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

VUYYURU-521165, KRISHNA Dt., A.P.(Autonomous)

Accredited by NAAC with "A" Grade

2022-2023

DEPARTMENT OF COMPUTER SCIENCE

MINUTES OF BOARD OF STUDIES

ODD SEMESTER

26-10-2023

Minutes of the meeting of Board of Studies in Computer Science for Semester I, III & V of I, II & III years B.Sc. (MPCs, MCCs, MSCs), B.Com. (C.A.) and B.Com (e-Commerce) Life Skill Course and Skill Development Course of AG & SG Siddhartha Degree College of Arts &Science, Vuyyuru, held at 3.00 P.M on 26-10-2022 in the Department of Computer Science.

Sri T.NagaPrasadaRao ... Presiding

Members Present:

1)..... (T.Naga Prasada Rao)	Chairman	Head, Department of Computer Science, AG&SG Siddhartha Degree College of Arts & Science.
2) ---------- (Dr. M. Babu Reddy)	University Nomine	Principal, Krishna University College of Engineering and Technology, Machilipatnam.
3). ---------- (Dr. P. J. S Kumar)	Subject Expert	Principal, HOD of Department of Computer Science A.N.R College Gudivada.
4) ---------- (Mr. K. Sridhar)	Subject Expert	TPO, Department of Computer Science PB Siddhartha College of Arts & Science,VJA
5) ---------- (R. Sowjanya)	Industrial Expert	.Net Developer, Maven Soft System Pvt. Ltd Madaapur, Hyderabad.
6).S. Prabhavathi (S. Prabhavathi)	Member	Lecturer in Computer Science, AG&SG Siddhartha Degree College of Arts &Science, Vuyyuru-521165
7)..... (A. Sravani)	Member	Lecturer in Computer Science, AG&SG Siddhartha Degree College of Arts &Science, Vuyyuru-521165
8)..... (A. Naga Srinivasa Rao)	Member	Lecturer in Computer Science, AG&SG Siddhartha Degree College of Arts &Science, Vuyyuru-521165
9).G. Katyayini (G.Katyayini)	Member	Lecturer in Computer Science, AG&SG Siddhartha Degree College of Arts &Science, Vuyyuru-521165
10)..... (O.Teja Sri)	Member	Lecturer in Computer Science, AG&SG Siddhartha Degree College of Arts &Science, Vuyyuru-521165
11).K. Z. K. Teja (K.Znana Krishna Teja)	Member	Lecturer in Computer Science, AG&SG Siddhartha Degree College of Arts &Science, Vuyyuru-521165
12) G. Lavanya (G.Lavanya)	Member	Student in M.Sc. CS, AG& SG Siddhartha Degree College of Arts & Science, Vuyyuru-521165
13) G. Jahnavi (G.Jahnavi)	Member	Student in B.Sc. MPCs, AG& SG Siddhartha Degree College of Arts & Science, Vuyyuru-521165

Agenda for B.O.S Meeting.

1. To discuss introducing Syllabi and Model papers for Elective Skill Enhancement Courses (SEC) for B.Sc. (MPCs, MCCs) & B.Com (C.A) programmes in Fifth/Sixth Semester adopting COs in line with guidelines of OBE following Blooms Taxonomy for the students admitted in the Academic year 2020-2021 and onwards.

2. To Discuss and approve the Structure and Syllabi and model papers of B. Sc. (MPCs, MCCs, MSCs), B.Com (C.A) & B.Com(e-commerce-Computers) programme in First and Third semesters for the student admitted in the academic year 2022-23 and onwards.

3. To recommend any changes in the syllabi for I, III, V & VI Semesters of I, II, III year Degree B.Sc.(MPCs, MCCs, MSCs), B.Com.(C.A.) and B.Com(e-commerce-Computers).

4. To Introduce a Life Skill Course and Skill Development Course for all B.Sc and B.Com from the Academic Year 2022-23.

5. To recommend the teaching and evaluation methods to be followed under Autonomous status.

6. To recommend the panel of paper setters and examiners to the controller of the examinations of autonomous courses of AG & SG Siddhartha Degree College of Arts & Science College, Vuyyuru.

7. Any other matter

Resolutions.

1. It is Resolved and Recommended to adopt the same structure, syllabi & Model papers for Elective Skill Enhancement Courses (SEC) for B.Sc. (MPCs, MCCs) & B.Com (C.A) programmes with titles Big Data Analytics using R, Data science using Python in Fifth/Sixth Semester adopting COs in line with guidelines of OBE following Blooms Taxonomy for the students admitted in the Academic year 2020-2021 and onwards.
2. It is Resolved and recommend to continue the syllabi without any changes, but only changes on Model Paper i.e. for I Semester of I Year & V/VI Semester of III year B.Sc. (MPCs, MCCs, MSCs), B.Com.(CA) & B.Com(e-commerce- Computers).
3. It is Resolved and Recommend to introduce new Syllabi and Model Question paper as per new regulations in III Semester of II Year Degree B.Sc. (MPCs, MCCs) and B.Com(CA).
4. It is Resolved to implements Life Skill Course and Skill Development Course for all B.Sc and B.Com from the Academic Year 2022-23.
5. It is resolved to continue the teaching and evaluation methods to be followed under Autonomous status.
6. It is resolved to continue the panel of paper setters and examiners to the controller of the examinations of autonomous courses of AG & SG Siddhartha Degree College of Arts & Science College, Vuyyuru.
7. Any other matter

Teaching methods:

Besides the conventional methods of teaching, we use modern technology i.e. Using of LMS and LCD projector to display on power board etc..for better understanding of concepts.

Evaluation of a student is done by the following procedure:

There are two components in the Valuation and Assessment of a student – Internal Assessment (**IA**) Semester Examinations (**SE). For the Batch of Students Admitted from 2022-23.**

Internal Assessment (IA)

- The maximum mark for IA is 30 and SE is 70 for theory; and for practical marks for IA 10 and 40 Marks for External Exam.
- Each IA written examination is of 1 hour 30 minutes duration for 20 marks. The tests will be conducted centrally. The average of two such IA is calculated for 20 marks.
- Attendance will be for 5 Marks. The other innovative component is for 5 marks, conducted during the class hours by the staff member/ in charge of the subject, in the form of assignments/ quiz/ seminars /PPT/Online- assignments/Open Book/Viva Voce/ Group work/ Mini Project/ Exhibition, etc. The topic and time for submission/ presentation will be announced by the staff member/ in charge of the subject in advance. Each student should explain and defend his/her presentation.
- The semester examination will be of 3 hours with maximum 70 marks.

Internal Assessment (IA) **For the Batch of Students Admitted from 2021-22.**

- The maximum mark for IA is 25 and SE is 75 for theory; and for practical marks for IA 10 and 40 Marks for External Exam.
- Each IA written examination is of 1 hour duration for 15 marks. The tests will be conducted centrally. The average of two such IA is calculated for 15 marks.

- Other Innovative Components will be for 5 Marks. The innovative component is for 5 marks, conducted during the class hours by the staff member/ in charge of the subject, in the form of
- assignments/ quiz/ seminars /PPT/Online- assignments/Open Book/Viva Voce/ Group work/ Mini Project/ Exhibition, etc. The topic and time for submission/ presentation will be announced by the staff member/ in charge of the subject in advance. Each student should explain and defend his/her presentation.
- The semester examination will be of 3 hours with maximum 75 marks.

Internal Assessment (IA) **For the Batch of Students Admitted from 2020-21.**

- The maximum mark for IA is 30 and SE is 70 for theory; and for practical marks for IA 10 and 40 Marks for External Exam.
- Each IA written examination is of 1 hour 30 minutes duration for 20 marks. The tests will be conducted centrally. The average of two such IA is calculated for 20 marks.
- Attendance will be for 5 Marks. The other innovative component is for 5 marks, conducted during the class hours by the staff member/ in charge of the subject, in the form of assignments/ quiz/ seminars /PPT/Online- assignments/Open Book/Viva Voce/ Group work/ Mini Project/ Exhibition, etc. The topic and time for submission/ presentation will be announced by the staff member/ in charge of the subject in advance. Each student should explain and defend his/her presentation.
- The semester examination will be of 3 hours with maximum 70 marks.

Semester Examinations (SE)

- A student should register himself/herself to appear for the Semester Examinations by payment of the prescribed fee.
- The Semester Examinations will be in the form of a comprehensive examination covering the entire syllabus in each subject. It will be of 3 hours duration & Foundation course 2 hours irrespective of the number of credits allotted to it.
- If a candidate fails to obtain pass marks even after the due to less mark in the IA examination, the marks of the next examination will be converted to be out of 100.
- Even though the candidate is absent for two IA exams/obtain zero marks the external marks are considered (if he/she gets 40/100) and the result shall be declared as 'PASS'.
- The maximum marks for each Paper shall be 100.

Question paper guide lines for Practical Examinations at the end of Semesters I, III & V Two Practical Programs to be conducted out of 15 programs at the end of Semester I, III & V Practical Examination time 3Hrs and Maximum Marks 50 Scheme of valuation Semesters – I, III & V B.Sc.& B.Com.(C.A), B.Com.(e-commerce-Computers).

Computer Science Practical's - External (Time: 3 hrs.) Total Marks: 40M

1. Programs writing (2):20 marks,
2. Viva voice : 5 marks
3. Execution &Result : 15 marks

Total Marks : 40

Computer Science Practical's- Internal **Total Marks: 10 M**

1. Record : 10 marks

6.) Discussed and recommended for organizing Seminars, Guest lectures, Work-shops to upgrade the knowledge of students, for the approval of the Academic Council.

7)Discussed and empowered the HOD to suggest the panel of the paper setters and examiners to the controller of the examinations.

8). We implemented online certificate courses & Internships such as NPTL, APSSDC - PYTHON, R-Programming, Amazon Web services and JAVA------ etc. To fill the curriculum gaps from II year Degree on words

9). Suggestions

Chairman

Appendix-I

LIST OF THE COURSES REVISED/ INTRODUCED IN V/VI SEMESTERS (2022 – 2023) BSC(MPCS,MCCS), I ,III SEMESTERS OF B.Sc (MPCs,MCCs,MSCs)										
SEM NO	**Course Code**	**Course No.**	**Title of Course**	**Hrs. / Week**		**Credits**		**Marks**		
				Th.	**Lab**	**Th.**	**Lab**	**Int. Max. Marks**	**SEE**	**Total Marks**
V/VI	SECCSCT01	6A	Web Interface Designing Technologies	3		3		30	70	100
	SECCSCP01		Web Interface Designing Technologies Lab		3		2	10	40	50
	SECCSCT02	7A	Web Applications Development using PHP& MYSQL	3		3		30	70	100
	SECCSCP02		Web Applications Development using PHP& MYSQL Lab		3		2	10	40	50
OR										
V/VI	SECCSCT03	6B	Internet of Things	3		3		30	70	100
	SECCSCP03		Internet of Things Lab		3		2	10	40	50
	SECCSCT04	7B	Application Development using Python	3		3		30	70	100
	SECCSCP04		Application Development using Python Lab		3		2	10	40	50
	OR									
	SECCSCT05	6C	Data science	3		3		30	70	100
	SECCSCP05		Data science Lab		3		2	10	40	50
	SECCSCT06	7C	Python for Data Science	3		3		30	70	100
	SECCSCP06		Python for Data Science Lab		3		2	10	40	50
III	CSCT37	3A	Data Base Management System	3		3		25	75	100
III	CSCP37	3A	Data Base Management System Lab		2		1	10	40	50
I	CSCT11B	IA	Problem solving in C	3		3		30	70	100
I	CSCP11B	IA	Problem solving in C Lab		2		1	10	40	50

Appendix-II

LIST OF THE COURSES REVISED/ INTRODUCED IN V/VI SEMESTERS (2022 – 2023) B.COM (C.A) I,III SEMESTERS OF B.Com(C.A)& B.Com(e-commerce-Computers)										
SEM NO	**Course Code**	**Course No.**	**Title of Course**	**Hrs. / Week**		**Credits**		**Marks**		
				Th.	**Lab**	**Th.**	**Lab**	**Int. Max. Marks**	**SEE**	**Total Marks**
V/VI	SECCAT01	6A	Big data Analytics using R	3		3		30	70	100
	SECCAP01		Big data Analytics using R Lab		3		2	10	40	50
	SECCAT07	7A	Data Science using Python	3		3		30	70	100
	SECCAP07		Data Science using Python Lab		3		2	10	40	50
	OR									
	SECCAT03	6B	Mobile application development	3		3		30	70	100
	SECCAP03		Mobile application development Lab		3		2	10	40	50
	SECCAT04	7B	Cyber Security and Malware Analysis	3		3		30	70	100
	SECCAP04		Cyber Security and Malware Analysis Lab		3		2	10	40	50
	OR									
	SECCAT05	6C	E Commerce Application Development	3		3		30	70	100
	SECCAP05		E Commerce Application Development Lab		3		2	10	40	50
	SECCAT06	7C	Real time governance system (RTGS)	3		3		30	70	100
	SECCAP06		Real time governance system (RTGS) Lab		3		2	10	40	50
	OR									
V/VI	SECCAT07	6D	Multimedia Tools and Applications	3		3		30	70	100
	SECCAP07		Multimedia Tools and Applications Lab		3		2	10	40	50
	SECCAT08	7D	Digital Imaging	3		3		30	70	100

	SECCAP08		Digital Imaging Lab		3		2	10	40	50
III	CABT31A	3A	Programming with C & C++	3		3		25	75	100
III	CABP31A	3A	Programming with C & C++ Lab		2		1	10	40	50
III	CSCT11B	3B	Problem Solving in 'C'	3		3		25	75	100
III	CSCP11B	3B	Problem Solving in 'C' LAB		2		1	10	40	50
I	CSBT11A	IA	Information Technology	5		4		30	70	100
I	CABT22A	IB	Computer Applications	3		3		30	70	100
I	CABP22A	IB	Computer Applications		2		1	10	40	50

Note-1: For Semester–V, for the domain subject Computer Science any one of the three pairs of SECs shall be chosen as courses 16,17,18,19,20 and 21, i.e., 16A & 17A or 16B &; 17B or 16C &; 17C and so on. The pair shall not be broken (ABCD allotment is random, not on any priority basis).

