A.G&S.G.S DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU
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
	V	14. తెలుగు సాహిత్య విమర్శ 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	**వ్యక్తీకరణ నైపుణ్యాలు** 1. భాష - ప్రాధమిక 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	**అనువాద రచన** 7. అనువాదం:- నిర్వచనం, అనువాద పద్ధతులు. 8. అనువాద సమస్యలు:- భౌగోళిక, భాషా, సాంస్కృతిక సమస్యలు, పరిష్కారాలు. 9. అభ్యాసము:- ఆంగ్లం నుండి తెలుగునకు ఒక పేరాను అనువదించటం
Feb-'22	IV	**మాధ్యమాలకు రచన - I:- ముద్రణ / ప్రింట్ మీడియా** 10. ముద్రణా మాధ్యమం / అచ్చు /:- పరిచయం, పరిధి, వికాసం. 11. వివిధ రకాల పత్రికలూ పరిశీలన, పత్రికా భాష, శైలి, వైవిధ్యం. 12. పత్రికా రచన:- వార్తా రచన, సంపాదకీయాలు, సమీక్షలు - అవగాహన.
Mar-'22	V	**మాధ్యమాలకు రచన - II:- ప్రసార మాధ్యమం / ఎలక్ట్రానిక్ మీడియా** 13. ప్రసార మాధ్యమాలు:- నిర్వచనం, రకాలు, విస్తృతి, ప్రయోజనాలు. 14. శ్రవణ మాధ్యమాలు:- రచన:- రేడియో రచన, ప్రసంగాలు, నాటికలు, ప్రసార సమాచారం. 15. దృశ్య మాధ్యమాలు - రచన:- వ్యాఖ్యానం / యాంకరింగ్, టెలివిజన్ రచన.

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

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.गूदडसाई 3.उसनेकहाथा
Jan - 2023	**I** **IV**	मित्रता व्याकरण
Feb-2023	**V**	पत्रलेखन

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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: ज्ञानज्ञानाश्रयीशाखा
Dec-2022	**I** **III**	गीतफरोश सामान्यनिबंध: सामाचारपत्र, कंप्यूटर, पर्यावरणऔरप्रदूषण
Jan - 2023	**II** **IV**	भक्तिकाल: प्रेमाश्रयीशाखा अनुवाद
Feb-2023	**III** **V**	बेकारीकीसमस्या परिपत्र ज्ञापन 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	संकृति 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

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

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**	**Listening Skills –** 1. Importance of Listening 2. Types of Listening
Nov-2022	**I** **II** **III**	**Listening Skills –** Barriers to Effective Listening **Speaking Skills** – Sounds of English: Vowels and Consonants **Grammar** –Concord and Modals
Dec-2022	**II** **III**	**Speaking Skills** – Word Accent and Intonation **Grammar** – Articles, Prepositions and Tenses (Present/Past/Future)
Jan - 2023	**III** **IV**	**Grammar** – Question Tags, Sentence Transformation (Voice, Reported Speech & Degrees of Comparison) and Error Correction **Writing –** Punctuation and Spelling
Feb-2023	**V**	**Soft Skills –**Positive Attitude and Emotional Intelligence, Telephone Etiquette

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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**	**Speech**: Tryst with Destiny **Skills:** Greetings Introductions
Nov-2022	**II**	**Speech** 1. Yes, We Can **Interview** 2. A Leader Should Know How to Manage Failure **Skills** 3. Requests
Dec-2022	**III**	**Interview** 1. Nelson Mandela's Interview **Skills** 2. Asking and Giving Information 3. Agreeing and Disagreeing
Jan - 2023	**IV**	Interview 1. JRD Tata's Interview With T.N.Ninan **Skills** 2. Dialogue Building 3. Giving Instructions/Directions
Feb-2023	**V**	**Speech** 1. You've Got to Find What You Love Steve Jobs **Skills** 2. Debates 3. Descriptions 4. Role Play

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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

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DEPARTMENT OF HISTORY

SEMESTER – I

CURRICULAR PLAN

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

Month	Unit No.	Topic to be covered	Remarks
Nov-2021	**I**	Ancient Indian Civilization (from Circa 3000 BC to 6th BC):	
Dec-2021	**II**	Ancient Indian History & Culture (6th Century BC to 2nd Century AD):	
Jan - 2022	**III**	History & Culture of South India (2nd Century BC to 8 th Century AD):	
Feb-2022	**IV**	India from 3rd century AD to 8th century AD:	
Mar-2022	**V**	History and Culture of South India (9th century AD to 13th 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)

Month	Unit No.	Topic to be covered	Remarks
Nov-2021	**I**	Policies of Expansion	
Dec-2021	**II**	Social, Religious & Self-Respect Movements	
Jan-‘22	**III**	Causes for the growth of Nationalism	
Feb-‘22	**IV**	Freedom Struggle from 1920 to 1947:	
Mar-‘22	**V**	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)**

Month	Unit No.	Topic to be covered	Remarks
MAR-'23	**I**	Impact of Turkish Invasions	
APRIL-'23	**II**	Impact of Islam on Indian Society and Culture	
MAY-'23	**III**	Emergence of Mughal Empire	
JUN-23	**IV**	Administration, Economy, Society	
JULY-'23	**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
MAR-'23	**I**	1.1-Andhra through 16th& 19th Centuries AD:	
APRIL-'23	**II**	Andhra under British rule: Administration	
MAY-'23	**III**	Social Reform & New Literary Movements	
JUN-23	**IV**	Freedom movement in Andhra	
JULY-23	**V**	Movement for separate Andhra State	

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DEPARTMENT OF HISTORY

SEMESTER – IV

CURRICULAR PLAN

Subject Code: HIS402 Title: HISTORY OF MODERN WORLD (From 15th Cent. AD to 1945 AD)

MONTH	UNIT NO.	TOPIC TO BE COVERED	REMARKS
JUNE -'22	I	Transformation from Medieval to Modern Era	
JULY-'22	II	American Revolution (1776); French Revolution (1789)	
AUG-'22	III IV	Unification of Italy; Unification of Germany Communist Revolution in Russia	
SEP-'22	V	World War II: Causes Fascism & Nazism	

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DEPARTMENT OF HISTORY

SEMESTER – VI

CURRICULAR PLAN

Subject Code: secHIS601 Title: TOURISM AND HOSPITALITY SERVICES 6B

MONTH	UNIT NO.	TOPIC TO BE COVERED	REMARKS
MAR-'23	I	Tourism – Definition – Nature and Scope – History of Tourism–Types of Tourism – Domestic and International Tourism	
APRIL-'23	II	Relationship between history and tourism	
MAY-'23	III	Characteristics of Hospitality Industry – Inflexibility	
MAY-'23	IV	Duties, responsibilities & skills of front office staff – duties	
JUNE-'23	V	Different types of services offered in selected Hotels/Motels/Restaurants	

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DEPARTMENT OF ECONOMICS

SEMESTER – I

CURRICULAR PLAN

Subject Code: **ECOT11B** Title: **MICRO ECONOMIC ANALYSIS**

Month	Unit No.	Topic to be covered	Remarks
Nov-2022	**I**	Economic analysis and Methodology	
Dec-2022	**II**	Theory of Consumption	
Jan - 2023	**II** **III**	Theory of Consumption Theory of Production	
Feb-2023	**IV**	Theory of Exchange	
Mar-2023	**V**	Theory of Distribution	

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DEPARTMENT OF ECONOMICS

SEMESTER – III

CURRICULAR PLAN

Subject Code: **ECO 301C** Title : **DEVELOPMENT ECONOMICS**

Month	Unit No.	Topic to be covered	Remarks
Nov-2022	**I**	Economic Growth & Development	
Dec-2022	**I** **II**	Economic Growth & Development Modern Economic Growth	
Jan - 2023	**III**	Theories of Development and under development	
Feb-2023	**IV** **V**	Strategies of Economic development Institutions and Economic Development	
Mar-2023	**V**	Institutions and Economic Development	

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DEPARTMENT OF ECONOMICS

SEMESTER – III

CURRICULAR PLAN

Subject Code: F**M 301C** Title: **FINANCIAL MARKETS**

Month	Unit No.	Topic to be covered	Remarks
Nov-2022	**I**	Introduction	
Dec-2022	**I**	Introduction	
Jan - 2023	**II**	Money market	
Feb-2023	**III**	Capital Market	
Mar-2023	**III**	Capital Market	

