and Damsel fishes)

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DEPARTMENT OF ZOOLOGY

2022-2023

CURRICULAR PLAN/ TEACHING PLAN

SEMESTER – VI

Subject Code:Aqu 502

Title: Postharvest Technology Of Fish And Fisheries

Month	Unit No.	Topic to be covered
Mar 2023	I	<b>Handling and Principles of fish Preservation</b> Handling of fresh fish, storage and transport of fresh fish, post mortem changes (rigor mortis and spoilage), spoilage in marine fish and fresh water fish.Principles of preservation – cleaning, lowering of temperature, rising of temperature, denudation, use of salt, use of fish preservatives, exposure to low radiation of gamma rays.
Apr -2023	II	<b>Methods of fish Preservation</b> Traditional methods - sun drying, salt curing, pickling and smoking. .Advanced methods – chilling or icing, refrigerated sea water, freezing, canning, irradiation and Accelerated Freeze drying (AFD)
	III	<b>Processing and preservation of fish and fish by-products</b> Fish products – fish minced meat, fish meal, fish oil, fish liquid (ensilage), fish protein concentrate, fish chowder, fish cake, fish sauce, fish salads, fish powder, pet food from trash fish, fish manure. 3.2 Fish by-products – fish glue, Using glass, chitosan, pearl essence, shark fins, fish Leather and fish maws
May 2023	IV	<b>Sanitation and Quality control</b> Sanitation in processing plants - Environmental hygiene and Personal hygiene in processing plants. 4.2 Quality Control of fish and fishery products – pre-processing control, control during processing and control after processing
June 2023	V	<b>Quality Assurance, Management and Certification</b> Seafood Quality Assurance and Systems: Good Manufacturing Practices (GMPs); Good Laboratory Practices (GLPs); Standard Operating Procedures (SOPs); Concept of Hazard Analysis and Critical Control Points (HACCP) in seafood safety. National and International standards – ISO 9000: 2000 Series of Quality Assurance System, <i>Codex Alimentarius</i>