Note-2: One of the main objectives of Skill Enhancement Courses (SEC) is to inculcate field related skills of the domain subject in students. The syllabus of SEC will be partially skill oriented. Hence, teachers shall also impart practical training to students on the skills embedded in syllabus citing related real field situations.

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Title of the Paper: WEB INTERFACE DESIGNING TECHNOLOGIES

Semester: V/VI

Course Code	SECCSCT01	Course Delivery Method	Class Room / Blended Mode - Both
Credits	3	CIA Marks	30
No. of Lecture Hours / Week	3	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2022-23	Year of Offering: 2022 -23	Year of Revision: ----	Percentage of Revision: 0%

Course Objective: To create web elements like buttons, banners & Bars and of course complete UI designs. Forms and validations for your website. Setting up page layout, color schemes, contract, and typography in the designs. Writing valid and concise code for web pages.

Course Outcomes: Students at the successful completion of the course will be able to:

CO_1	Understand web application and static web page using Html. (PO5)
CO2	Gain knowledge about various designing of style sheets. (PO5)
CO3	Demonstrate skills regarding creation of an interface to dynamic website.(PO7)
CO4	Gain knowledge about various advantages of XML and validating schema(PO5)
CO5	Learn how to install word press and gain the knowledge of installing various plugins to use in their websites. (PO5,PO7)

Syllabus

Course Details

Unit	Learning Units	Lecture Hours
I	**Web Designing, HTML** **Web Designing:** Introduction To Web Designing, Difference Between Web Applications 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	12
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	12
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 a New Window, Messages and Confirmations, The Status Bar, Different Frames, Rollover Buttons, Moving Images	14
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, xml schema, data types, simple types, complex types ,Validating DTD,XSD.	12
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, text formatting with shortcuts, working with media-Adding, editing, deleting media elements, working with widgets, menus.	10

Text Book/ references / e-books/websites

1. Chris Bates, Web Programming Building Internet Applications, Second Edition, Wiley
2. Web technologies by A.A.Puntambekar
3. Web Technologies by N.P.Gopalan,Eastern Economy Edition,2nd edition
4. Paul S.WangSanda S. Katila, an Introduction to Web Design plus Programming, Thomson
5. Head First HTML and CSS, Elisabeth Robson, Eric Freeman, O'Reilly Media Inc.
6. An Introduction to HTML and JavaScript: for Scientists and Engineers, David R. Brooks.
7. Schaum's Easy Outline HTML, David Mercer, Mcgraw Hill Professional.
8. Word press for Beginners, Dr.Andy Williams.
9. Professional word press, Brad Williams, David damstra, Hanstern.
10. Web resources:
    a. http://www.codecademy.com/tracks/web
    b. http://www.w3schools.com
    c. https://www.w3schools.in/wordpress-tutorial/ d.http://www.homeandlearn.co.uk

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(With Effect from Academic Year 2022-23)

COMPUTER SCIENCE	SECCSCT01	2022-23	B.SC(MPCS,MCCS)

SEMESTER – V/VI **PAPER – VI** **Max. Marks 70**

Model Paper: WEB INTERFACE DESIGNING TECHNOLOGIES

NO of Hours: 3 **No Of Credits: 3** **Pass Marks 28**

SECTION – A
Short Answer Questions

Answer any Four questions. (At least 1 question should be given from each Unit)

(4x5=20Marks)

1.What is HTML? Explain features and structure of HTML program with example(CO1,L1)
2. What is layer? How are they described with HTML code?(CO1,L1)
3.Explain hyperlinks in HTML.(CO2,L5)
4.What is java script? Explain the features ,advantages and disadvantages of java script(CO3,L1)
5. What are the elements and attributes used in XML(CO4,L1)
6. Explain text formatting in word Press.(CO5,L5)

SECTION-B

Answer all questions.

(5 x 10 = 50 Marks)

9(a) What is list? Explain various types of lists in HTML.(CO1,L1)

OR

9(b)Explain Frames and forms in HTML(CO1,L2)

10(a)Define CSS, Explain various styles sheets in HTML(CO2,L1)

OR

10(b). Explain HTML APIs.(CO1,L2)

11(a).What is DHTML? Explain about various string and mathematical functions(CO3,L2)

OR

11(b) Explain Exception handling and rollover buttons in java script(CO3,L2)

12(a).What are the advantages of using XML and CSS? How to validate XML schema.(CO4,L1)

OR

12(b) Explain about DTD in XML(CO4,L2)

13(a) What is admin panel, what are the steps involved in working with post and pages (CO5,L1)

OR

13(b) Explain how we can add, edit and deleting media elements in word press(CO5,L2)

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COMPUTER SCIENCE	SECCSCT01	2022-23	B.SC(MPCS,MCCS)

SEMESTER – V/VI **PAPER – VI** **Max. Marks 50**

Lab List: WEB INTERFACE DESIGNING TECHNOLOGIES LAB

No. of Hours per week: 3 **External: 40** **Internal: 10** **Credits: 2**

I. Course Outcomes: Students at the successful completion of the course will be able to:

CO1: Create a basic website with the help of HTML and CSS.(PO5)

CO2: Acquire the skill of installing word press and various plugins of Word press.(PO5)

CO3: Create a static website with the help of Word press..(PO5,PO7)

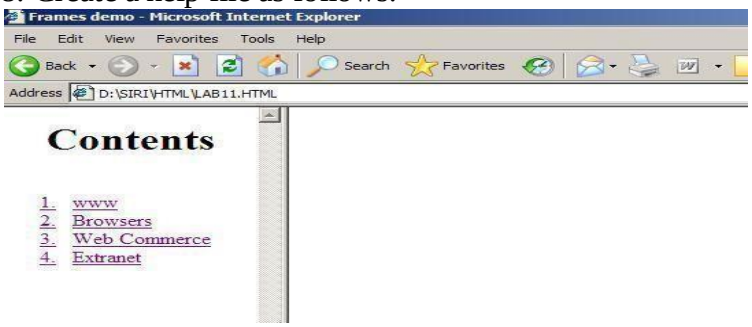
CO4: Create an interface for a dynamic website.(PO5,PO7)

CO5: Apply various themes for their websites using Word press.(PO7)

II. Practical (Laboratory) Syllabus: (30 periods)

HTML and CSS:

1. Create an HTML document with the following formatting options:
(a)Bold, (b) Italics, (c) Underline, (d) Headings (Using H1 to H6 heading styles), (e) Font (Type, Size and Color), (f) Background (Colored background/Image in background), (g) Paragraph, (h) Line Break, (i) Horizontal Rule, (j) Pre tag
2. Create an HTML document which consists of:
(a) Ordered List (b) Unordered List (c) Nested List (d) Image
3. Create a form using HTML which has the following types of controls:
(a) Text Box (b) Option/radio buttons (c) Check boxes (d) Reset and Submit buttons
4. Embed a calendar object in your web page.
5. Create an applet that accepts two numbers and perform all the arithmetic operations on them.
6. Create nested table to store your curriculum with image.
7. Create a form that accepts the information from the subscriber of a mailing system.
8. Create a help file as follows:



9. Write a html program including style sheets.
10. Write a html program to layers of information in web page.
11. Develop a Java script to determine whether the given number is a “PERFECT NUMBER “or not.
12. Develop a Java script to generate “ARMSTRONG NUMBERS” between the ranges 1 to 100.
13. Write a java script that reads an integer and displays whether it is a prime number or not.
14. Write a java script which accepts the text in lower case and displays the text in upper case
15. Write a java script program for user name and password validation using on click event.

Word press:

16. Installation and configuration of word press.
17. Create five pages on COVID – 19 and link them to the home page.
18. Add an external video link with size 640 X 360.
19. Create a user and assign a role to him.
20. Create a login page to word press using custom links

III. Lab References:

1. Web technologies by A.A.Puntambekar
2. Web Technologies by N.P.Gopalan,Eastern Economy Edition,2nd edition
3. Word press for Beginners, Dr.Andy Williams.
4. Professional word press, Brad Williams, David damstra, Hanstern.

Reference Materials on the Web/web-links:

1. https://onlinecourses.nptel.ac.in/noc17_cs22/course
2. http://www.codecademy.com/tracks/web
3. http://www.w3schools.com
4. https://www.w3schools.in/wordpress-tutorial/

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Title of the Paper: WEB APPLICATIONS DEVELOPMENT USING PHP AND MYSQL

Semester: V/VI

Course Code	SECCSCT02	Course Delivery Method	Class Room / Blended Mode - Both
Credits	3	CIA Marks	30
No. of Lecture Hours / Week	3	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2015-16	Year of Offering: 2022 -23	Year of Revision: ----	Percentage of Revision: 30%

Course Objective: Upon successful completion of the course, participants should be able to: **List the major elements of the PHP & MySQL work and explain why PHP is good for web development**. Learn how to take a static website and turn it into a dynamic website run from a database using PHP and MySQL.

Course Outcomes: Students at the successful completion of the course will be able to:

CO_1	Learn basic structure and key concepts in PHP, Control statements and functions concept and related programs (PO5)
CO2	Know What is an Array concept related programs, What is an Object, various objects, Formatting strings, Date and time and related programs (PO5)
CO3	Learn importance of Forms, Combining HTML with PHP code. Importance of Cookies and Sessions related programs of forms cookies and sessions. (PO5)
CO4	Know importance of File concept in PHP how to Create, Open, Read and write data in file related programs, Knowing about Image creation, drawing, and modification image (PO7)
CO5	Know about Database concept of MySQL, Connection, Creation of Database, Table adding Record into it related programs (PO7)

PHP Syllabus

Course Details

Unit	Learning Units	Lecture Hours
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 function? ,Calling functions, Functions, Returning the values from User-Defined Functions, Variable Scope.	12
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.	12
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	14
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.	12
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.	10

Textbooks and References

1. JulieC.Meloni, SAMS Teach yourself PHP MySQL and Apache, Pearson education
2. Steven Holzner, PHP: The Complete Reference, McGraw-Hill
3. RobinNixon,LearningPHP,MySQL,JavaScript,CSS&HTML5,ThirdEditionO'reilly,2014
4. XueBaiMichaelEkedahl, The web warrior guide to Web Programming, Thomson (2006).
5. Web resources:
    e. http://www.codecademy.com/tracks/php
    f. http://www.w3schools.com/PHP
    g. http://www.tutorialpoint.com

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COMPUTER SCIENCE	**SECCSCT02**	**2022-23**	**B.SC(MPCS,MCCS)**

SEMESTER – V/VI **PAPER – VII** **Max. Marks 70**

Model Paper: Web Applications Development using PHP & MYSQL

NO of Hours: 3 **No Of Credits: 3** **Pass Marks 28**

SECTION – A

Short Answer Questions **(4 x 5=20 Marks)**

Answer any Four questions. (At least 1 question should be given from each Unit)

1) Define Structure of PHP.(CO1,L1)
2) Differentiate Conditional statement and Looping statement with syntax.(CO1,L4)
3) Define Array concept explain about it.(CO2,L1)
4) Explain about Cookies concept.(CO3,L2)
5) Explain about Image creation.(CO4,L2)
6) Write short note on Mysqli.(CO5,L1)

SECTION B

(5 x 10=50 Marks)

Answer all questions. (Two questions should be given from each unit with internal choice)

9(a) Explain about Control Statements.(CO1,L2)

OR

9(b) Discuss about Function define, Call and return value with example.(CO1,L6)

10(a) List various types of Formatting strings explain them.(CO2,L2)

OR

10(b) Define Array function with example.(CO2,L1)

11(a) Write names of Form objects explain them with example.(CO3,L2)

OR

11(b) Compare and Contrast Session and Cookies.(CO3,L4)

12(a) Explain File concept about file creation, Open file, Write file and Delete file with example(CO4,L2)

OR

12(b) Construct steps for Interfacing complete image concept explain them with one example.(CO4,L3)

13(a) Discuss about DDL commands and DML commands in Mysqli with syntaxes (CO5,L6)

OR

13(b) Write code to Create table of Employee by adding any four columns with example.(CO5,L6)

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COMPUTER SCIENCE	**SECCSCT02**	**2022-23**	**B.SC(MPCS,MCCS)**

SEMESTER – V/VI **PAPER – VII** **Max. Marks 50**

Lab List: **Web Applications Development using PHP & MYSQL lab**

No. of Hours per week: 3 **External: 40** **Internal: 10** **Credits: 2**

I. Course Outcomes: Students at the successful completion of the course will be able to:

CO1: Learn and implement basic programs in PHP, Control statements and functions concept (PO5)

CO2: Implement Basic programs in Object, various objects, Formatting strings, Date and time (PO5)

CO3: Learn and implement important programs of Forms, Combining HTML with PHP code. Importance of Cookies and Sessions..(PO5)

CO4: Implement programs on Files concept in PHP and on Image creation, drawing, and modification image (P05 & PO7)

CO5: Implement Database programs on MySQLi, Connection, Creation of Database, Table adding Record into it related programs (PO7)

II: Practical (Laboratory) Syllabus: (30 Periods): At least 8 Practical's.