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DEPARTMENT OF ECONOMICS

SEMESTER – V

CURRICULAR PLAN

Subject Code: ECO 501 Titles: **ECONOMIC DEVELOPMENT AND INDIAN ECONOMY**

Month	Unit No.	Topic to be covered	Remarks
Nov-2022	**I**	Concept of Economic Growth	
Dec-2022	**II**	Sustainable Development	
Jan - 2023	**III**	Basic Features of Indian Economy	
Feb-2023	**IV**	National Income in India	
Mar-2023	**V**	Economic Reforms	

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DEPARTMENT OF ECONOMICS

SEMESTER – V

CURRICULAR PLAN

Subject Code: ECO 502 Titles: **INDIAN AND ANDHRA PRADESH ECONOMY**

Month	Unit No.	Topic to be covered	Remarks
Nov-2022	**I**	Indian Agriculture	
Dec-2022	**II**	Structure and Growth of Indian Industry	
Jan - 2023	**III**	Disinvestment in India	
Feb-2023	**IV**	Planing in Indian Economy	
Mar-2023	**V**	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**

Month	Unit No.	Topic to be covered
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**

Month	Unit No.	Topic to be covered
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

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DEPARTMENT OF ECONOMICS

SEMESTER – IV

CURRICULAR PLAN

Subject Code: **ECO 402C** Title**: STATISTICAL METHODS FOR ECONOMICS**

Month	Unit No.	Topic to be covered
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**: AGRCULTURAL ECONOMICS**

Month	Unit No.	Topic to be covered
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**

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	

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DEPARTMENT OF POLITICAL SCIENCE

SEMESTER – III

CURRICULAR PLAN

Subject Code: POLT301C Title : **INDIAN GOVERMNET 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	

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DEPARTMENT OF POLITICAL SCIENCE

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	

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DEPARTMENT OF POLITICAL SCIENCE

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	

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DEPARTMENT OF POLITICAL SCIENCE

SEMESTER – II
CURRICULAR PLAN

Subject Code: polt21 Title**: Basic Organs of the Governments**

Month	**Unit No.**	**Topic to be covered**	**Remarks**
June -‘22	**I**	**Constitution**	
July-‘22	**II**	**Organs of Govt**	
Aug-‘22	**III** **IV**	**Forms of Govt** **Democracy**	
Sep-‘22	**V**	**Political parties Pressures group Public Opinion**	

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

MONTH	UNIT NO.	TOPIC TO BE COVERED	REMARKS
JUNE -'22	I	Federal processes	
JULY-'22	II	Electoral processes	
AUG-'22	III IV	Gross Route Democracy-Decentralization Indian political system	
SEP-'22	V	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

MONTH	UNIT NO.	TOPIC TO BE COVERED	REMARKS
JUNE -'22	I	Ancient Greek Political Thought	
JULY-'22	II	Medieval and Modern Political Thought	
AUG-'22	III IV	Contractual Political thought Utilitarian political thought	
SEP-'22	V	Marxist Political thought	

TEACHING PLAN 2022-2023

ENVIRONMENTAL STUDIES

Course Code: CLSC001

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

MONTH	Unit	Learning Units
JAN-22	I	**Unit 1: Environment and Natural Resources (8 Periods)** 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	**Unit 2 : Environmental degradation and Impacts (12 Periods)** 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.
MAR-22	III	**Unit 3: Conservation of Environment (10 Periods)** 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.,

MONTH	Unit	Learning Units
JAN-22	I	**Introduction – Definition, Importance, Process & Classifications of Value Education** 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& Acting Classification of Value Education: understanding Personal Values, Social Values, and Moral Values & Spiritual Values.
FEB-22	II	**Harmony in the Family–Understanding Values in Human Relationships** Understanding harmony in the Family-the basic unit of human interaction Understanding the set of proposals to verify the Harmony in the Family. Trust (*Vishwas*) and Respect (*Samman*) 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): *Samadhan*, *Samridhi*, *Abhay*, *Sah-astitva* as comprehensive Human Goals Visualizing universal harmonious order in society-Undivided Society (*AkhandSamaj*), Universal Order (*Sarvabhaum Vyawastha*)-from family to world family.
MAR-22	III	**Professional Ethics in Education** Understanding about Professional Integrity, Respect & 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. ✓ Depicting Loyalty towards Goals and objectives. Environment Laws: Environment Protection Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols. Environmental movements: Bishnois of Rajasthan, Chipko, Silent

ENVIRONMENTAL EDUCATION

Common for BA/B.Com/BSc Programmes

MONTH	Unit	Learning Units
JAN-22	I	**Unit 1: Environment and Natural Resources** 06 Hrs. 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.
FEB-22	II	**Unit-2: Environmental degradation and impacts** **12Hrs** 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.
MAR-22	III	**Unit 3: Conservation of Environment** **12 Hrs** 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.

TITLE OF THE PAPER: Fundamentals of Accounting

Semester: I **Course Code: COMT11B** **Syllabus**

MONTH	Unit	Learning Units
DEC-2022	I	**Introduction :**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	S**ubsidiary Books:** Types of Subsidiary Books - Cash Book, Three-column Cash Book- Petty Cash Book (including Problems).
FEB-2023	III	**Trial Balance and Rectification of Errors:** Preparation of Trial balance - Errors – Meaning – Types of Errors – Rectification of Errors – Suspense Account (including Problems)
Mar-2023	IV	**Bank Reconciliation Statement:** 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	**Final Accounts: Preparation of Final Accounts:** 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

MONTH	Unit	Learning Units
DEC-2021	I	**Introduction of Management Definition** - Management - functions of management - principles of management -levels of management- Trends and Challenges of Management in Global Scenario.
JAN - 2022	II	**Planning Nature and purpose of planning** - Planning process - Types of plans - Objectives - Managing by objective (MBO) Strategies - Types of strategies
FEB-2022	III	**Organizing** 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	**Motivation** Theories -Leadership Styles - Leadership theories - Communication - Barriers to effective communication.
APR-2022	V	**Controlling** 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	**Introduction Concepts of Business, Trade, Industry and Commerce:** 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	**Forms of Business Organizations:** 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-2022	III	C**ompany Incorporation:** 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	**Management:** Meaning Characteristics - Fayol's 14 Principles of Management - Administration Vs. Management - Levels of Management.
APR-2022	V	**Functions of Management:** Different Functions of Management - Meaning – Definition – Characteristics Merits and Demits 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	**Overview of Business Environment:** Business Environment – Meaning – Characteristics – Scope -Macro and Micro Dimensions of Business Environment -Environmental Analysis- Purpose &Techniques.
JAN - 2022	II	**Economic Environment:** 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	**Economic Policies:** Economic Reforms and New Economic Policy – New Industrial Policy – Competition Law – Fiscal Policy – Objectives and Limitations – Monetary Policy and RBI
Mar-2022	IV	**Social, Political and Legal Environment:** Concept of Social Responsibility of Business towards Stakeholders - Demonetization, GST and their Impact - Political Stability - Legal Changes.
APR-2022	V	**Global Environment:** 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	**Accounting for Non Profit Organizations**: 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	**Single Entry System:** 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	**Hire Purchase System:** 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	**Partnership Accounts-I:** Meaning – Partnership Deed - Fixed and Fluctuating Capitals-Accounting Treatment of Goodwill - Admission and Retirement of a Partner (including problems).
APR-2022	V	**Partnership Accounts-II:** 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	**Introduction to Statistics:** Definition, Importance and limitation of statistics, Collection of data, Schedule and questionnaire, Frequency distribution, Tabulation
JAN - 2022	II	**Measures of Central Tendency:** Characteristics of measures of central tendency, Types of Averages, Arithmetic Mean, Geometric Mean, Harmonic Mean, Median, Mode
FEB-2022	III	**Measures of dispersion and Skewness:** 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	**Measures of Relation:** 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	**Analysis of Time Series & Index Numbers** 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	**Introduction**: Concepts of Marketing: Need, Wants and Demand - Marketing Concepts – Marketing Mix - 4 P's of Marketing – Marketing Environment.
JAN - 2022	II	**Consumer Behavior and Market Segmentation**: Buying Decision Process – Stages – Buying Behavior – Market Segmentation –Bases of Segmentation - Selecting Segments – Advantages of Segmentation
FEB-2022	III	**Product Management:** Product Classification – Levels of Product - Product Life Cycle - New Products, Product Mix and Product Line Decisions - Design, Branding, Packaging and Labelling.
Mar-2022	IV	**Pricing Decision**: Factors Influencing Price – Determination of Price - Pricing Strategies: Skimming and Penetration Pricing.
APR-2022	V	**Promotion and Distribution:** 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