1. Write a PHP program to Display "Hello"
2. Write a PHP Program to display today's date.
3. Write a PHP program to display Fibonacci series.
4. Write a PHP Program to read the employee details.
5. Write a PHP program to prepare the student marks list.
6. Write a PHP program to generate the multiplication of two matrices.
7. Create student registration form using text box, check box, radio button, select, submit button. And display user inserted value in new PHP page.
8. Create Website Registration Form using text box, check box, radio button, select, submit button. And display user inserted value in the new PHP page.
9. Write a PHP script to demonstrate passing variables with cookies.
10. Write a program to keep track of how many times a visitor has loaded the page.
11. Write a PHP application to add, Modify, delete and fetch the rows in a Table.
12. Develop a PHP application to implement the following Operations
    a. Registration of Users.b.Insert the details of the Users.c.Modify the Details.
    d.Transaction Maintenance.

i.No of times Logged in (ii).Time Spent on each login. Ii. Restrict the user for three trials only.

iii. Delete the user if he spent more than 100 Hrs of transaction.

13. Write a PHP script to connect to the MySQL server from your website.
14. Write a program to read customer information like cust-no, cust-name, item purchased, and mob-no, from customer table and display all this information in table format on the output screen.
15. Write a program to edit the name of a customer to "Kiran" with cust-no =1, and to delete record with cust-no=3.
16. Write a program to read employee information like emp-no, emp-name, designation and salary from the EMP table and display all this information using table format in your website.
17. Create a dynamic web site using PHP and MySQL.

Textbooks and References: 1. JulieC.Meloni,SAMS Teach yourself PHP MySQL and Apache, Pearson Education(2007).

1. Steven Holzner, PHP: The Complete Reference, McGraw-Hill

2. RobinNixon,LearningPHP,MySQL,JavaScript,CSS&HTML5,ThirdEditionO'reilly.

Web resources: a.http://www.codecademy.com/tracks/php

b.http://www.w3schools.com/PHP

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Title of the Paper: INTERNET OF THINGS

Semester: V/VI

Course Code	SECCSCT03	Course Delivery Method	Class Room / Blended Mode - Both
Credits	3	CIA Marks	30
No. of Lecture Hours / Week	3	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2022-23	Year of Offering: 2022 -23	Year of Revision: ----	Percentage of Revision: 0%

Course Objective: This course gives a foundation in the Internet of Things, including the components, tools, and analysis by teaching the concepts behind the IoT and a look at real-world solutions.

Course Outcomes: Students at the successful completion of the course will be able to:

CO_1	Understand architecture and applications of IoT systems.(PO5)
CO2	Gain knowledge of various development boards used for IoT.(PO5)
CO3	Understand various Wireless Technologies used in IoT.(PO5)
CO4	Learn how to use various sensors and actuators for design of IoT.(PO7)
CO5	Learn how to connect various things to Internet and develop simple IOT Devices. (PO7)

Syllabus

Course Details

Unit	Learning Units	Lecture Hours
I	Fundamentals of IoT: Introduction, Definitions & Characteristics of IoT, IoT Architectures, Physical & Logical Design of IoT, Enabling Technologies in IoT, History of IoT, About Things in IoT, The Identifiers in IoT, About the Internet in IoT, IoT frameworks, IoT andM2M.**Applications of IoT:** Home Automation, Smart Cities, Energy, Retail Management, Logistics, Agriculture, Health and Lifestyle, Industrial IoT, Legal challenges, IoT design Ethics, IoT in Environmental Protection.	12
II	Sensors Networks: Definition, Types of Sensors, Types of Actuators, Examples and Working, IoT Development Boards: Arduino IDE and Board Types, Raspberry Pi Development Kit, RFID Principles and components, Wireless Sensor Networks: History and Context, The node, Connecting nodes, Networking Nodes, WSN and IoT.	12
III	Wireless Technologies for IoT: WPAN Technologies for IoT: IEEE802.15.4, Zigbee, HART, NFC, ZWave, BLE, Bacnet And Modbus. IP Based Protocols for IoTIPv6, 6LowPAN, LoRA, RPL, REST, AMPQ, CoAP, MQTT. Edge connectivity and protocols.	14
IV	Arduino Simulation Environment: Arduino Uno Architecture, Setting up the IDE, Writing Arduino Software, Arduino Libraries, Basics of Embedded C programming for Arduino, Interfacing LED, push button and buzzer with Arduino, Interfacing Arduino with LCD. **Sensor & Actuators with Arduino**: Overview of Sensors working, Analog and Digital Sensors, Interfacing of Temperature, Humidity, Motion, Light and Gas Sensors with Arduino, Interfacing of Actuators with Arduino, Interfacing of Relay Switch and Servo Motor with Arduino.	12
V	Developing IOT's: Implementation of IoT with Arduino, Connecting and using various IoT Cloud Based Platforms such as Blynk, Thing speak, AWS IoT, Google Cloud IoT Core etc. Cloud Computing, Fog Computing, Privacy and Security Issues in IoT.	10

Text Book/References

1. Internet of hings - A Hands-on Approach, Arshdeep Bahga and Vijay Madisetti,UniversitiesPress, 2015, ISBN: 9788173719547
2. Vijay Madisetti and ArshdeepBahga, "Internet of Things (A Hands-onApproach)", 1stEdition, VPT, 2014

Reference Materials on the Web/web-links:

1. https://github.com/connectIOT/iottoolkit2.https://github.com/connectIOT/iottoolkithttps://www.arduino.cc/

3.https://onlinecourses.nptel.ac.in/noc17_cs22/course 4.https://blynk.io(Mobileapp)

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COMPUTER SCIENCE	SECCSCT03	2022-23	B.SC(MPCS,MCCS)

SEMESTER – V/VI **PAPER – VI** **Max. Marks 70**

Model Paper: Internet Of Things

NO of Hours: 3 **No Of Credits: 3** **Pass Marks 28**

SECTION – A

Short Answer Questions **(4x5=20Marks)**

Answer any Four questions. (At least 1 question should be given from each Unit)

1) Define IOT and write characteristics of IOT.(CO1,L1)
2) Differentiate IOT and M2M.(CO1,L4)
3) Define Actuator and explain about it.(CO2,L1)
4) Explain about wireless technology Zigbee.(CO3,L2)
5) Explain about light and gas sensors.(CO4,L2)
6) Write short note on Fog Computing.(CO5,L1)

SECTION B **(5x10=50Marks)**

Answer all questions. (Two questions should be given from each unit with internal choice)

9 (a) Explain IOT architecture with neat diagram.(CO1,L2)

OR

9(b) Discuss about Applications of IOT.(CO1,L6)

10(a) List various types of sensors in IOT and explain any 3 of them.(CO2,L2)

OR

10(b) List RFID components and explain them..(CO2,L2)

11(a) Write names of wireless technologies used in IOT and describe any 2 of them.(CO3,L2)

OR

11(b) Compare and Contrast MQTT and CoAP protocols.(CO3,L4)

12(a) Explain Arduino Uno Architecture.(CO4,L2)

OR

12(b) Construct steps for Interfacing Arduino with LCD and explain them.(CO4,L3)

13(a) Discuss about Privacy and security issues in IOT.(CO5,L6)

OR

13(b) Write code to Design any App of your choice using Thingspeak.(CO5,L6)

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COMPUTER SCIENCE	SECCSCT03	2022-23	B.SC(MPCS,MCCS)

SEMESTER – V/VI **PAPER – VI** **Max. Marks 50**

Lab List: **INTERNET OF THINGS LAB**

No. of Hours per week: 2 **External: 40** **Internal: 10** **Credits: 2**

I. Course Outcomes: Students at the successful completion of the course will be able to:

CO1:Acquiretheskillsto design a small IoT device.(PO5)

CO2:Connectvarioussensors, actuators, etc to Arduino board.(PO5)

CO3:Connectthethingsto Internet.(PO5)

CO4:Designasmallmobile app to control the sensors.(PO5,PO7)

CO5:Deployasimple IoT device.(PO5,PO7)

II: Practical (Laboratory) Syllabus: (30 Periods)

1. Understanding Arduino UNO Board and Components
2. Installing and work with Arduino IDE
3. Blinking LED sketch with Arduino
4. Simulationof4-WayTrafficLightwithArduino
5. Using Pulse Width Modulation
6. LEDF ade Sketch and Button Sketch
7. Analog Input Sketch(Bar Graph with LEDs and Potentiometre)
8. Digital Read Serial Sketch (Working with DHT/I R/Gas or Any other Sensor)
9. Working with Adafruit Librariesin Arduino
10. Spinninga DC Motorand Motor Speed Control Sketch
11. Working with Shields
12. Design APP using Blink Appor Thing speak API and connectit LED bulb.
13. Design APP Using Blynk Appand Connect to Temperature, magnetic Sensors.

II. Lab References:

1. Internet of Things - A Hands-on Approach, ArshdeepBahga and Vijay Madisetti,UniversitiesPress, 2015, ISBN: 9788173719547
2. Vijay Madisetti and Arshdeep Bahga, "Internet of Things (A Hands-on Approach)", 1stEdition, VPT, 2014
3. DanielMinoli,—"BuildingtheInternetofThingswithIPv6andMIPv6:TheEvolvingWorldof M2MCommunications",ISBN:978-1-118-47347-4,WillyPublications

Reference Materials on the Web/web-links:

1. https://github.com/connectIOT/iottoolkithttps://www.arduino.cc/
2. https://onlinecourses.nptel.ac.in/noc17_cs22/course
3. https://blynk.io(Mobileapp)

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Title of the Paper: APPLICATION DEVELOPMENT USING PYTHON

Semester: V/VI

Course Code	SECCSCT04	Course Delivery Method	Class Room / Blended Mode - Both
Credits	3	CIA Marks	30
No. of Lecture Hours / Week	3	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2022-23	Year of Offering: 2022 -23	Year of Revision: ----	Percentage of Revision: 0%

Course Objective: To further your software development career, you need to understand why and how Python executes your code so that you can create clean code that compiles in time. This Course unleashes the power of Python's functionalities to create compelling applications!

Course Outcomes: Students at the successful completion of the course will be able to:

CO_1	Understand basics of python and write applications using strings, tuples, lists, sets.(PO5,PO7)
CO2	Understand and use exceptions and packages for different applications.(PO5,PO7)
CO3	Create, run and manipulate Python Programs using threads and Regular Expressions.(PO5,PO7)
CO4	Apply concepts of Python programming in various fields related to IOT, Web Services and Databases in Python.(PO5,PO7)
CO5	write applications in python to perform various database operations.(PO5,PO7)

Syllabus

Course Details

Unit	Learning Units	Lecture Hours
I	**Python basics, Objects-** Python Objects, Standard Types, Other Built-in Types, Internal Types, Standard Type Operators, Standard Type Built-in Functions, **Sequences-**Strings, Lists, and Tuples, Mapping and Set Types. **Numbers-**Introduction to Numbers, Integers, Floating Point Real Numbers, Complex Numbers, Operators, Related Modules.	12
II	**Files:** File Objects, File Built-in Function [open()], File Built-in Methods, File Built-in Attributes, Command-line Arguments, File System, File Execution, Persistent Storage Modules, Related Modules. **Exceptions:** Exceptions in Python, Detecting and Handling Exceptions, Context Management, Exceptions as Strings, Raising Exceptions, Assertions, Standard Exceptions , Creating Exceptions. **Modules:** Modules and Files, Name spaces ,Importing Modules, Importing Module Attributes ,Module Built-in Functions ,Packages.	12
III	**Regular Expressions:** Introduction , Special Symbols and Characters, Resand Python Multithreaded Programming: Introduction, Threads and Processes, Python, Threads, and the Global Interpreter Lock, Thread Module, Threading Module.	14
IV	**GUI Programming:** Introduction, Tkinter and Python Programming, Brief Tour of Other GUIs, Related Modules and Other GUIs. **Web Programming:** Introduction, Web Surfing with Python, Creating Simple Web Clients, Advanced Web Clients, CGI Helping Servers Process Client Data, Building CGI Application, Web (HTTP) Servers.	12
V	**DatabaseProgramming:**Introduction,PythonDatabaseApplicationProgrammer'sInterface (DBAPI), Object Relational Managers(ORMs).	10

Text Book/References:1 ThinkPython,AllenDowney,GreenTeaPress.

2.IntroductiontoPython, KennethA. Lambert, Cengage.

3.PythonProgramming:A Modern Approach, Vamsi Kurama ,Pearson.

4.LearningPython,Mark Lutz, O' Really.

5.**C**ore Python Programming,WesleyJ. Chun,Second Edition, Pearson

Reference Materials on the Web/web-links:

- https://www.tutorialspoint.com/python/index.htm
- https://www.w3schools.com/python/

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COMPUTER SCIENCE	SECCSCT04	2022-23	B.SC(MPCS,MCCS)

SEMESTER – V/VI **PAPER – VII** **Max. Marks 70**

Model Paper: Application Development Using Python

NO of Hours: 3 **No Of Credits: 3** **Pass Marks 28**

SECTION – A

Short Answer Questions **(4 x 5=20Marks)**

Answer any Four questions. (At least 1 question should be given from each Unit)

1) Give classification of various built in data types in python .(CO1,L2)
2) Compare tuples and sets in python.(CO1,L4)
3) What is need of assertions in python? Give simple example.(CO2,L1)
4) Write 5 special symbols used in python and their purpose.(CO3,L1)
5) Write short note on web surfing with python.(CO4,L1)
6) Why do we use Global Interpreter lock in Python?(CO5,L1)

SECTION B **(5 x 10=50 Marks)**

Answer all questions. (Two questions should be given from each unit with internal choice)

9 (a) Write names of ten built in functions in python and explain them.(CO1,L2)

OR

9(b) Create a list in python and apply five list methods on it.(CO1,L6)

10(a) Create a program in python to demonstrate exception handling.(CO2,L6)

OR

10(b) Develop a program in python for user defined module creation and importing.(CO2,L6)

11(a) Develop multithreaded program in python.(CO3,L6)

OR

11(b) Explain about threading module with an example program.(CO3,L2)

12(a) Discuss with steps building CGI application in Python.(CO4,L6)

OR

12(b) Explain with example creating simple web client in python.(CO4,L6)

13(a) Explain about Python database Application programmers interface.(CO5,L2)

OR

13(b) Create database application in python to insert and delete student records.(CO5,L6).

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COMPUTER SCIENCE	**SECCSCT04**	**2022-23**	**B.SC(MPCS,MCCS)**

SEMESTER – V/VI **PAPER – VII** **Max. Marks 50**

Lab List: **APPLICATION DEVELOPMENT USING PYTHON LAB**

No. of Hours per week: 2 **External: 40** **Internal: 10** **Credits: 2**

I. Course Outcomes: Students at the successful completion of the course will be able to:

CO1:Acquiretheskillsto write simple programs in python.(PO5,PO7)

CO2:Implementprogramsrelatedtovariousdatastructureslikelists,setsetc. .(PO5,PO7)

CO3:Implementprogramsrelatedtofiles.(PO5,PO7)

CO4:Implement Exception handling programs in python.(PO5,PO7)

CO5:Implement programs to insert, delete, display data in databases.(PO5,PO7)

II: Practical (Laboratory) Syllabus: (30 Periods)

1. Write a menu driven program to convert the given temperature from Fahrenheit to Celsius and viceversa depending up on user's choice.
2. Write a python program to calculate total marks, percentage and grade of a student .Marks obtained in each of the three subjects are to be input by the user. Assign grades according to the following criteria:

GradeA: Percentage>=80 **Grade B**: Percentage>=70 and <80 **Grade C**: Percentage>=60 and <70 **Grade D:** Percentage>=40 and <60 **GradeE**: Percentage<40

3. Write a python program to display the first nterm so f Fibonacci series.
4. Write a python program to calculate the sum and product of two compatible matrices.
5. Write a function that takes a character and returns True if it is a vowel and False otherwise.
6. Writeamenu-drivenprogramtocreatemathematical3Dobjects
   1.Curve 2.sphere 3.cone 4.arrow 5.ring6.Cylinder.
7. Write a python program to readn integers and display them as a histogram.
8. Write a python program to display sine, cosine, polynomial and exponential curves.
9. Write a python program to plot a graph of people with pulse rate p vs. height h. The values of P and H are to be entered by the user.
10. Write a python program to calculate the mass m in a chemical reaction. The mass m(in gms) disintegrates according to the formula m=60/ (t+2), where t is the time in hours .Sketch a graph fort vs. m, where t>=0.
11. A population of 1000 bacteria is introduced into a nutrient medium. The population pgrows as follows:P(t) =(15000(1+t))/ (15+e)
12. Where the time t is measured in hours. WAP to determine the size of the population at given time t and plot a graph for P vs t for the specified time interval.
13. Input initial velocity and acceleration, and plot the following graphs depicting equations of motion:1.Velocity wrt time (v=u+at)2.Distance wrt time(s=u*t+0.5*a*t*t)
    Distance wrt velocity(s=(v*v-u*u)/2*a)
14. Write a program that takes two lists and returns True if they have at least one common member.

15. Write a Python program to print a specified list after removing the 0th, 2nd, 4th and5th elements.
16. Write a program to implement exception handling.
17. Trytoconfigurethewidgetwithvariousoptionslike:bg=”green”,family=”times”,size=20.
18. Write a Python program to read last 5linesofafile.
19. Design a simple database application that stores the records and retrieve the same
20. Design a database application search the specified record from the database.
21. Design a database application to that allows the user to add, delete and modify the records.

III. Lab References:

1. **C**orePython Programming,WesleyJ. Chun,Second Edition, Pearson.
2. ThinkPython, AllenDowney,GreenTeaPress.

Reference Materials on the Web/web-links:

https://www.tutorialspoint.com/python/index.htm
https://www.w3schools.com/python/

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Title of the Paper: DATA SCIENCE

Semester: V/VI

Course Code	SECCSCT05	Course Delivery Method	Class Room / Blended Mode - Both
Credits	3	CIA Marks	30
No. of Lecture Hours / Week	3	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2022-23	Year of Offering: 2022 -23	Year of Revision: ----	Percentage of Revision: 0%

Course Objective: Develop in depth understanding of the key technologies in data science and business analytics: data mining, machine learning, visualization techniques, predictive modeling, and statistics. Practice problem analysis and decision-making.

Course Outcomes: Students at the successful completion of the course will be able to:

CO_1	Analyze the data and their type to build programs using lists and tuples in Python.(PO5)
CO2	Understand the concept of getting data, cleaning and manipulating data(PO5)
CO3	Be capable of understanding the concepts of K-Nearest Neighbors, Naïve Baye's.(PO5,PO7)
CO4	Understand the concepts of Simple, Multiple & Logistic regressions.(PO5,PO7)
CO5	Acquire knowledge on Decision Trees and Neural Networks.(PO5,PO7)

Syllabus

Course Details

Unit	Learning Units	Lecture Hours
I	**Introduction**: The Ascendance of Data, What is Data Science?, Finding key Connectors- Data Scientists You May Know, Salaries and Experience - Paid Accounts ,Topics of Interest, Onward. **Python:** Getting Python, The Zen of Python, Whitespace Formatting, Modules , Arithmetic, Functions, Strings, Exceptions, Lists, Tuples, Dictionaries, Sets, Control Flow, Truthiness, Sorting, List Comprehensions.**Visualizing Data :**Matplotlib, Bar charts, Line charts ,Scatterplots	12
II	**Getting Data:** stdin and stdout, Reading Files – The Basics of Text Files, Delimited Files, Scraping the Web - HTML and the parsing Thereof, Example: O'Reilly Books about Data, Using APIs – JSON (and XML), Using an Unauthenticated API, Finding APIs. **Working with Data :**Exploring Your Data, Exploring One-Dimensional Data, Two Dimensions Many Dimensions ,Cleaning and Munging, Manipulating Data ,Rescaling, Dimensionality Reduction.	12
III	**Machine Learning**: Modeling, What Is Machine Learning? Over fitting and under fitting, Correctness, The Bias-Variance Trade-off, Feature Extraction and Selection. **K-Nearest Neighbors:** The Model, Example: Favorite Languages, The Curse of Dimensionality. **Naive Bayes :**A Really Dumb Spam Filter, A More Sophisticated Spam Filter, Implementation, Testing Our Model.	14
IV	**Simple Linear Regression:** The Model, Using Gradient Descent, Maximum Likelihood Estimation. **Multiple Regression: The** Model, Further Assumptions of the Least Squares Model, Fitting the Model, Interpreting the Model, Goodness of F.**LogisticRegression:** The Problem, the Logistic Function, Applying the Model, Goodness of Fit Support Vector Machines.	12
V	**Decision Trees**:What Is a Decision Tree? Entropy, the Entropy of a Partition, Creating a Decision Tree, Putting It All Together, Random Forests.**Neural Networks:** Perceptron, Feed-Forward Neul Networks and Back propagation,Example: Defeating a CAPTCHA.	10

References/ Text Book/ e-books/websites

Text Books:

1. Data Science from Scratch by Joel Grus O'ReillyMedia
2. Wes McKinney, "Python for Data Analysis: Data Wrangling with Pandas, NumPy, and IPython", O'Reilly, 2nd Edition,2018.

Reference Books:

1. Jake VanderPlas, "Python Data Science Handbook: Essential Tools for Working with Data", O'Reilly,2017.

Webresources:https://www.edx.org/course/analyzing-data-with-python

http://math.ecnu.edu.cn/~lfzhou/seminar/[Joel_Grus]_Data_Science_from_Scratch_First_Princ.pdf

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COMPUTER SCIENCE	SECCSCT05	2022-23	B.SC(MPCS,MCCS)

SEMESTER – V/VI **PAPER – VI** **Max. Marks 70**

Model Paper: Data Science

NO of Hours: 3 **No Of Credits: 3** **Pass Marks 28**

SECTION – A

Short Answer Questions **(4 x 5=20Marks)**

Answer any Four questions. (At least 1 question should be given from each Unit)

1. What is Data Science? Explain key connectors in data science? (CO1, L1)
2. Explain a) stdin b) stdout with examples? (CO2, L2)
3. Explain Simple Linear Regression using Gradient Descent? (CO4, L2)
4. Explain briefly about Logistic Regression? (CO5, L2)
5. Explain a) Lists b) Tuples c) Dictionaries in Python? (CO1, L2)
6. Explain in detail about Manipulating data? (CO3, L2)

SECTION B

Answer all questions. **(5 x 10 = 50 Marks)**

9. (A) Explain in detail about Visualizing Data? (CO_1, L2)
(OR)
(B) Explain the concept of functions and strings in python with example? (CO1, L2)

10. (A) Explain the concept of reading files? (CO3, L2)
(OR)
(B) Explain about Exploring One-Dimensional and Two- Dimensional data? (CO3, L2)

11. (A) Explain Machine learning with over fitting and under fitting in detail? (CO3, L2).
(OR)

(B) Explain K- Nearest Neighbors Model with an example? (CO4, L2)

12. (A) Explain Maximum Likelihood Estimation with example? (CO4, L2)
(OR**)**
(B) Explain in detail about Multiple Regression Model? (CO4, L2)

13. (A) Explain in detail about the concept of Decision Trees? (CO5, L2)
(OR**)**

(B) Explain the concept of Neural Networks with an example? (CO5, L2)

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COMPUTER SCIENCE	SECCSCT05	2022-23	B.SC(MPCS,MCCS)

SEMESTER – V/VI **PAPER – VI** **Max. Marks 50**

Lab List: **Data Science LAB**

No. of Hours per week: 3 **External: 40** **Internal: 10** **Credits: 2**

I. Course Outcomes: Students at the successful completion of the course will be able to:

CO1: Implement the programs to get the required data, process it and present the outputs using Python language.(PO5)

CO2: Execute statistical analyses with Open-source Python software.(PO5)

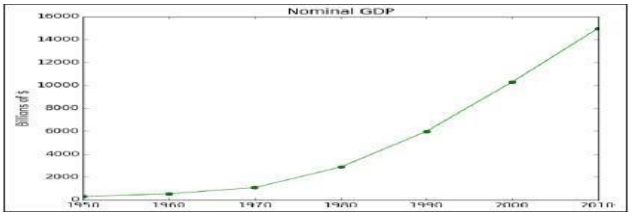
CO3: Apply data science solutions to real world problems.(PO5)

CO4: Implement Plot Distribution Curve in Python.(PO5)

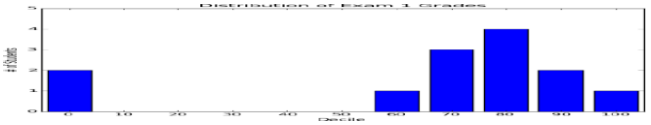
CO5: Implement rainfall data importing of some location with the help of packages available in R Studio and plot a chart of your choice.(PO5)

II: Practical (Laboratory) Syllabus: **(30 Periods)**.

LAB EXERCISES



3. **Practical (Laboratory) Syllabus**: *(30hrs.*)
4. Write a Python program to create a line chart for values of year and GDP asgiven below.
5. Write a Python program to create a bar chart to display number of students secured different grading as given below



6. Write a Python program to create a time series chart by taking one year month wise stock data in a CSV file
7. Write a Python program to plot distribution curve
8. Import a CSV file and perform various Statistical and Comparison operations on rows/columns. Write a python program to plot a graph of people with pulse rate pvs. height h. The values of P and H are to be entered by the user.
9. Import rainfall data of some location with the help of packages available in R Studio and plot a chart of your choice.

Lab References: 1. Data Science from Scratch by Joel Grus O'Reilly Media

2.Wes McKinney, "Python for Data Analysis: Data Wrangling with Pandas, Num Py, and I Python", O'Reilly, 2nd Edition,2018.