MONTH	Unit	Learning Units
DEC-2021	I	**Introduction, Nature and Scope** 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	**Environmental and Technical support Aspects** 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	**Security and Legal Aspects** 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	**Operational Services of e Commerce** 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	**E payment System** 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 CodeCOMT 35S

Syllabus ONLINE BUSINESS

MONTH	Unit	Learning Units
DEC-2021 JAN - 2022	I	Introduction to Online-Business-Definition-Characteristics-Advantages of Online Business-Challenges- Differences between off-line business, e-commerce and Online Business.
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

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 Corporate Accounting

Semester: V / VI

Syllabus: ADVANCED CORPORATE ACCOUNTING

Paper code: CACA-501 G/C

MONTH	Unit	Learning Units
DEC-2021	I	**Purchase of Business** Meaning - Purchase Consideration - Methods for determining Purchase Consideration-Discharge of Purchase Consideration-Accounting Treatment.
JAN - 2022	II	**Amalgamation of Companies** Meaning and Objectives - Provisions for Amalgamation of Companies as per Accounting Standard 14 - Accounting Treatment.
FEB-2022	III	**Internal Reconstruction of Companies** Meaning - Forms of Internal Reconstruction - Alteration of Share Capital and Reduction of Share Capital- Accounting Treatment.
Mar-2022	IV	**Accounts of Holding Companies** Meaning of Holding Companies and Subsidiary companies- Consolidated Financial Statements- Legal requirements on Consolidation-Calculation of Minority Interest- Accounting Treatment.
APR-2022	V	**Liquidation** 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

MONTH	Unit	Learning Units
DEC-2021	I	**Computerized Accounting** Microsoft Excel Spread Sheet- Functions in Excel- Preparation of Accounts, Statements and Budgets using MS Excel- Analysis and Interpretation.
JAN - 2022	II	**Introduction to Leading Accounting Soft wares** – Busy - Marg – Quick Books - Zoho Books -Tally- Features and Accounting.
FEB-2022	III	**Tally ERP-9 - Company Creation** – Tally Startup Screen- Gateway of Tally- Create a Company - Alter & Delete company- Backup and Restore- Security Features in Tally.
Mar-2022	IV	**Tally- Accounting Masters**- Groups- Create Ledgers- Alter& Delete - Inventory Masters- Creating Stock Groups - Stock Items- Unit of Measurement- Alter & Delete.
APR-2022	V	**Tally-Voucher Entry** – 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

MONTH	Unit	Learning Units
DEC-2021	I	**Introduction, Nature and Scope** 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	**Strategies of Advertisements** 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	**Process of Advertisement** 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	**Media Planning** 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	**Analysis of Market Media** 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

MONTH	Unit	Learning Units
DEC-2021	I	**Introduction to Sales Promotion:** 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	**Sales Promotion and Product Life Cycle:** 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	**Strategies and Promotion Campaign:** 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	**Salesmanship and Sales Operations**: 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	**Sales force Management and Designing:** 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

MONTH	Unit	Learning Units
DEC-2021	I	**Introduction** 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	**Web site planning and creation** Web Site: meaning – objectives – components of website - website creation – incorporation of design and– adding content, installing and activating plugins.
FEB-2022	III	**Search Engine Optimization (SEO)** 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	**Social Media Marketing**: 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	**Email marketing**: 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

MONTH	Unit	Learning Units
DEC-2021	I	**Introduction: Nature and Scope of services** 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	**Consumer Behavior in Services Marketing** 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	**Customer Relationship marketing and Services Market Segmentation.** 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	**Customer Defined Service Standards.** 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	**Service Development and Quality Improvement.** 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.

AG & SG Siddhartha Degree College of Arts & Science, Vuyyuru-521165

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 subgropus,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:	Homomarphism,Kernal 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)
OCT-22	Unit-I:	Multiple Integrals-I
NOV-22	Unit-II	Multiple Integrals-II
DEC-22	Unit-III:	Vector Differentiation : Gradient,Divergent,Curl Operators of Vectors
JAN-23	Unit-IV:	Vector Integration: Line Integral, Surface Integral, Volume Integral Unit with examples
JAN-23	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)
OCT-22	Unit - I :	Applications of Laplace Transforms of D.E with Constant coefficients
NOV-22	Unit - II :	Applications of Laplace Transforms of solutions D.E - II
DEC-22	Unit - III :	Applications of Laplace Transforms to Integral Equations
JAN-23	Unit - IV :	Fourier Series - I
JAN-23	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)
MARCH-23	Unit-I :	Real Numbers, Sequences bounded sequences, the cauchy's criterion, bolzano- theorem ,cauchey'sgeneral principle of convergence theorem
APRIL-23	Unit-II:	Infinite Series: p-test, cauchy's nth Root test, Ratio test ,Leibnitz test
JUNE-23	Unit-III :	Limits and Cntinuity, Left and Right hand limits
JUNE-23	Unit-IV:	Differentiation And Mean Value Theorm,Role's Theorem, Cauchy's Mean Value Theorem.
JULY-23	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)
MARCH-23	Unit IV:	Matrices, Linear System of Equations
APRIL-23	Unit IV: Unit V:	Characteristic roots and vectors of a square matrices. Inner Product Spaces.
MAY-23	Unit I: Unit II:	Vector Space I, Vector Subspaces, LD and LID Vector Space II,
JUNE-23	Unit II: Unit III:	Vector Space II, Basis and Dimensions Linear Transformations
JULY-23	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)
MARCH-23	Unit-I	The Plane
APRIL-23	Unit-II	The Line
MAY-23	Unit-III	Sphere
JUNE-23	Unit-Iv	cone
JULY-23	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)
MARCH-23	Unit-I:	Multiple Integrals-I
APRIL-23	Unit-II	Multiple Integrals-II
MAY-23	Unit-III:	Vector Differentiation :Gradient,Divergent,Curl Operators of Vectors
JUNE-23	Unit-IV:	Vector Intigration:Line Integral,Surface Integral,Volume Integral Unit with examples
JUNE-23	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 & MCCS
Paper Title: Integral Transforms with Applications
Course Code: SECMAT502
Academic Year: 2022-23

Month	Units	Planned (Unit No. & Chapter Title)
MARCH-23	Unit - I :	Applications of Laplace Transforms of D.E with Constant coefficients
APRIL-23	Unit - II	Applications of Laplace Transforms of solutions D.E - II
MAY-23	Unit - III :	Applications of Laplace Transforms to Integral Equations
JUNE-23	Unit - IV :	Fourier Series - I
JUNE-23	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)
Oct-22	Unit - I :	Data Interpretations
Nov-22	Unit - II	Verbal Reasoning & Arithmetic Ability
Dec-22	Unit - III :	Quantitative Aptitude & Business Computations

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

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

Month	Planned (Unit No. & Chapter Title)	Remarks
Nov-21	Unit-I : Moments, central and non-central, Inter-relationships, Shippard's corrections, Skewness, karl pearson's, Bowley's formule, Kurtosis, problems.	
Dec-21	Unit-II : Probability-I, Definitions, Addition of probabilities two and n events, Boole's inequality, problems.	
Jan-22	Unit-III : Probability-II, Conditional probability, dependent and independence events, multiplication law of probability two and n events, Baye's theorem, problems.	
Feb-22	Unit-IV : Random Variables, Definitions, Types, Bivariate random variables, Types, Distribution function and properties, problems.	
Mar-22	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)

NAME OF THE DEPARTMENT : Statistics

Academic Year : 2021-2022

Paper Title : Probability Distributions and Statistical Methods

Class: I MSCs

Course Code: STAT21C

Month	Planned (Unit No. & Chapter Title)	Remarks
May-22	Unit-I : Theoretical Probability Discrete Distributions, Rectangular, Binomial, Poisson, Negative Binomial, Geometric, Hyper Geometric Distributions, problems.	
Jun-22	Unit-II : Theoretical Probability Continuous Distributions, Rectangular, Normal, Exponential, Gamma, Beta Distributions.	
Jul-22	Unit-IV : Correlation, Types, Karl pearson's, Rank correlation, Bi-variate frequency distribution. Multipe and Partial correlations, properties, multiple determination, problems.	
Aug-22	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.	
Sep-22	Unit-III :Theory of Attributes, Definitions, Consistency of data, Independence of attributes, Yule's coefficient of association and colligation, 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 : 2022-2023 III

Paper Title : Statistical Inference II MSCs

STAT31C

Month	Planned (Unit No. & Chapter Title)	Remarks
Oct-22	Unit-I : Exact Sampling Distributions, Definitions.	
Nov-22	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.	
Dec-22	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.	
Jan-23	Unit-IV : Small sample tests-I, t-test one,two,paired samples,F-test, problems.	
Feb-23	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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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 IV

Paper Title : Sampling Techniques and Design of Experiments II MSCs

STAT41B

Month	Planned (Unit No. & Chapter Title)	Remarks
Mar-23	Unit-I : Introductory Concepts of Sampling, Basic Principles, Definitions. Simple Random sampling, Definitions, Procedure, Mean, Variance, Advantages and Disadvantages.	
Apr-23	Unit-II : Stratified Random sampling, Advantages and Disadvantages, Types of Allocation, Mean and Variance, Comparison b/w proportional and optimum with srswor.	
May-23	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.	
Jun-23	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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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 IV

Paper Title : Applied Statistics II MSCs

STAT01

Month	Planned (Unit No. & Chapter Title)	Remarks
Mar-23	Unit-I : Index Numbers, Basic problems,Construction of index numbers, Criteria of good index number, Cost of living, Uses and limitations, problems.	
Apr-23	Unit-II : Statistical Quality Control-I, Basics of SQC, Xbar and R charts, 3sigma limits, Interpretation, Uses, problems.	
May-23	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.	
Jun-23	Unit-IV : Vital Statistics, Definition, Uses, Sources, Mortality and Fertility rates, Life tables, Reproduction rates, 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 : 2021-2022 | 2022-2023 | I

Paper Title : Descriptive Statistics and Theory of Probability | I MSCs

STAT11B

Month	Planned (Unit No. & Chapter Title)	Remarks
Oct-22	Unit-I : Moments, central and non-central, Inter-relationships, Shippard's corrections, Skewness, karl pearson's, Bowley's formule, Kurtosis, problems.	
Nov-22	Unit-II : Probability-I, Definitions, Addition of probabilities two and n events, Boole's inequality, problems.	
Dec-22	Unit-III : Probability-II, Conditional probability, dependent and independence events, multiplication law of probability two and n events, Baye's theorem, problems.	
Jan-23	Unit-IV : Random Variables, Definitions, Types, Bivariate random variables, Types, Distribution function and properties, problems.	
Feb-23	Unit-V : Mathematical Expectations, Properties, Cauchy-Schwartz inequality, m.g.f, c.g.f, p.g.f, c.f, Chebyshev's inequality, wlln, 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 : 2022-23	2022-2023	II
Paper Title :	Probability Distributions and Statistical Methods	I MSCs
		STAT21C

Month	Planned (Unit No. & Chapter Title)	Remarks
Mar-23	Unit-I : Theoretical Probability Discrete Distributions, Rectangular, Binomial, Poisson, Negative Binomial, Geometric, Hyper Geometric Distributions, problems.	
Apr-23	Unit-II : Theoretical Probability Continuous Distributions, Rectangular, Normal, Exponential, Gamma, Beta Distributions.	
May-23	Unit-IV : Correlation, Types, Karl pearson's, Rank correlation, Bi-variate frequency distribution. Multipe and Partial correlations, properties, multiple determination, problems.	
Jun-23	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, VUYYURU

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	**1. Mechanics of Particles** 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- **2. Mechanics of Rigid bodies** 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
NOV - 2022	II	**3. Motion in a Central Force Field** 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).
DEC-2022	III	**Frames of reference and transformations** 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
JAN-2023	IV	**5. Undamped, Damped and Forced oscillations:** 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. **6. Coupled oscillations:** Coupled oscillators-Introduction, Two coupled oscillators, N-coupled oscillators and wave equation.
FEB-23	V	**7. Vibrating Strings:** 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. **8. Ultrasonics:** Ultrasonics, General Properties of ultrasonic waves, Production of ultrasonics by piezoelectric and magnetostriction methods, Detection of ultrasonics, Applications of ultrasonic waves, Ultrasonic interferometer.

SEMESTER – II

TEACHING PLAN

Subject Code : **PHYT21C** Title**: WAVE OPTICS**

Month	Unit No.	Topic to be covered
MAR -'23	I II	**1. Aberrations:** 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. **2. Interference : Division of wavefront:** 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.
APR-'23	III	**3. Division of Amplitude:** 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.
MAY-'23	IV	**4. Diffraction:**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.
JUN-'23	V	**5. Polarisation :** 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. **6. Lasers and Holography:** 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

SEMESTER – III

2022-2023 TEACHNIG PLAN

Subject Code: **PHYT31A** Title: ***HEAT AND* THERMODYNAMICS**

Month	Unit No.	Topic to be covered
NOV-2022	I	**1.Kinetic theory of gases:** Introduction –Deduction of Maxwell's law of distribution of molecular speeds, Transport phenomena-Viscosity of gases-thermal conductivity-diffusion of gases.
DEC-2022	II	**2. Thermodynamics:** 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.
JAN-2023	III	**3. Thermodynamic potentials and Maxwell's equations:** 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	**4. Low temperature Physics:** 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	**5. Quantum theory of radiation:** 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	**1.Electrostatics** 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 . **2.Dielectrics** Electric dipolement and molecular polarizability- Electric displacement D, electric polarization P – relation between D, E, and P- Dielectric constant, susceptibility .
APR - 2023	II	**3. Electric and magnetic field** 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. **4.Electromagneticinduction** 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. Tansformer- energy losses and efficiency.
MAY-2023	III	**5.Alternating current and electro magnetic waves** **A**lternating 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. **6.Maxwell's equations** **I**dea 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.
JUN-2023	IV	**7.Basic electronics:** PN junction diode Zener diode ,I-V characteristics, PNP and NPN Transistors, CB,CE and CC configuration Relation between α β and Γ transistors (CE) characteristics,Transistor as an amplifier.
JUN-23	V	**Digital electronics:** 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 – IV

2022-2023 TEACHING PLAN

Subject Code: PHYT01 Title : MODERN PHYSICS

MAR-2023	I	**1. Atomic and molecular physics** 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 . Quamtum theory of Raman effect. Experimental arrangement – Applications of Raman effect.
APR - 2023	II	**2. Matter waves & Uncertainty Principle** 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	**3.Quantum (wave) mechanics** 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	**4.General properties of Nuclei** Basic ideas of nucleus – size,mass,charge density(matter energy), binding energy,angular momemtum, parity, magnetic moment, electric quadrupole moments.Liquid drop model and shell model (qualitative aspects only)-Magic numbers. **5. Radioactivity decay** Alpha decay : basis of α – decay processes. Range of α-particles , Geiger"s Law,Geiger- Nuttal law. β – decay, β ray continuous and discrete spectrum, neutrino hypothesis.
JUN-23	V	**6.Crystal structure** 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. **7. Superconductivity:** 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	**I INTRODUCTION TO PASSIVE ELEMENTS** (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 circui
Jan - 2023	II	**Power Sources (Batteries)** (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	**Alternating Currents (10 hrs**) 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	**Power Supplies (Skill Based**) (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	**Applications of Electromagnetic Induction** (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	. **INTRODUCTION TO INSTRUMENTS** (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, 3½display and 4½ display Digital multimeters, Basic ideas on Function generator
Jan - 2023	II	**OSCILLOSCOPE** (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	**TRANSDUCERS** (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	**DISPLAY INSTRUMENTS** (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	**BIOMEDICAL INSTRUMENTS** (10 hrs) Basic operating principles and uses of (i) Clinical thermometer (ii) Stethescope (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	**I INTRODUCTION TO PASSIVE ELEMENTS** (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 circui
APR - 2023	II	**Power Sources (Batteries)** (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	**Alternating Currents (10 hrs**) 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	**Power Supplies (Skill Based**) (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	**Applications of Electromagnetic Induction** (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	. **INTRODUCTION TO INSTRUMENTS** (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, 3½display and 4½ display Digital multimeters, Basic ideas on Function generator
APR - 2023	II	**OSCILLOSCOPE** (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	**TRANSDUCERS** (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	**DISPLAY INSTRUMENTS** (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	**BIOMEDICAL INSTRUMENTS** (10 hrs) Basic operating principles and uses of (i) Clinical thermometer (ii) Stethescope (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:**CHETIIA** Title: Inorganic and Physical chemistry