Reference Materials on the Web/web:

a. https://swcarpentry.github.io/python-novice-gapminder/09-plotting/index.html /

b. https://www.geeksforgeeks.org/visualize-data-from-csv-file-in-python/

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

Vuyyuru-521165.NAAC reaccredited at 'A' level

Autonomous -ISO 9001 – 2015 Certified

Title of the Paper: PYTHON FOR DATASCIENCE

Semester: V/VI

Course Code	SECCSCT06	Course Delivery Method	Class Room / Blended Mode - Both
Credits	3	CIA Marks	30
No. of Lecture Hours / Week	3	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2022-23	Year of Offering: 2022 -23	Year of Revision: ----	Percentage of Revision: 0%

Course Objective: The main objective of the course is to provide students with the basic concepts of Python, its syntax, functions and packages to enable them to write scripts for data manipulation and analysis. The course develops skills of writing and running a code using Python.

Course Outcomes: Students at the successful completion of the course will be able to:

CO_1	Identify the need for data science and solve basic problems using Python built-in data types and their methods.(PO5)
CO2	Design an application with user-defined modules and packages using OOP concepts.(PO5)
CO3	Deploy efficient storage and data operations using NumPy arrays.(PO5)
CO4	Apply powerful data manipulations using Pandas.(PO5)
CO5	Do data pre-processing and visualization using Pandas.(PO5,PO7)

Syllabus

Course Details

Unit	Learning Units	Lecture Hours
I	Basics of python programming-Features of Python, History of Python, Literal constants, Data Types, Input Operation, Reserved words, Operators and Expressions, Other Data Types, Lists, Dictionary, Type Conversion.	12
II	Decision Control Statements- Selection/conditional branching statements, Basic Loop Structures/Iterative Statements, Functions and Modules-Introduction, Function Definition, Function Call, Modules- Packages in Python, Python strings Revisited, Introduction, Built in String methods and functions, File Handling-Introduction, Opening and closing Files, Reading and writing Files, Directory Methods	12
III	Classes and Objects- Introduction, Classes and Objects, Class method and self argument, The init() method(the class constructor), Inheritance- Introduction, Inheriting classes in python, Types of Inheritance, Error and Exception Handling- Introduction to errors and exceptions, Handling Exceptions,Multiple except blocks ,NumPy Basics- Arrays and Vectorized Computation, The NumPyndarray, Creating ndarrays, Data Types for ndarrays, Arithmetic with NumPy Arrays, Basic Indexing and Slicing, Boolean Indexing, Transposing Arrays and Swapping Axes.	14
IV	Universal Functions: Fast Element, Wise Array Functions, Mathematical and Statistical Methods, Sorting, Unique and Other Set Logic, Introduction to pandas Data Structures-Series, Data Frame and Essential Functionality, Dropping Entries-Indexing, Selection, and Filtering, Function Application and Mapping, Sorting and Ranking.	12
V	Summarizing and Computing Descriptive Statistics, Unique Values, Value Counts, and Membership, Reading and Writing Data in Text Format, Data Cleaning and Preparation: Handling Missing Data, Data Transformation: Removing Duplicates, Transforming Data Using a Function or Mapping, Replacing Values, Detecting and Filtering Outliers, String Manipulation-Vectorized String Functions in pandas.	10

References/ Text Book/ e-books/websites

Text Books:

1. Reemathareja—Python Programming using problem solving approach, Oxford Publication
2. Wes McKinney, "Python for Data Analysis: Data Wrangling with Pandas, NumPy, and IPython", O'Reilly, 2nd Edition, 2018.

Reference Books:

1. JakeVanderPlas, "Python Data Science Handbook: Essential Tools for Working with 2.Data", O'Reilly, 2017.
3. Wesley J. Chun, "Core Python Programming", Prentice Hall, 2006.
4. Mark Lutz, "Learning Python", O'Reilly, 4th Edition, 2009.

Reference Materials on the Web/web-links:

a. https://www.edx.org/course/python-basics-for-data-science
b. https://www.edx.org/course/analyzing-data-with-python
c. https://www.coursera.org/learn/python-plotting?specialization=data-science- python
d. https://www.programmer-books.com/introducing-data-science-pdf/

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COMPUTER SCIENCE	SECCSCT06	2022-23	B.SC(MPCS,MCCS)

SEMESTER – V/VI **PAPER – VII** **Max. Marks 70**

Model Paper: : PYTHON FOR DATASCIENCE

NO of Hours: 3 **No Of Credits: 3** **Pass Marks 28**

SECTION – A

Short Answer Questions **(4 x 5=20Marks)**

Answer any Four questions. (At least 1 question should be given from each Unit)

1) State any four applications where python is more popular(CO1,L1)

2) List out the main differences between lists and tuples.(CO1,L2)

3) What are the uses of File object?(CO2,L1)

4) Differentiate between an error and exception(CO3,L3)

5) Write Array Functions(CO4,L1)

6) How to read and write data in text format(CO5,L4)

SECTION - B **(5 x 10=50Marks)**

Answer all questions. (Two questions should be given from each unit with internal choice)

9 .(a). Write in brief about the applications of Python.(CO1,L1)

OR

(b). Explain Various data types in python with Examples(CO2,L2)

10 (a). List different conditional statements in python with appropriate examples.(CO2,L2)

OR

(b). Explain the following file built-in functions and method with clear syntax, description and illustration: a) open ( ) b) file ( ) c) seek ( ) d) tell ( ) e)read ( )(CO3,L2)

11 (a). How does try-except statement work? Demonstrate with an example python code. (CO3,L4)

OR

(b). Explain NumPy arrays with suitable example(CO3,L2)

12 (a).Write Briefly Pandas Data structure(CO4,L1)

OR

(b).Write a python program to read data from CSV files using pandas(CO4,L1)

13 (a). How to remove duplicates from data transformation(CO5,L4)

OR

(b). Explain Python for Data Visualisation(CO5,L2).

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(**With Effect from Academic Year 2022-23**)

COMPUTER SCIENCE	**SECCSCT06**	**2022-23**	**B.SC(MPCS,MCCS)**

SEMESTER – V/VI **PAPER – VII** **Max. Marks 50**

Lab List: PYTHON FOR DATA SCIENCE LAB

No. of Hours per week: 3 **External: 40** **Internal: 10**

Credits: 2

I. Course Outcomes: Students at the successful completion of the course will be able to:

CO1:Understand the basic concepts of python programs and perform List, Tuple and Dictionary(PO5,PO7)

CO2: Understand the program of functions (PO5,PO7)

CO3: Able to Understand file handling techniques.(PO5,PO7)

CO4: Understand concepts of OOPS (PO5,PO7)

CO5: Able to Solving of data frames (PO5,PO7)

II: Practical (Laboratory) Syllabus: (30 Periods)

1. Perform Creation, indexing, slicing, concatenation and repetition operations on Python built-in data types: Strings, List, Tuples, Dictionary
2. Apply Python built-in data types: List, Tuples, Dictionary and their methods to solve any given problem.
3. Handle numerical operations using math and random number functions
4. Create user-defined functions with different types of function arguments.
5. Create packages and import modules from packages.
6. Perform File manipulations- open, close, read, write, append and copy from one file to another.
7. Write a program for Handle Exceptions using Python Built-in Exceptions
8. Write a program to implement OOP concepts
9. Create NumPy arrays from Python Data Structures, Intrinsic NumPy objects and Random Functions.
10. Manipulation of NumPy arrays- Indexing, Slicing, Reshaping, Joining and Splitting.
11. Computation on NumPy arrays using Universal Functions and Mathematical methods.
12. Load an image file and do crop and flip operation using NumPy Indexing.
13. Create Pandas Series and Data Frame from various inputs.
14. Import any CSV file to Pandas Data Frame and perform the following:
    (a) Visualize the first and last 10 records (b)Get the shape, index and column details
    (c) Select/Delete the records (rows)/columns based on conditions. (d) Perform ranking and sorting operations.(e)Do required statistical operations on the given columns.
    (f)Find the count and uniqueness of the given categorical values.
    (g)Rename single/multiple columns
15. Import any CSV file to Pandas Data Frame and perform the following:
    (a) Handle missing data by detecting and dropping/ filling missing values.
    (b) Transform data using apply () and map() method.
    (c) Detect and filter outliers.
    (d) Perform Vectorized String operations on Pandas Series.

III. Lab References: Wesley J. Chun, "Core Python Programming", Prentice Hall, 2006. Jake Vander Plas, "Python Data Science Handbook: Essential Tools for Working with Data", O'Reilly, 2017.

Reference Materials on the Web/web-links:

https://www.coursera.org/learn/python-plotting?specialization=data-science- python

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Title of the Paper: BIG DATA ANALYTICS USING R

Semester: V/VI

Course Code	SECCAT01	Course Delivery Method	Class Room / Blended Mode – Both
Credits	3	CIA Marks	30
No. of Lecture Hours / Week	3	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2022-23	Year of Offering: 2022-23	Year of Revision: ----	Percentage of Revision: 0%

Course Objective: Big data analytics examines large amounts of data to uncover hidden patterns, correlations and other insights. With today's technology, it's possible to analyze your data and get answers from it almost immediately – an effort that's slower and less efficient with more traditional business intelligence solutions.

Course Outcomes:

CO_1	Understand data and classification of digital data. (PO5)
CO2	Gain knowledge of technologies used in bigdata Analytics. (PO5, PO7)
CO3	Understand basics of R and control structures in R. (PO5)
CO4	Load data into R objects and manipulate them as needed. (PO5)
CO5	Create and edit visualizations with R (PO7)

Syllabus

Course Details

Unit	Learning Units	Lecture Hours
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?	12
II	**Big data Analytics:** What is and isn't big data analytics? Classification of analytics, Importance of big data analytics, Technologies needed to meet challenges of big data, data science, Data scientist	12
III	**Introduction to R and getting started with R:** What is R? Why R? Advantages of R 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	14
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	12
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	10

Prescribed Text Book:

1. Seema Acharya--Data Analytics using R, McGraw Hill education (India) Private Limited.

2. Big Data Analytics, Introduction to Hadoop, Spark, and Machine-Learning, Raj Kamal, PreetiSaxena, McGraw Hill, 2018

Reference Books:

1. SeemaAcharya, SubhashiniChellappan --- Big Data and Analytics second edition, Wiley
2. Big Data, Big Analytics: Emerging Business intelligence and Analytic trends for Today's Business, Michael Minnelli, Michelle Chambers, and AmbigaDhiraj, John Wiley & Sons, 2013
3. An Introduction to R, Notes on R: A Programming Environment for Data Analysis and Graphics. W. N. Venables, D.M. Smith and the R Development Core Team

Course Focus: R for data science focuses on the language's statistical and graphical uses. When you learn R for data science, you'll learn how to use the language to perform statistical analyses and develop data visualizations. R's statistical functions also make it easy to clean, import and analyze data.

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COMPUTER SCIENCE	SECCAT01	2022-23	B.COM (CA)

SEMESTER – V/VI **PAPER – IV** **Max. Marks 70**

Model Paper: **BIGDATA ANALYTICS USING R**

NO of Hours: 3 **No Of Credits: 3** **Pass Marks 28**

Section-A

Answer any Four questions.
(At least 1 question should be given from each Unit) **(4 x 5=25Marks)**

1. What is big data and why to use a big data? (CO1, L1)
2. What is big data analytics? (CO2, L1)
3. Explain ls () command in R. (CO3, L2)
4. Write a short note on charts. (CO5, L1)
5. Develop R script to load data into data frames from files. (CO4, L6)
6. Write about the control structures in R with examples. (CO3, L1)

Section-B

Answer all questions. **(5X10=50Marks)**
(Two questions should be given from each unit with internal choice)

9.(a) Give Classification of Digital Data and explain it. (CO1, L2)

OR

(b) Explain Characteristics of Data with an example. (CO1, L2)

10.(a) Write about Importance of big Data Analytics. (CO2, L1)

OR

(b) Explain Classification of Analytics. (CO2, L2)

11.(a) Write about the Data types in Explain with examples. (CO3, L1)

OR

(b) Construct Vector in R and explain various operations on it. (CO3, L3)

12. (a) What are the data frames? Write its significance in R-Language. (CO4, L1)

OR

(b) Demonstrate various functions used in data frames. (CO4, L2)

13.(a) Build a code in R for reading and getting data into R from databases. (CO5, L6)

OR

(b) Develop below plots in R (CO5, L6)
a) Box Whisker plots b)Scatter plots c)Pairs plots

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COMPUTER SCIENCE	SECCAT01	2022-23	B.COM (CA)

SEMESTER – V **PAPER – VI** **Max. Marks 50**

Title**: BIG Data Analysis using Python lab**

No. of Hours per week: 3 External: 40 Internal: 10 Credits: 2 Pass Marks 20

I. Course Outcomes: Students at the successful completion of the course will be able to:

CO1: Implement simple scripts or programs in R. (PO5)

CO2: Access online resources for R and import new function packages into the R workspace. (PO5, PO7)

CO3: Import, review, manipulate and summarize data-sets in R (PO5, PO7)

CO4: Explore data-sets to create testable hypotheses and identify appropriate statistical tests. (PO5, PO7)

CO5: Create and edit visualizations with R. (PO5, PO7)

II: Practical (Laboratory) Syllabus: (30 Periods)

1. Create a vector in R and perform operations on it (arithmetic operations, combining Vectors, retrieving elements of vector, assign names to vector elements).
2. Create integer, complex, logical, character data type objects in R and print their values And their class using print and class functions.
3. Create a matrix of values in R and extract data from matrix. (Ex. Second row thirdetc.) find transpose of matrix and combine two matrices using Rbind and Cbind functions.
4. Create a list in R and perform operations on it like list slicing, sum and mean functions, head and tail functions and finally delete list using rm() function.
5. Create data frame in R and perform operations on it
6. Write code in R to find out whether a number is prime or not.
7. Print numbers from 1 to 100 using while loop and for loop in R.
8. Find the factorial of a number using recursion in R.
9. Perform arithmetic operations in R using switch case
10. Write a code in R to find out whether the number is Armstrong or not.
11. Program to find Multiplication table from 1 to 10 number input by user.
12. Import data into R from text and excel files using read.table() and read.csv() function.
13. Create a dataset and draw different types of graphics using plot, box plot, histogram, pair plot functions.
14. Create a dataset and draw different types of graphs using bar charts, pie chart functions.
15. Create custom contingency in R and perform operations on it.