Month	**Unit No.**	**Topic to be covered**
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**

Month	**Unit No.**	**Topic to be covered**
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

Month	Unit No.	Topic to be covered
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

Month	Unit No.	Topic to be covered
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

Month	**Unit No.**	**Topic to be covered**
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	**General Fundamentals:** Introduction to computers: Block diagram of a computer, characteristics and limitations of computers, applications of computers, types of computers, computer generations. **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
Dec- 2022	II III	**Introduction to C:** 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. **Decision Control and Looping Statements**: Introduction to Decision Control Statements– Conditional BranchingStatements – Iterative Statements – Nested Loops – Break and Continue Statement – goto Statement.
Jan-2023	III IV	**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. **Functions:**Introduction – using functions – Function declaration/ prototype – Function definition – function call – return statement –Passing parameters – Scope of variables – Storage Classes – Recursive functions.**Structure, Union, and Enumerated Data Types:** Introduction – Nested Structures – Arrays of Structures – Structuresand Functions– Union – Arrays of Unions Variables – Unions inside Structures – Enumerated Data Types.

Feb-2023	V	**Pointers:** 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 **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.

SEMESTER – I

CURRICULAR PLAN

Title: INFORMATION TECHNOLOGY Subject Code: **CSBT11A**

Section: B.Com (CA)

Month	Unit No.	Topic to be covered
Nov2022	I	**INTRODUCTION:** Introduction to the Computer Generation of computers, over view of computer System, input & Output devices. Hardware: Basic components of a computer system- Control unit– ALU- Input/output functions.Memory – RAM – ROM – EPROM - PROM and Other types of memory
Dec- 2022	II III	**OPERATING SYSTEM(OS):** Meaning Definition & functions , DOS-commands, windows start button, control panel **SOFTWARE**: 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
Jan-2023	IV	**DATA COMMUNICATION**: Telecommunication and Networks Communication media& 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.
Feb-2023	V	**NEW TECHNOLOGIES** 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.

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	**MS-WORD:** 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	**MS-POWER POINT**: 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 **MS-Excel :** 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	MS Access: 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	Finding, Sorting and Displaying Data: 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	**Introduction to Data Structures:** 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. **Principles of Programming and Analysis of Algorithms:** Software Engineering, Program Design, Algorithms, Different Approaches to Designing an Algorithm, Complexity, Big 'O' Notation, Algorithm Analysis, Recursion.
July-'22	II III	**Linked Lists:** 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 **Stacks:** 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 **Queues:** Introduction, Queue as an Abstract data Type, Representation of Queues, Circular Queues, Double Ended Queues-De-ques, Priority Queues, Application of Queues
Aug-'22	IV	**Binary Trees:** 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
Sep-'22	V	**Searching and sorting:** Sorting – An Introduction, Bubble Sort, Insertion Sort, Merge Sort, searching – An Introduction, Linear or Sequential Search, Binary Search, Indexed Sequential Search **Graphs:** 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.

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	**Introduction E-Commerce:** Definition of E Commerce and its advantages & disadvantages**,** Electronic Data Interchange (EDI) ,E-Commerce transactional issues and challenges Difference between Commerce and E-Commerce **Business Models for Ecommerce** B2C -Business to consumer.B2B – Business to business,C2B – Consumer to business. C2C – Consumer to consumer
July-'22	II III	**E-Marketing &E – CRM& Electronic Payment Systems** **Online Marketing:** Traditional Vs. E-Marketing Online Marketing ,E-Advertising, Internet marketing **E – CRM:** 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 **Electronic Payment Systems:** 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	**Introduction to WIX Editor** 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	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.
July-'22	II III	**Introduction To C & Decision Making control Statements** 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. **Arrays** 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.
Aug-'22	IV	**Functions & Structures** **Functions:** Introduction – using functions – Function declaration/ prototype – Function definition – function call – return statement – Passing parameters – Scope of variables – Storage Classes – Recursive functions. **Structure, Union, and Enumerated Data Types**: Introduction – Nested Structures – Arrays of Structures – Structures and Functions– Union – Arrays of Unions Variables – Unions inside Structures – Enumerated Data Types.
Sep-'22	V	**Pointes & Files** 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.

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	**Database Concepts-A Relational approach**: Database - Relationships - DBMS - Relational data model - Integrity rules - Theoretical relational languages. **Database Design**: Data mode -Dependency - Database design - Normal forms -Dependency diagrams – Demoralization
Dec- 2022	II III	**Structured Query Language (SQL):** 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 **Working with tables**: 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. **Functions and Grouping**: Built-infunctions - Grouping data. **Joins and Views**: Join - join types-**Views:** Views - Creating a view - Removing a view - Altering a view.
Jan-2023	IV	**PL/SQL:** Fundamentals - Block structure - comments - Data types – Other data types - Variable declaration - Assignment operation - Bind variables - Substitution variables - Printing. **Control Structures and Embedded SQL**: Control structures - Nested blocks - SQL in PL/SQL - Data manipulation - Transaction control statements
Feb 23	V	**PL/SQL Cursors and Exceptions**: 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 -Functions – 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	**INTRODUCTION TO C LANGUAGE, VARIABLES, DATA TYPES** 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 ().
Dec- 2022	II III	**Operators:** Operator and its types in C - Arithmetic, Relational, Equality, Logical, Unary, Conditional,Bitwise, Assignment, Comma, Size of. **WORKING WITH CONTROL STATEMENTS, LOOPS:** 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
Jan-2023	IV	**STRINGS:** Introduction to strings and string handling functions **Structures & Unions:** 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	**OBJECT ORIENTED CONCEPTS USING C++** Introduction to Object Oriented Programming, Object Oriented Concepts, Class-Object-Inheritance-Polymorphism- Encapsulation-Abstraction, Structure of C++ program, Differences between C & CPP, Input and output statements in CPP. **Operators & Data types:** Operators in CPP, Data types in CPP, OperatorOverloading

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	**General Fundamentals:** Introduction to computers: Block diagram of a computer, characteristics and limitations of computers, applications of computers, types of computers, computer generations. **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.
Dec- 2022	II III	**Introduction to C:** 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. **Decision Control and Looping Statements**: Introduction to Decision Control Statements– Conditional BranchingStatements – Iterative Statements – Nested Loops – Break and Continue Statement – goto Statement. **Arrays**: 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 andstrings.
Jan-2023	IV	**Structures & Unions:** 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	**Pointers:** 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 **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.

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	**Fundamentals Of Object – Oriented Programming:** Introduction, Object Oriented paradigm, Basic Concepts of OOP, Benefits of OOP, Applications of OOP, Java features **Overview Of Java Language:** Introduction, Simple Java program structure, Java tokens, Java Statements, Implementing a Java Program, Java Virtual Machine, Command line arguments **Constants, Variables & Data types:** 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 **Operators & Expressions**
Apr-2022	II	**Decision Making & Branching:** 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. **Looping:** Introduction, The While statement, The do-while statement, The for statement, Jumps in loops. **Classes, Objects & Methods:** Introduction, Defining a class, Adding variables, Adding methods, Creating objects, Accessing class members, Constructors, Method overloading, Static members, Nesting of methods.
May'22	III	**Inheritance:** Extending a class, Overloading methods, Final variables and methods, Final classes, Abstract methods and classes. **Arrays, Strings:** Arrays, One-dimensional arrays, Creating an array, Two – dimensional arrays, Strings, Wrapper classes. **Interfaces:** MULTIPLE INHERITANCE: Introduction, Defining interfaces, Extending interfaces, Implementing interfaces, Assessing interface variables.
June-'22	IV	**Multithreaded Programming:** 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. **Managing Errors And Exceptions:** Types of errors, Compile-time errors, Run-time errors, Exceptions, Exception handling, Multiple Catch Statements, Using finally statement.

		Packages: Introduction, Java API Packages, Creating Packages, Accessing a Package, Using a Package.
July 22	V	**Applet Programming:** 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. **Managing Input /Output Files In Java:** Introduction, Concept of Streams, Stream classes, Byte Stream Classes, Character Stream classes: Reader stream classes, Writer Stream classes, Reading and writing files. **Java Database Connectivity:** 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	**Operating System**: 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	**Process and CPU Scheduling** – 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	**Memory Management and Virtual Memory** – 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	**File System Interface** – 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.

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.

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	**Fundamentals of Object – Oriented Programming:** Introduction, Object Oriented paradigm, Basic Concepts of OOP, Benefits of OOP, Applications of OOP, Java features:
Apr-2022	II	**Overview of Java Language**: Introduction, Simple Java program structure, Java tokens, Java Statements, Implementing a Java Program, Java Virtual Machine, Command line arguments. **Constants, Variables & Data Types:** Introduction, Constants, Variables, Data Types, Declaration of Variables, Giving Value to Variables, Scope of variables, Type casting, Getting Value of Variables, **Operators.**
May'22	III	**Decision Making & Branching:** 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. **Looping**: Introduction, while statement, do-while statement, for statement, Jumps in loops.
June-'22	IV	**Classes, Objects & Methods**: 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	**Inheritance**: Extending a Class, Overriding Methods, Final Variables and Methods, Final Classes, Abstract Methods and Classes; **Arrays, Strings And Vectors:** Arrays, One-dimensional arrays, Creating an array, Two – dimensional arrays, Strings, Vectors, Wrapper classes; **Interfaces**: **Multiple Inheritance**: 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)

Month	Unit No.	Topic to be covered
Mar-2022	I	**Fundamentals of Object – Oriented Programming:** Introduction, Object Oriented paradigm, Basic Concepts of OOP, Benefits of OOP, Applications of OOP, Java features:
Apr-2022	II	**Overview of Java Language**: Introduction, Simple Java program structure, Java tokens, Java Statements, Implementing a Java Program, Java Virtual Machine, Command line arguments. **Constants, Variables & Data Types:** Introduction, Constants, Variables, Data Types, Declaration of Variables, Giving Value to Variables, Scope of variables, Type casting, Getting Value of Variables, **Operators.**
May'22	III	**Decision Making & Branching:** 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. **Looping**: Introduction, while statement, do-while statement, for statement, Jumps in loops.
June-'22	IV	**Classes, Objects & Methods**: 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	**Inheritance**: Extending a Class, Overriding Methods, Final Variables and Methods, Final Classes, Abstract Methods and Classes; **Arrays, Strings And Vectors:** Arrays, One-dimensional arrays, Creating an array, Two – dimensional arrays, Strings, Vectors, Wrapper classes; **Interfaces**: **Multiple Inheritance**: Introduction, Defining interfaces, Extending interfaces, Implementing interfaces, Assessing interface variables;

SEMESTER – IV

CURRICULAR PLAN

Title: DATA BASE MANAGEMENT SYSTEMS **Subject Code:** ECCSCT42

Month	Unit No.	Topic to be covered
Mar-2022	I	**Database Systems Introduction** *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.
Apr-2022	II	**Relational Database & Data Modelling** *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 Modelling:* The Extended Entity Relationship Model, Entity clustering.
May'22	III	**Normalization and Database Design** *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
June-'22	IV	**Structured Query Language** *Introduction to SQL:* Data Definition Commands, Data Manipulation Commands, Select queries, Advanced Data Definition Commands, Advanced Select queries, Virtual Tables, SQL Join Operators,
July 22	V	**Procedural SQL** *Introduction to PL/SQL :* Triggers, Stored Procedures, Pl/ SQL Stored Functions

DEPARTMENT OF COMPUTER SCIENCE

SEMESTER – V

CURRICULAR PLAN

Title: WEB INTERFACE DESIGNING TCHNOLOGIES Subject Code: SECCSCT01

SECTIONS: BSc (MPCS, MCCS)

Month	Unit No.	Topic to be covered
Nov 2023	I	**Web Designing, HTML** **Web Designing:** Introduction To Web Designing, Difference Between WebApplications And Desktop Applications. **HTML:** 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	**CSS, HTML API'S** **CSS**: 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.**HTML API'S:** Geolocation, Drag/drop, local storage, HTML SSE
Jan-2023	III	**Client side Validation:** Introduction to JavaScript: What Is DHTML?, JavaScript Basics,Variables,StringManipulations,MathematicalFunctions,Statements,Operators,Arrays, Functions .Objects in JavaScript –Data and Objects In JavaScript, Regular Expressions, Exception Handling. DHTML with JavaScript :Data Validation, Opening aNew Window, Messages and Confirmations, The Status Bar, Different Frames, Rollover Buttons, Moving Images
Jan-2023	IV	**XML:** 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	**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, 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	**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. **Working with Functions:** What is ıction? ,Calling functions, Functions, Returning the values from User-DefinedFunctions, Variable Scope.
Dec- 2022	II III	**Working with Arrays:** What are Arrays?, Creating Arrays, **Working with Objects** Creating Objects, Object Inheritance, **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. **Working with Forms-**Creating Forms, Accessing Form Input with User defined Arrays, Combining HTML and PHP code on a single Page, **Working with Cookies and User Sessions-**Introducing Cookies, Setting a Cookie with PHP, Session Function Overview, Starting a Session, Working with session variables
Jan-2023	IV	**Working with Files and Directories:** Creating and Deleting Files, Opening a File for Writing, Reading or Appending, Reading from File, Writing or Appending to a File. **Working with Images** -Understanding the Image-Creation Process, Drawing a New Image ,Modifying Existing Images ,Image Creation from User Input.
Feb-2023	V	**Interacting with MySQL using PHP** -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.

DEPARTMENT OF COMPUTER SCIENCE

SEMESTER – VI

CURRICULAR PLAN

Title: WEB INTERFACE DESIGNING TCHNOLOGIES Subject Code: SECCSCT01

SECTIONS: BSc (MPCS)

Month	Unit No.	Topic to be covered
MAR 2023	I	**Web Designing, HTML** **Web Designing:** Introduction To Web Designing, Difference Between WebApplications And Desktop Applications. **HTML:** 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	**CSS, HTML API'S** **CSS**: 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.**HTML API'S:** Geolocation, Drag/drop, local storage, HTML SSE **Client side Validation:** Introduction to JavaScript: What Is DHTML?, JavaScript Basics,Variables,StringManipulations,MathematicalFunctions,Statements,Operators,Arrays, Functions .Objects in JavaScript –Data and Objects In JavaScript, Regular Expressions, Exception Handling. DHTML with JavaScript :Data Validation, Opening aNew Window, Messages and Confirmations, The Status Bar, Different Frames, Rollover Buttons, Moving Images
MAY -2023	IV	**XML:** 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.
JUNE 2023	V	**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, textformatting 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	**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. **Working with Functions:** What is nction? ,Calling functions, Functions, Returning the values from User-DefinedFunctions, Variable Scope.
APR 2023	II	**Working with Arrays:** What are Arrays?, Creating Arrays, **Working with Objects** Creating Objects, Object Inheritance, **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.
	III	**Working with Forms**-Creating Forms, Accessing Form Input with User defined Arrays, Combining HTML and PHP code on a single Page, **Working with Cookies and User Sessions**-Introducing Cookies, Setting a Cookie with PHP, Session Function Overview, Starting a Session, Working with session variables
MAY 2023	IV	**Working with Files and Directories:** Creating and Deleting Files, Opening a File for Writing, Reading or Appending, Reading from File, Writing or Appending to a File. **Working with Images -**Understanding the Image-Creation Process, Drawing a New Image ,Modifying Existing Images ,Image Creation from User Input.
JUNE 2023	V	**Interacting with MySQL using PHP -**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.