III. Lab References:

1. Seema Acharya--Data Analytics using R, McGraw Hill education (India) Private Limited.
2. Big Data Analytics, Introduction to Hadoop, Spark, and Machine-Learning, Raj kamal, PreetiSaxena, McGraw Hill, 2018

Reference Materials on the Web/web-links:

1. **https://www.wiley.com/enbd/Big+Data,+Big+Analytics:+Emerging+Business+Intelligence+and+Analytic+Trends+for+Today's+Businesses-p-9781118147603**

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Title of the Paper: Data Science using Python

Semester: V/VI

Course Code	SECCAT02	Course Delivery Method	Class Room / Blended Mode – Both
Credits	3	CIA Marks	30
No. of Lecture Hours / Week	3	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2022-23	Year of Offering: 2022 - 23	Year of Revision: ---	Percentage of Revision: 0%

Course Objective: The main objective of the course is to provide students with the basic concepts of Python, its syntax, functions and packages to enable them to write scripts for data manipulation and analysis. The course develops skills of writing and running a code using Python.

Course Outcomes: Students at the successful completion of the course will be able to:

CO_1	Understand the need and importance of data science.(PO5,PO7)
CO_2	Understand basic concepts of python and implementing control structures in python.(PO5)
CO_3	Implement strings and other data structures in python(PO5,PO7)
CO_4	Learn and Implement functions and modules in python.(PO5)
CO_5	Learn and Implement data cleaning and plotting using pandas.(PO5,PO7)

Syllabus

Course Details

Unit	Learning Units	Lecture Hours
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?	12
II	**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	12
III	**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.	14
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	10
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	12

Prescribed Books:

1. Steven cooper--- Data Science from Scratch, Kindle edition
2. Reemathareja—Python Programming using problem solving approach, Oxford Publication

Reference Books:

1.Wes McKinney--- Python for Data Analysis ,O'REILLY

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COMPUTER SCIENCE	SECCAT02	2022-23	B.COM (CA)

SEMESTER – V/VI **PAPER – VII** **Max. Marks 70**

Model Paper: Data Analysis using Python

NO of Hours: 3 **No Of Credits: 3** **Pass Marks 28**

Section – A

Answer any Four questions.
(At least 1 question should be given from each Unit) **(4 x 5=20Marks)**

1. Write advantages of data science. (CO1, L1)
2. What are the qualifications of data scientist? (CO1, L2)
3. Explain about the history of python.(CO2, L1)
4. Explain about string operations in python.(CO3, L1)
5. Explain about the date and time module in python.(CO4, L1)
6. What is data cleaning? Explain about duplicates in pandas.(CO5, L1)

Section – B

Answer all questions.
(Two questions should be given from each unit with internal choice) **(5x10=50Marks)**

9. (a) What is Data Science? Explain the Responsibilities of a data scientist.(CO1, L2)

OR

9. (b) Explain the use of python for data science?(CO1, L1)

10. (a) Explain different types of conditional statements with examples.(CO2, L1)

OR

10. (b) Explain different types of Looping statements with examples.(CO2, L1)

11. (a) What is a list? Explain different operations of lists with examples in python. (CO3, L2)

OR

11. (b)What is a Dictionary? Explain accessing values in it with examples in python (CO3, L2)

12. (a) Explain Function definition, calling & different types in python with example.(CO4, L1)

OR

12. (b) Explain about random and math module in python with an example.(CO4, L1)

13. (a) What is a data frame? Illustrate the concept of analysing the data frames.(CO5, L2)

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COMPUTER SCIENCE	SECCAT02	2022-23	B.COM (CA)

SEMESTER – V/VI **PAPER – VII** **Max. Marks 50**

Lab List: DATASCIENCE USING PYTHON LAB

No. of Hours per week: 3 **External: 40** **Internal: 10** **Credits: 2**

I. Course Outcomes: Students at the successful completion of the course will be able to:

CO1: Implement simple programs in basics of python.(PO5)
CO2: Implement control structures in python.(PO5)
CO3: Implement data structures like strings, list, tuples, dictionaries in python.(PO5,PO7)
CO4:Implementation of data frames, data cleaning and plotting in pandas.(PO5,PO7)

II: Practical (Laboratory) Syllabus: (30 Periods)

1. Python Program to Find the Square Root
2. Python Program to Swap Two Variables
3. Python Program to Generate a Random Number
4. Python Program to check if a Number is odd or Even
5. Python Program to Find the Largest Among Four Numbers
6. Python Program to Check Prime Number
7. Python Program to Display the multiplication Table
8. Python Program to Print the Fibonacci sequence
9. Python Program to Check Armstrong Number
10. Python Program to Find the Sum of Natural Numbers
11. Python Program to Make a Simple Calculator
12. Python Program to Find Factorial of Number Using Recursion
13. Python Program to Add Two Matrices
14. Python Program to Multiply Two Matrices
15. Python Program to Check Whether a String is Palindrome or Not
16. Python Program to perform operations on strings.
17. Python Program to create a list and perform operations on its contents.
18. Python Program to perform operations on tuples.
19. Python Program to create a dictionary and print its content.
20. Python program to import data from CSV file using pandas.
21. Python program to demonstrate plots

III. Lab References:

1. Reemathareja—Python Programming using problem solving approach,Oxford Publication

Reference Materials on the Web/web-links:

1. https://www.w3schools.com/python/
2. https://www.geeksforgeeks.org/python-basics/

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Title of the Paper: MOBILE APPLICATION DEVELOPMENT

Semester: V/VI

Course Code	SECCAT03	Course Delivery Method	Class Room / Blended Mode - Both
Credits	3	CIA Marks	30
No. of Lecture Hours / Week	3	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2022-23	Year of Offering: 2022 - 23	Year of Revision: ----	Percentage of Revision: 0%

Course Objective: Covers introductory mobile application development for the Android Operating System using XML and Java. Includes developing simple applications that could run on Android phones and tablets. Covers Android application development phases, terminologies, application design, and coding.

Course Outcomes: Students at the successful completion of the course will be able to:

CO_1	Identify basic terms, tools and software related to android systems.(PO5)
CO_2	Describe components of IDE, understand features of android development tools.(PO5)
CO_3	Describe the layouts and controls and different views available.(PO5,PO7)
CO_4	Understand Android system architecture and security model.(PO5)
CO_5	Understand the features of services and able to publish android Application.(PO5,PO7)

Syllabus

Course Details

Unit	Learning Units	Lecture Hours
I	Introduction to android, Open headset Alliance, Android ecosystem, Need of android, Features of android, Tools and Software required For developing an Application, Android architecture.	10
II	Operating system, java JDK, Android SDK, Android development tools, Android virtual devices, Steps to install and configure Android studio and sdk.	14
III	Control flow, directory structure, Components of a screen, Fundamental UI design, Linear layout, absolute layout, table layout, relative layout, Text view, Edit text, Button image button, radio button, toggle button, Radio group, checkbox, and progress bar ,List view, grid view, image view, scroll view, Time and date picker	12
IV	Android platform services, Android system Architecture, Android Security model, Applications development: creating small application.	12
V	Introduction of MIT App Inventor, Application Coding, Programming Basics & Dialog, More Programming Basics, Alarm Clock Application, Audio & Video, Drawing Application, File, Game, Device Location, Web Browsing.	12

References/ Text Book/ e-books/websites

Text Books:

1. Erik Hellman,"AndroidProgramming–Pushing theLimits",1stEdition,WileyIndiaPvtLtd,2014.
2. App Inventor:create our own Android apps byWolber,David(DavidWayne)

Reference Books:

1. DawnGriffithsandDavidGriffiths,"HeadFirstAndroidDevelopment",1stEdition,O'ReillySPDPublishers,2015.
2. JFDiMarzio,"BeginningAndroidProgrammingwithAndroidStudio",4thEdition,WileyIndia PvtLtd, 2016.ISBN-13: 978-8126565580

Web resources:

https://www.udacity.com/course/developing-android-appsfundamentals--ud853-nd
http://www.appinventor.mit.edu/

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(**With Effect from Academic Year 2022-23**)

COMPUTER SCIENCE	**SECCAT03**	**2022-23**	**B. Com (CA)**

SEMESTER – V/VI **PAPER – VI** **Max. Marks 70**

Syllabus: Mobile Application Development

NO. Of. Hours: 3 **NO. Of Credits: 3** **Pass Marks 28**

Section- A

Answer any Four questions.

(At least 1 question should be given from each Unit) **(4 x 5 = 20Marks)**

1. What is the Need of Android?(CO1,L1)
2. Explain the Steps to install and configure Android studio and sdk.(CO2,L2)
3. What are the Components of a screen?(CO3,L1)
4. What are the Android platform services?(CO4,L1)
5. How to write Application Coding?(CO5,L1)
6. Explain image button and radio button with an example.(CO3,L2)

Section- B

Answer all questions. (Two questions should be given from each unit with internal choice)

(5X10=50Marks)

9. (a) Explain Android Architecture.(CO1,L2)

OR

(b) Write Features of Android.(CO1,L1)

10. (a) Explain Android development tools.(CO2,L2)

OR

(b) Explain Android virtual devices.(CO2,L2)

11.(a)Explain about Linear layout, absolute layout, table layout and relative layout.(CO3,L2)

OR

(b) Discuss about List view, grid view, image view, scroll view.(CO3,L6)

12. (a) How to create a small application using Android Application?(CO4,L6)

OR

(b) Describe Android system Architecture.(CO5,L6)

13. (a)Explain Audio &Video Concepts.(CO5,L2)

OR

(b) Develop Alarm clock application.(CO5,L6)

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(**With Effect from Academic Year 2022-23**)

COMPUTER SCIENCE	SECCAT03	2022-23	B. Com (CA)

SEMESTER – V/VI **PAPER – VI** **Pass Marks 25** **Max Marks:50**

Lab List: MOBILE APPLICATION DEVELOPMENT LAB

No. of Hours per week: 2 **External: 25** **Internal: 25** **Credits: 2**

Course Outcomes: Students at the successful completion of the course will be able to:

CO1: Understand the android platform.(PO5,PO7)

CO2: Design and implementation of various mobile applications.(PO5,PO7)

Practical (Laboratory) Syllabus: **(30 Periods)**

Lab Exercises

1. Demonstrate mobile technologies and devices.
2. Demonstrate Android platform and applications overview.
3. Implement User interface design layouts.
4. Working with texts, shapes, buttons and lists.
5. Develop a calculator application.
6. Develop application in android using different views.
7. Implement an application that creates a alarm clock.
8. Develop audio and video drawing application.

Lab References:

1. Erik Hellman, "Android Programming–Pushing theLimits",1stEdition,WileyIndiaPvt Ltd,2014.
2. App Inventor:create your own Android apps by Wolber, David (DavidWayne).

Reference Materials on the Web/web

1. https://www.udacity.com/course/developing-android-appsfundamentals--ud853-nd
2. http://www.appinventor.mit.edu/

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Title of the Paper: CYBER SECURITY AND MALWARE ANALYSIS

Semester: V/VI

Course Code	SECCAT04	Course Delivery Method	Class Room / Blended Mode - Both
Credits	3	CIA Marks	30
No. of Lecture Hours / Week	3	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2022-23	Year of Offering: 2022-23	Year of Revision: ----	Percentage of Revision: 0%

Course Objective: This programme aims to provide a foundational platform for Cyber Security Aspirants by providing Cyber Security Awareness and Training that heighten the chances of catching a scam or attack before it is fully enacted, minimizing damage to the resources and ensuring the protection of information technology assets.

Course Outcomes: Students at the successful completion of the course will be able to:

CO_1	Understand the computer networks, networking tools and cyber security.(PO6,PO7)
CO_2	Learn about NIST Cyber Security Framework.(PO6,P07)
CO_3	Understand the OWASP Vulnerabilities.(PO6, PO7)
CO_4	Implement various Malware analysis tools.(PO6,P07)
CO_5	Understand about Information Technology act2000.(PO6,P07)

Syllabus

Course Details

Unit	Learning Units	Lecture Hours
I	**Introduction to Networks & cyber security:** Computer Network Basics, Computer network types, OSI Reference model, TCP/IP Protocol suite, Difference between OSI and TCP/IP, What is cyber, cyber-crime and cyber-security, All Layer wise attacks, Networking devices: router, bridge, switch, server, firewall, How to configure :router, How to create LAN, Network tools, IP scanner, Port scanner, Vulnerability scanner, Command tools—net stack ,trace route, lookup, tcp view.	13
II	**NISTN Cyber security framework**: Introduction to the components of the framework, Cyber security Framework Tiers, What is NIST Cyber security framework, Features of NIST Cyber security framework, Functions of NIST Cyber security framework, Turn the NIST Cyber security Frame work into Reality/implementing the framework.	12
III	**OWASP** : What is OWASP? OWASP Top10Vulnerabilities, Injection, Broken Authentication, Sensitive Data Exposure, XML External Entities (XXE), Broken Access Control, Security Misconfiguration, Cross-Site Scripting(XSS), Insecure Deserialization, Using Components with Known Vulnerabilities, Insufficient Logging and Monitoring, OWASP Juice Shop, Web application firewall.	13
IV	**MALWARE ANALYSIS :** What is malware, Types of malware, Key loggers, Trojans, Ransom ware, Root kits, Antivirus, Firewalls, Malware analysis, VMware, How to uses and box, How to create virtual machine, Process explorer, Process monitor, SYS-internals Suite, SOC-security operations controls-Solar winds (study the tools), Network intrusion detection, Wire shark, IDS, IPS, Snort.	12
V	**CYBER SECURITY Legal Perspectives :** Cyber crime and the legal landscape around the world, IndianITACT2000—CybercrimeandPunishments, Weak areas of ITACT2000, Challenges to Indian law and cybercrime scenario in India, Amendments of the Indian IT Act.	10

References/ Text Book/ e-books/websites

TEXTBOOKS:

1. Computer Networks | Fifth Edition | By Pearson (6th Edition) |Tanenbaum, Feamster ,Wetherall
2. Computer Networking | A Top-Down Approach | Sixth Edition | By Pearson | KuroseJamesF. Ross Keith W.
3. Cyber SecuritybySunitBelapure,NinaGodbole|WileyPublications
4. TCP/IP ProtocolSuite |Mcgraw-hill|Forouzan|FourthEdition

WEBSITEREFERENCES:

1. https://csrc.nist.gov/Projects/cybersecurity-framework/nist-cybersecurity-framework-a-quick-start-
2. https://owasp.org/www-project-top-ten/
3. https://owasp.org/www-project-juice-shop/

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COMPUTER SCIENCE	SECCAT04	2022-23	B.Sc.(MPCs)

SEMESTER – V/VI **PAPER – VII** **Max. Marks 70**

Title: CYBER SECURITY AND MALWARE ANALYSIS

No of Credits: 3 **No.of.Hours:3** **Pass Marks 28**

Section-A

Answer any Four questions.
(At least 1 question should be given from each Unit) **(4X5=20Marks)**

1. Discuss all Layer wise attacks.(CO1,L6)
2. Explain about Cyber, Cyber-Crime and Cyber-Attacks.(CO1,L2)
3. Explain Features of NIST Cyber Security framework.(CO2,L2)
4. Write about Web Application firewalls in OWASP.(CO3,L1)
5. Discuss about Key loggers, Trojans, Root kits.(CO4,L6)
6. Explain Weak areas of IT ACT 2000.(CO5,l2)

Section-B

Answer all questions. (Two questions should be given from each unit with internal choice)

(5x10=50Marks)

9(a). Describe in detail TCP/IP Protocol Suite with diagrammatic representation.(CO1,L6)

OR

9(b). Explain different types of Network Tools with examples.(CO1,L2)

10(a). Discuss about components of framework and functions of NIST Cyber Security frameworks.(CO2,L6)

OR

10(b). Explain how to turn NIST Cyber Security framework into reality framework. (CO2,L6)

11(a). Explain OWASD Juice shop in detail. (CO3,L2)

OR

11(b). Explain any 6 OWASP vulnerabilities.(CO3,L2)

12(a). Discuss about different types of Malware analysis in detail. (CO4,L6)

OR

12(b). How to detect Network intrusion? Explain?(CO4,L1)

13(a). Explain what are the Challenges are to Indian law and cybercrime scenario in India. (CO5,L2)

OR

13(b). Discuss Indian IT-ACT 2000.Explain different Cybercrime and Punishments respectively.(CO5,L6)

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(**With Effect from Academic Year 2022-23**)

COMPUTER SCIENCE	**SECCAT04**	**2022-23**	**B. COM(CA)**

SEMESTER – V/VI **PAPER – VII** **Max. Marks 50**

Lab List: MULTIMEDIA TOOLS AND APPLICATIONS LAB

No. of Hours per week: 3 **External: 40** **Internal: 10** **Credits: 2**

Title :CYBER SECURITY AND MALWARE ANALYSYS LAB

I. Course Outcomes: Students at the successful completion of the course will be able to:

CO1: Implement LAN by using a switch and Router.(PO5)

CO2: Implement the task of creating mail messages by using fake mail id by using the "Fake mailer" website.(PO5)

CO3: Implement port scanning mechanism.(PO5)

CO4: Implement SQL Injection attack.(PO5)

CO5: Implement to access a locked computer.(PO5)

II: Practical (Laboratory) Syllabus: **(30 Periods)**.

Lab Exercises

The purpose of this course is to impart practical understanding on Cyber security and protection of electronic systems and information from malware attacks.

1. Configure LAN by using a switch
2. Configure a LAN by using Router
3. Steps to attack a victim computer by using "Pro Rat" Trojan tool
4. Perform the packet sniffing mechanism by download the “wire shark” tool and extract the packets
5. Perform the task of creating mail messages by using fake email id by using the "fake mailer" website(https://emkei.cz)
6. Perform the IP scanning mechanism by using “tracert” and “arp” commands
7. Perform the port scanning mechanism by using NMAP tool
8. Perform an SQL Injection attack and its preventive measure to avoid Injection attack
9. Perform an activity to access a locked computer without knowing the user's password.

III. Lab References:

1. Computer Networks | Fifth Edition | By Pearson (6th Edition) |Tanenbaum, Feamster &Wetherall
2. Computer Networking | A Top-Down Approach | Sixth Edition | By Pearson | KuroseJamesF. Ross Keith W.

IV. Reference Materials on the Web/web

1. https://csrc.nist.gov/Projects/cybersecurity-framework/nist-cybersecurity-framework-a-quick-start-guide

https://owasp.org/www-project-top-ten/

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Title of the Paper: E – COMMERCE APPLICATION DEVELOPMENT

Semester: V/VI

Course Code	SECCAT05	Course Delivery Method	Class Room / Blended Mode – Both
Credits	3	CIA Marks	30
No. of Lecture Hours / Week	3	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2022-23	Year of Offering: 2022-23	Year of Revision: ---------	Percentage of Revision: 0%

Course Objective:

To educate students in ecommerce and ecommerce applications.

Course Outcomes: Upon successful completion of the course, a student will be able to:

CO_1	To apply in an integrative and summative fashion the students' knowledge in all fields of business studies by drafting a website presence plan.
CO2	To understand the factors needed in order to be a successful in ecommerce
CO3	To gain the skills to bring together knowledge gathered about the different components of building a web presence
CO4	To critically think about problems and issues that might pop up during the establishment of the web presence
CO5	To apply Word Press as a content management system (CMS), Plan their website by choosing color schemes, fonts, layouts, and more

Syllabus

Course Details

Unit	Learning Units	Lecture Hours
I	Introduction to E– commerce: Meaning and concept – E– commerce , E– commerce v/s Traditional Commerce , E– Business & E– Commerce – History of E– Commerce , EDI – Importance, features & benefits of E– Commerce , Impacts, Challenges & Limitations of E– Commerce	12
II	Business models of E – Commerce: Business to Business , Business to customers ,Customers to Customers , Business to Government , Business to Employee , Influencing factors of successful E– Commerce , Architectural framework of Electronic Commerce , Web based E Commerce Architecture. Internet Commerce	12
III	Electronic data Interchange , EDI Technology ,EDl- Communications , EDI Agreements , E– Commerce payment system. Digital Economy	12
IV	A Page on the web - HTML Basics , Client Side scripting -JAVA SCRIPT basics , Server side Scripting- PHP basics	12
V	Logging in to Your Word press Site , word press dash board , creating your first post , adding photos and images , creating hyper link , adding categories and tags	12

Textbooks:

1. Turban, Rainer, and Potter, Introduction to E-Commerce, second edition, 2003
2. H. M. Deitel, P. J. Deitel and T. R. Nieto, E-Business and E-Commerce: How to Programe, Prentice hall, 2001
3. Word Press All-in-One For Dummies -written by Lisa Sabin Wilson with contributions by Michael Torbert, Andrea Rennick, Cory Miller, and Kevin Palmer

Reference Books:

1. Elias. M. Awad, “Electronic Commerce", Prentice-Hall of India Pvt Ltd.
2. Ravi Kalakota, Andrew B. Whinston, "Electronic Commerce-A Manager's guide", Addison-Wesley
3. https://w3cschools.com
4. David Whitely, E-Commerce: Strategy, Technologies and Applications, Tata McGraw Hill.

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COMPUTER SCIENCE	**SECCAT05**	**2022-23**	**B.COM (CA)**

SEMESTER – V/VI **PAPER – VI** **Max. Marks 70**

Model Paper: **E – COMMERCE APPLICATION DEVELOPMENT**

NO of Hours: 3 **No Of Credits: 3** **Pass Marks 28**

SECTION - A

Answer any Four of the following
(At least 1 question should be given from each Unit) **(4X5=20Marks)**

1. Differentiate e commerce vs. traditional commerce. (CO1, L4)
2. Write about limitations of e commerce (CO1, L6)
3. Write about B2C. (CO2, L1)
4. Write a short note on EDI. (CO3, L1)
5. Briefly write about CSS. (CO4, L1)
6. Discuss about the need of word press. (CO5, L2)

SECTION – B

Answer *all* the following questions **(5X10=50Marks)**

9. (a) Explain about challenges of E - Commerce.(CO1, L1)

OR

(b) Explain about features and benefits of E - Commerce. (CO1, L1)

10. (a) Summarize the influencing factors of successful E - Commerce. (CO2, L2)

OR

(b) Summarize B2B, B2G Models. (CO2, L2)

11. (a) Explain about EDI communication. (CO3, L1)

OR

(b) Describe about E – Commerce payment System. (CO3, L1)

12. (a) Explain about various HTML tags. (CO4, L1)

OR

(b) Explain about server side scripting with example. (CO4, L1)

13. (a) Explain about adding categories and tags in word press. (CO5, L2)

OR

(b) Explain about adding photos and images in word press. (CO5, L2)

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COMPUTER SCIENCE	SECCAT05	2022-23	B.COM (CA)

SEMESTER – V/VI **PAPER – VI** **Max. Marks 50**

Lab List: **E – COMMERCE APPLICATION DEVELOPMENT Lab**

No. of Hours per week:3 **External: 40** **Internal: 10** **Credits: 2**

I. Course objectives:

To educate students in developing commerce applications.

Course outcomes:

By the end of the course, students will be:

CO1: Able to design home page for an e commerce web application. (PO6, PO7)

CO2: Able to perform validation using PHP. (PO6, PO7)

CO3: Able to design catalogue. (PO6, PO7)

CO4: Able to implement access control mechanisms in web applications. (PO6, PO7)

CO5: Able to design application for any given e-commerce scenario. (PO6, PO7)

II: Practical (Laboratory) Syllabus: (30 Periods)

(Since, the proposed SECs are connected to Computer Programming/Software Tools and Skill enhancement, the students need to get exposure on the syllabus content by practicing on the computer even though there is no formal assignment of credits and laboratory hours for practical sessions. So, as part of the Co-curricular activities and continuous assessment, students should be engaged in practicing on computer for at least 30 hours per semester.)

Case study of e –commerce

1. Home page design of web site
2. Validation using PHP
3. Implement Catalogue design
4. Implement Access control mechanism(eg: username and password)
5. Case study on business model of online E-Commerce store

Note: The list of experiments need not be restricted to the above list. Detailed list of Programming/software tool based exercises can be prepared by the concerned faculty members.

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Title of the Paper: REAL TIME GOVERNANCE SYSTEM (RTGS)

Semester: V/VI

Course Code	SECCAT06	Course Delivery Method	Class Room / Blended Mode - Both
Credits	3	CIA Marks	30
No. of Lecture Hours / Week	3	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2022-23	Year of Offering: 2022 - 23	Year of Revision: ----	Percentage of Revision: 0% (shuffled from 4th to 3rdsem)

Course Objective:

To educate students in terms of e governance, its infrastructure and implementation.