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	**Introduction to Big data:** 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	**Big data Analytics:** What is and isn't big data analytics? Classification of analytics, Importance of big data analytics, Technologies needed to meet challengesof big data, data science, Data scientist **Introduction to R and getting started with R:** What is R? Why R? Advantages ofR over other programming languages**,** Data types in R - logical, numeric, integer, character, double, Complex, raw, coercion, ls () command, Expressions, Variables and functions, control structures, Array, Matrix, Vectors, Factors, R packages
MAY 2023	IV	**Exploring data in R**– 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	**Data Visualization using R**: 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	**INTRODUCTION TODATA SCIENCE** 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	**INTRODUCTION TO PYTHON** 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 **STRINGS AND DATA STRUCTURES** 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	**FUNCTIONSANDMODULES** 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
JUNE 2023	V	**PANDAS** 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

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

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	**Origin of life and viruses** 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.
Dec- 2022	II III	**Special groups of Bacteria and Eubacteria** Brief account of Archaebacteria, 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 andindustry (fermentation and medicine). A general account on symptoms of plant diseases caused by Bacteria; Citrus canker.
Jan-2023	III IV	**Fungi & Lichens** General characteristics of fungi and Ainsworth classification (up to classes).Structure, reproduction and life history of (a)*Rhizopus* (Zygomycota)and(b)*Puccinia* (Basidiomycota). Economic uses of fungi in food industry, pharmacy and agriculture. A general account on symptoms of plant diseases caused by Fungi; Bla Rice. Lichens- structure and reproduction; ecological and economic importance.
Feb-2023	IV V	**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)*Spirogyra* (Chlorophyceae) and (b) *Polysiphonia*(Rhodophyceae). Economic importance of Algae.
Nov2022	I	**Bryophytes** General characteristics of Bryophytes; classification up to classes. Occurrence, morphology, anatomy, reproduction (developmental details are not needed) and life cycle of (a) *Marchantia*(Hepaticopsida) and (b) *Funaria*(Bryopsida). General account on evolution of sporophytes in Bryophyta.

SEMESTER II Basics of Vascular plants and Phytogeography BOT 201 C

Month	Unit No.	Topic to be covered
June - '22	I	**Pteridophytes** General characteristics of Pteridophyta; classification of Smith (1955) upto divisions. Occurrence, morphology, anatomy, reproduction (developmental details are not needed) and life history of (a) *Lycopodium* (Lycopsida) and (b) *Marsilea* (Filicopsida). Stelar evolution in Pteridophytes Heterospory and seed habit.
July- '22	II	**Gymnosperms** General characteristics of Gymnosperms; Sporne classification upto classes. Occurrence, morphology, anatomy, reproduction (developmentaldetails are not needed) and life history of (a) *Cycas (Cycadopsida)* and (b) *Gnetum* (Gnetopsida). Outlines of geological time scale. A brief account on Cycadeoidea
Aug- '22	III IV	**Basic aspects of Taxonomy** 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) Curcurbitaceae
Sep- '22	V	**Systematic Taxonomy** 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).
June - '22	I	**Phytogeography** 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 Anatomy and Embryology of Angiosperms, Plant Ecology and Biodiversity

Month	Unit No.	Topic to be covered
Nov 2022	I	**Anatomy of Angiosperms** Organization of apical meristems: Tunica-carpus theory and Histogen theory. Tissue systems–Epidermal, ground and vascular. Anomalous secondary growth in *Boerhaavia* and *Dracaena.* Study of timbers of economic importance - Teak, Red sanders and Rosewood.
Dec- 2022	II	**Embryology of Angiosperms** Structure of anther, anther wall, types of tapetum. Microsporogenes and development of male gametophyte.Structure of ovule, megasporogenesis; monosporic (*Polygonum*), bisporic (*Allium*) and tetrasporic (*Peperomia*) types of embryo sacs. Outlines of pollination, pollen – pistil interaction and fertilization. Endosperm - Types and biological importance - Free nucle cellular, helobial and ruminate. Development of Dicot (*Capsella bursa-pastoris*) embryo.
Jan-2023	III IV	**Basics of Ecology** 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.
Feb 23	V	**Population, Community and Production Ecology** 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
Nov 2022	I	**Basics of Biodiversity** 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 bool Role of NBPGR and NBA in the conservation of Biodiversity.

Mar-2022	I	**Plant - water** Importance of water to plant life, physical properties of water, diffusion, Imbibition, Osmosis**.** Water potential, osmotic potential, pressure potential. Absorption and lateral transport of water; Ascent of sap Transpiration: stomata structure and mechanism of stomatal movements (K^+ ion flux). Mechanism of phloem transport; source-sink relationships.
Apr-2022	II	**Mineral nutrition, Enzymes and Respiration** Essential macro and micro mineral nutrients and their role in plants; symptoms of mineral deficiency**.** Absorption of mineral ions; passive and active processes. Characteristics, nomenclature and classification of Enzymes. Mechanism of enzyme action,enzyme kinetics. Respiration: Aerobic and Anaerobic; Glycolysis, Krebs cycle; electron transport system, mechanism of oxidative phosphorylation, Pentose Phosphate Pathway (HMP shunt).
May'22	III	**Photosynthesis and Photorespiration** Photosynthesis: Photosynthetic pigments, absorption and action spectra; Red drop and Emerson enhancement effect. Concept of two photosystems; mechanism of photosynthetic electron transport and evolution of oxygen; photophosphorylation Carbon assimilation pathways (C3,C4 and CAM);Photorespiration - C2 pathway.
June-'22	IV	**Nitrogen and lipid metabolism** 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, β-oxidation of fatty acids, Glyoxylate cycle.
July 22	V	**Plant growth – development and stress physiology** Growth and Development: Definition, phases and kinetics of growth. Physiological effects of Plant Growth Regulators (PGRs) - auxins, gibberellins, cytokinins, ABA, ethylene and brassinosteroids. Physiology of flowering: Photoperiodism, role of phytochrome in flowering. Seed germination and senescence; physiological changes**.**

SEMESTER V Cell Biology, Genetics and Plant Breeding BOT-402

Month	Unit No.	Topic to be covered
Mar-2022	I	**The Cell:** 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.
Apr-2022	II	**Chromosomes:** Prokaryotic vs eukaryotic chromosome. Morphology of a eukayotic chromosome. Euchromatin and Heterochromatin; Karyotype and ideogram. Brief account of chromosomal aberrations - structural and numerical changes Organization of DNA in a chromosome (nucleosome models).
May'22	III	**Mendelian and Non-Mendelian genetics** 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.
June-'22	IV	**Structure and functions of DNA** 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.
July 22	V	**Plant Breeding** 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.

SEMESTER :V **Plant tissue culture** **SECBOT-501**

	Unit	Learning Units
Nov 2022	I	**Basic concepts of plant tissue culture** (10h) 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	**Sterilization techniques and culture media (10h)** 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 preparationof Murashige and Skoog culturemedium
Jan-2023	IV	**Callus culture technique (10h)** 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. **Callus culture**: Definition, various steps in callus cultur Initiation and maintenance of callus - Growth measurements and subculture; soma clonal variations.
Feb-2023	V	**Micropropagation (10h)** 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	**Applications of plant tissue culture (10h)** 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	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. Morphological features of any four edible mushrooms, Button mushroom (*Agaricusbisporus*), Milky mushroom (*Calocybe indica*), Oyster mushroom (*Pleurotussajor-caju*) and Paddy straw mushroom (*Volvariellavolvacea*). Nutritional value of mushrooms; medicinal mushrooms in South India - Ganoderma lucidum, Phellinus rimosus, Pleurotus florida and Pleurotus pulmonaris – their therapeutic value; Poisonous mushrooms - harmful effects
Dec- 2022	II III	Basic requirements of cultivation system 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. Compost and composting: Definition, machinery required for compost making, materials for compost preparation. Methods of composting- long method of composting and short method of composting
Jan-2023	IV	Spawning and casing Spawn and spawning: Definition, facilities required for spawn preparation; preparation of spawn substrate. Preparation of pure culture, media used in raising pure culture; culture maintenance, storage of spawn. Casing: Definition, Importance of casing mixture, Quality parameters of casing soil, different types of casing mixtures, commonly used materials
Feb-2023	V	**Mushroom cultivation** 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
Feb 2023	v	**Post harvest technology** 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.

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DEPARTMENT OF ZOOLOGY

2022-2023

SEMESTER – I

CURRICULAR PLAN

Subject Code: **ZOOTIIA** **Title: Animal Diversity Biology of Non – Chordates**

Month	Unit No.	Topic to be covered
Nov2022	I	Introduction to Non-chordates – Origin of metazoans Type study: *Polystomella* (structure and life cycle) Locomotion in protozoans Nutrition in protozoans Type study: *Sycon* (Structure, histology and skeleton) Canal system in sponges
Dec- 2022	II III	Type study: *Obelia*. (Structure – polyp and medusa and life cycle) Polymorphism in cnidarians. Corals and coral reefs Ctenophora (structure and affinities) Type study: *Fasciola hepatica* (Structure, reproduction, life cycle and pathogenicity) Parasitic adaptations in helminthes
Jan-2023	III IV	Type study: *Ascarislumbricoides*(Structure, reproduction, life cycle and pathogenicity) Type study: *Hirudineria*(Structure, circulatory, excretory and reproductive systems) Coelom and coelomoducts in annelid Structural affinities of Onycophora Type study: *Macrobrachiumrosenbergii* (Structure, appendages and Respiratory system)
Feb-2023	IV V	Economic importance of insects (Beneficial – Lac insect, honey bee, *Bombyxmori* 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 *Balanoglossus*- 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 UrochordataandCephalochordata Structure and life-history of *Herdmania*, Significance of retrogressive metamorphosis. General organization of vertebrates General characters of cyclostomes Comparison of *Petromyzon*and*Myxine*
July-'22	II	Fishes Type study – *Scoliodon* - 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 - *Rana*: Morphology, digestive system, respiratory system circulatory system,excretory system, nervous system and reproductive system Parental care in amphibians Reptilia South Indian Chelonians. Type study – *Calotes*: Morphology, digestive, respiratory, circulatory, urinogenital and nervous systems. Identification of poisonous snakes
Sep-'22	V	Aves and Mammalia **Aves** Birds as Glorified Reptiles. Type study-Pigeon (*Columbialivia*): Exoskeleton, respiratory, circulatory and excretory systems Significance of migration in birds Flight adaptations in birds **Mammalia** 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 IV	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 evolutionVariations Isolating mechanisms 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 clocksBiological rhythms (Circadian, Circalunar and Circannular) 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: ZOOT01**

Month	Unit No.	Topic to be covered
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, *In vitro* fertilization, super ovulation, Embryo transfer, Embryo cloning 5.4. Applications in Industry: Fermentation: Different types of Fermentation and Downstream processing

DEPARTMENT OF ZOOLOGY
2022-2023
SEMESTER – V
2022-2023 CURRICULAR PLAN

Subject Code: **ZOO501** **Title: SUSTAINABLE AQUACULTURE MANAGEMENT**

Month	**Unit No.**	**Topic to be covered**
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_2 and nutrients)
Jan-2023	IV	Induced breeding in fishesCulture 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 managementCulture of Indian major carps - post-stocking management
Feb-2023	V	Commercial importance of shrimp & prawn *Macrobrachium rosenbergii*- biology, seed production. Culture of *L. vannamei* – 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**

Month	Unit No.	Topic to be covered
Nov 2022	I	**Handling and Principles of fish Preservation** 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	**Methods of fish Preservation** 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) **Processing and preservation of fish and fish by-products** 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	**Sanitation and Quality control** 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	**Quality Assurance, Management and Certification** 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, *Codex Aliment Arius*

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	**Health** 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 Heatlh- 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	**Hygiene** Hygiene – Definition; Personal, Community, Medical and Culinary hygiene; WASH (**WA**ter, **S**anitation and **H**ygiene) 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**

Month	Unit No.	Topic to be covered
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	**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, 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**

Month	Unit No.	Topic to be covered
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 andcrustaceans Specialized organs in fishes – electric organ, venom and toxins . buoyancy in fishes- swim bladder and mechanism of gassecretion
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 **.Age and Growth** 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 **Breeding in Fishes**. Breeding habits & breeding grounds Breeding in natural environment and in artificial ponds, courtship Reproductive cycles Induced breeding in fishes **Breeding in shrimp** **Breeding in pearl oyster**
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 Environmentalfactorsaffectingreproductionanddevelopmentofcultivable aquaticfin&shellfish Endocrine system in fishes Neurosecretorycells,androgenicgland,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**

Month	Unit No.	Topic to be covered
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–*Labeo*, *Catla* and *Cirrhinus*And Minor carps Culture of Exotic fish species – *Tilapia*, *Pangassius* and *Clarius species* 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 *Macrobrachium rosenbergii*– biology, seed production, pond preparation, stocking Management of nursery and grow-out ponds, feeding ,morpho types and harvesting *M. malcolmsonii* - 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 *Latescalcarifer* Biology and culture of *Chanoschanos* Biology and culture of *Mugilcephalus* Biology and culture of *Etroplussuratensis* Biology and culture of *Trachinotus*sps (Pampano
Jun-2023	IV	**Brackish Water Shell Fish Aquaculture-I** 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 cultureof fish and prawns
Jul-2023	V	**Export – oriented Brackish Water Shell Fish Aquaculture-II** Biology and culture of *Scylla serrata* Biology and culture of *Pinctada vulgaris* Biology and culture of *Crassostrea* species

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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 aminoacids and fatty acids, protein to energy ratio, nutrient interactionsand protein sparingeffect Dietary sources of energy, effect of ration on growth, determination of feedingrate, check tray, factors affecting energy partitioning andfeeding 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-bounddiets 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 packingMicrobial, 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 **Viral diseases:** Viral Haemorrhagic scepticemia, Infectious Hematopoietic Necrosis (IHN) **Bacterial diseases:** Epizootic ulcerative syndrome, Infectious abdominal dropsy, Bacterial gill disease, Columnaris disease, Tail and fin rot **Fungal diseases:** Saprolegniasis and Brachiomycosis. **Protozoan diseases:** Ichthyophthiriasis, Myxoboliasis/ Whirling disease, Enterococcidiasis **Helminthic and Crustacean parasitic diseases:** Gyrodactylosis and Dactylogyrosis; Argulosis and Lernaeasis.
May-2022	III	Clinical symptoms, pathology, prevention and therapy of **Viral diseases**: White spot syndrome, Monodon Bacculovirus, Infectious hypodermal and haematopoieticnecrosis virus, Hepato Pancreatic parvo like virus, Yellow head bacculovirus, Taura Syndrome. **Bacterial diseases:** Vibriosis, white gut disease, loose shell syndrome, Acute Hepato- pancreatic Necrosis Disease (Early Mortality Syndrome, EMS) **Fungal diseases:** Hepatopancreatic microsporidiosis (HPM) by .Enterocytozoon hepatopenaei (EHP),*Lagenidium* and *Fusarium* disease. **Protozoan diseases:** ectocommensal protozoa –*Zoothamnium* and *Acineta*
June-2022	IV	Nutritional and Environmental disordersClinical symptoms, pathology, prevention and therapy of **Fish:**Protein (Essential amino acid) and Lipid (Essential fatty acid) deficiency disorders; Vitamin and mineral deficiency disorders; Fatty liver disease; Gas bubble disease, Asphyxiation. **Shrimp:** 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**

Month	Unit No.	Topic to be covered
Mar-2023	I	Aquarium design and Construction **Introduction** 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 III	**Aquarium Management** 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. 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 IV	.Maturation, secondary sexual characters, breeding habits, spawning, parental care, fertilization and development of eggs Hatching, larval rearing and their health. 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 V	Multiplication of aquarium plants – different methods. Marine Ornamental Fishes 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	**Handling and Principles of fish Preservation** 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	**Methods of fish Preservation** 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	**Processing and preservation of fish and fish by-products** 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	**Sanitation and Quality control** 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	**Quality Assurance, Management and Certification** 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, *Codex Aliment Arius*