Course Outcomes: Upon successful completion of this course, students will have the knowledge and skills to:

CO_1	Understand the terms regarding Governance, E-Governance and RTGS (PO6, PO7)
CO2	Learn about E-Governance Infrastructure (PO6, PO7)
CO3	Understand the E-Governance implementation in several countries (PO6, PO7)
CO4	Understand the E-Governance implementation in several Indian states (PO6, PO7)
CO5	Understand the applications of RTG (PO6, PO7)

Syllabus

Course Details

Unit	Learning Units	Lecture Hours
I	**Introduction to E-Governance** Government, Governance and Good Governance, What is E-Governance or Electronic Governance? E-Government and E-Governance: A conceptual Analysis , Objectives , Components , application domains , four phase model , implementing E-Governance ,issues while implementing E-Governance , Opportunities and challenges . Types of E-Governance , What is Real-Time Governance (RTG) , Real Time Governance Society (RTGS)	12
II	**E-Governance Infrastructure** Data Systems infrastructure , Executive Information Systems , Management Information Systems ,Knowledge Management Systems , Transaction Processing Systems . Legal Infrastructural preparedness , IT Act 2000 , Challenges to Indian law and cybercrime scenario in India , Amendments of the Indian IT Act . Institutional Infrastructural preparedness , Internet , intranet , extranet • Human Infrastructural preparedness , Top-level management , Middle-level management, Low-level management • Technological Infrastructural preparedness ,Information and communications technology , Data Warehousing , Cloud Computing.	12
III	**E-Governance: Country Experience** INDIA ,US, UK ,AUSTRALIA , DUBAI	12
IV	**E-Governance in India** Andhra Pradesh , Karnataka , Kerala , Uttar Pradesh , Madhya Pradesh , West Bengal ,Gujarat UNIT 5: Latest Applications in Real Time Governance 10hrs Agriculture ,Rural Development ,Health care ,Education ,Tourism , Commerce and Trade	12
V	**Latest Applications in Real Time Governance** Agriculture ,Rural Development ,Health care ,Education ,Tourism , Commerce and Trade	12

III Textbooks:

1. E-Governance: concepts and case studies| CSR Prabhu| Prentice-Hall|
2. E-Governance| Niranjanpani, Sanhari Mishra | Himalaya Publishing House

Website References:

1. http://www.egov4dev.org/success/case/
2. https://vikaspedia.in/e-governance/resources-for-vles
3. https://altametrics.com/en/information-systems/information-system-types.html
4. https://core.ap.gov.in/CMDashBoard/Index.aspx

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COMPUTER SCIENCE	SECCAT06	2022-23	B.Com.(C.A.)

SEMESTER – V/VI **PAPER – VII** **Max. Marks 70**

Model Paper: REAL TIME GOVERNANCE SYSTEM (RTGS)

No.of Hours:3 **No.of Credits:3** **Pass Marks 28**

SECTION - A

Answer any Four of the following:
(At least 1 question should be given from each Unit) **(4X5=20Marks)**

1. Discuss the need of RTGS. (CO1, L2)
2. Write about MIS. (CO2, L6)
3. Describe the goals of e – governance. (CO2,L1)
4. Write a short note on e – governance in US. (CO3, L1)
5. Describe implementation of e – governance in Gujarat. (CO4, L1)
6. Discuss about applications of RTGS.(CO5, L2)

SECTION – B

Answer all the following questions

(5X10=50Marks)

9. (a) Explain about types of e governance. (CO1, L1)

OR

(b) Explain about objectives and components of e governance. (CO1, L1)

10. (a) Explain about Indian IT ACT 2000 (CO2, L1)

OR

(b) Explain about various levels of management. (CO2, L1)

11. (a) Explain about E – governance policy of India. (CO3, L1)

OR

(b) Explain about E – governance policy of Australia. (CO3, L1)

12. (a) Explain about E – Governance policy of Andhra Pradesh. (CO4, L1)

OR

(b) Explain about E – Governance policy of Kerala. (CO4, L1)

13. (a) Explain the role of real time governance in agriculture sector. (CO5, L1)

OR

(b) Explain the role of real time governance in health sector. (CO5, L2)

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COMPUTER SCIENCE	SECCAT06	2022-23	B.Com.(C.A.)

SEMESTER – V/VI **PAPER – VII** **Max. Marks 50**

LAB LIST:REAL TIME GOVERNANCE SYSTEM (RTGS) Lab

No. of Hours per week: 2 **External: 40** **Internal: 10** **Credits: 2**

I. Course objectives:
To educate students in developing e commerce applications.

Course outcomes:
By the end of the course, students will be:

CO1: Able to design home page for an e commerce web application. (PO6, PO7)
CO2: Able to perform validation using PHP. (PO6, PO7)
CO3: Able to design catalogue. (PO6, PO7)
CO4: Able to implement access control mechanisms in web applications. (PO6, PO7)
CO5: Able to design application for any given e-commerce scenario. (PO6, PO7)

II: Practical (Laboratory) Syllabus: (30 Periods)

(Since, the proposed SECs are connected to Computer Programming/Software Tools and Skill enhancement, the students need to get exposure on the syllabus content by practicing on the computer even though there is no formal assignment of credits and laboratory hours for practical sessions. So, as part of the Co-curricular activities and continuous assessment, students should be engaged in practicing on computer for at least 15 hours per semester.)

Note: Here the students have to gather the details in computer lab by surfing several websites & Google Search Engines and submit the report to the class/lab instructor before leaving the lab.

1. Write a Report on the role of Nationwide Networking in E-Governance
2. Write a Report on SETU: A Citizen Facilitation Centre in India, regarding it's successful or failure journey.
3. Write a Report on National Cyber Security Policy, how it is useful to Indian citizens.
4. Write a Report on mee-seva/Village Secretariat/Ward secretariat, a new paradigm in citizen services.
5. Write a Report on how Andhra Pradesh is implementing RTGS in Agriculture.
6. Write a Report on how Andhra Pradesh is implementing RTGS in social welfare schemes
7. Write a Report on how Andhra Pradesh is implementing RTGS in waste lands, agricultural lands and house properties.
8. Write a Report on Electronic Birth Registration in any one state of our country.

Note: The list of experiments need not be restricted to the above list. Detailed list of Programming/software tool based exercises can be prepared by the concerned faculty members.

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Title of the Paper: MULTIMEDIA TOOLS AND APPLICATIONS

Semester: V/VI

Course Code	SECCAT07	Course Delivery Method	Class Room / Blended Mode - Both
Credits	3	CIA Marks	30
No. of Lecture Hours / Week	3	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2022-23	Year of Offering: 2022 -23	Year of Revision: ----	Percentage of Revision: 0%

Course Objective: Multimedia is a technology engaging variety of media .Multimedia is the collection of Text, audio, video, animation, and graphics. The concept of paperless society is effective with the invention of multimedia. Multimedia helps the user in providing information from different media on one platform. It's enhanced the concept of networking and resource sharing.

Course Outcomes: Students at the successful completion of the course will be able to:

CO_1	Gain knowledge on the concepts related to Multimedia.**(PO5)**
CO2	Understand the concepts like image data representation and color modes.**(PO5)**
CO3	Understand the different types of video signals and digital audio.**(PO5)**
CO4	Know about multimedia data compression types and audio compression standards **(PO5)**
CO5	Know about basic video compression techniques**.(PO5,P07**)

Syllabus

Course Details

Unit	Learning Units	Lecture Hours
I	**Introduction to multimedia** What is Multimedia? , Components of Multimedia System, Multimedia Research Topics and Projects, Multimedia and Hypermedia, Multimedia Authoring metaphors, Multimedia Production, Multimedia Presentation, Some Technical Design Issues, Automatic Authoring.	12
II	**Image Data Representations and color models** Color science Human vision Image data types, **Black & white images**-1-bit images (Binary image), 8 -bit (Gray -level images), **Color images**- 24-bit color images, 8-bit color images, Color models. Color science Human vision Image data types, **Black & white images**-1-bit images (Binary image), 8 -bit (Gray -level images), **Color images**- 24-bit color images, 8-bit color images, Color mo	12
III	**Fundamental concepts in video** Types of Video Signals- Analog Video, Digital Video, Basics of Digital Audio: What is Sound?, Digitization of Sound, Quantization and Transmission of Audio, Pulse code modulation, Differential coding of audio, Predictive coding, DPCM.	14
IV	**Multimedia Data Compression** Introduction- Basics of Information Theory, Lossless Compression Algorithms, Fix-Length Coding, Run-length coding, Differential coding, Dictionary-based coding, Variable Length Coding, Shannon-Fano Algorithm, Huffman Coding Algorithm. Audio Compression standards: Introduction, Psychoacoustics model, MPEG Audio	12
V	**Basic Video Compression Techniques** Introduction to Video compression, Video Compression with Motion Compensation, Video compression standard H.261, Video compression standard MPEG-1	10

1. Text Books

Fundamentals of Multimedia by Ze-Nian Li & Mark S. Drew. Publisher: Prentice Hall

2. Reference Books:

1. An introduction to digital multimedia by Savage, T. M. and Vogel, K. E. 2008.
2. Digital Multimedia by Nigel Chapman & Jenny Chapman. 2009.

3. Reference Materials on the Web/web-links:

https://www.tutorialspoint.com/multimedia
https://ksuit342.wordpress.com/lectuers/

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COMPUTER SCIENCE	SECCAT07	2022-23	B.Com.(C.A.)

SEMESTER – V/VI **PAPER – VI** **Max. Marks 70**

Model Paper: Multimedia Tools and Applications

NO of Hours: 3 **No Of Credits: 3** **Pass Marks 28**

Section-A

Answer any FIVE questions.
(At least 1 question should be given from each Unit) **(4 x 5=20Marks)**

1. What is multimedia? Explain components of multimedia system. **(CO1, L1)**
2.Discuss multimedia production.**(CO1, L6)**
3. Explain 8-Bit(gray-level images).**(CO2,L2)**
4. What is sound? Explain digitization of sound. **(CO3, L1)**
5. Discuss Run-length coding. **(CO4, L6)**
6.Compare and contrast H.261 and MPEG-1. **(CO5, L2)**

Section-B

Answer all questions. (Two questions should be given from each unit with internal choice)
(5 x 10 = 50M)

9.(a) Discuss in detail about multimedia and hypermedia. **(CO1, L6)**

OR

(b) Explain about multimedia presentation. **(CO1, L2)**

10.(a) Discuss about 24-bit color images and 8-bit color images. **(CO2, L6)**

OR

(b) Explain Color models in images. **(CO2, L2)**

11.(a) Discuss about PCM(pulse code modulation). **(CO3, L6)**

OR

(b) Explain High-Definition TV(HDTV). **(CO3, L2)**

12.(a) Discuss Huffman- coding algorithm. **(CO4, L6)**

OR

(b) Write about MPEG audio compression algorithm. **(CO4, L1)**

13.(a) Explain video compression based on motion compensation. **(CO5, L2)**

OR

(b) Write about Video compression standard H.261. **(CO5,L1)**

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(**With Effect from Academic Year 2022-23**)

COMPUTER SCIENCE	SECCAT07	2022-23	B.COM(CA)

SEMESTER – V/VI **PAPER – VI** **Max. Marks 50**

Lab List: MULTIMEDIA TOOLS AND APPLICATIONS LAB

No. of Hours per week: 3 External: 40 **Internal: 10** **Credits: 2 Pass Marks:30**

I. Course Outcomes:

Students at the successful completion of the course will be able to:

CO1: Create/modify a new image with open source applications such as GIMP. (PO5)

CO2: Manipulate images using graphic tools. (PO5)

CO3: Learn basic layer mask essentials. (PO5)

CO4: Compress audio and video files. (PO5, PO7)

CO5: Create a realistic shadow. (PO5)

II: Practical (Laboratory) Syllabus: (30 Periods)

1. Editing images using GIMP
2. Improve the Quality of your Image in GIMP
3. Introduction to Layer Masks.
4. Create an impressive background in GIMP
5. Applying Shadow & Highlight effects in images
6. Black& white and color photo conversion.
8. Using File Seizer Software for Audio compression.
9. Using File seizer Software for Video compression.

III. Lab References:

Fundamentals of Multimedia by Ze-Nian Li & Mark S. Drew. Publisher: Prentice Hall

Reference Materials on the Web/web-links

https://ksuit342.wordpress.com/lectuers/

https://www.tutorialspoint.com/multimedia

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Vuyyuru-521165.NAAC reaccredited at 'A' level

Autonomous -ISO 9001 – 2015 Certified

Title of the Paper: DIGITAL IMAGING

Semester: V/VI

Course Code	SECCAT08	Course Delivery Method	Class Room / Blended Mode - Both
Credits	3	CIA Marks	30
No. of Lecture Hours / Week	3	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2022-23	Year of Offering: 2022 -23	Year of Revision: ----	Percentage of Revision: 0%

Course Objective: To introduce the concepts of image processing and basic analytical methods to be used in image processing. To familiarize students with image enhancement and restoration techniques, To explain different image compression techniques.

Course Outcomes: Students at the successful completion of the course will be able to:

CO_1	Gain knowledge about Types of Graphics, Types of Objects, Types of video editing tools**(PO5)**
CO2	Show their skills in editing and altering photographs for through a basic understanding of the tool box.**(PO5)**
CO3	Gain knowledge in using the layers.**(PO5)**
CO4	Gain knowledge in using the selection tools, repair tools.**(PO5)**
CO5	Gain knowledge in using selection tools, applying filters and can show their skills.**(PO5)**

Syllabus

Course Details

Unit	Learning Units	Lecture Hours
I	Types of Graphics- Raster vs Vector Graphics ,Types of Objects - Audio formats, Video formats , Image formats , Text document formats, Types of video editing , Different color modes, Image Scanner- Types of Image Scanners	12
II	What is GIMP? , GIMP tool box window, Layers Dialog , Tool Options Dialog , Image window ,. Image window menus	12
III	**Improving Digital Photos** - Opening files, Rescaling saving files, Cropping, Brightening & Darkening 1 Rotating, Sharpening, Fixing Red Eye. **Introduction to layers-** What is layer?, Using layer to add text , Using move tool , Changing colors , Simple effects on layers, Linking layers together , Performing operations on layers, Using layers to copy and paste, Tour of layers dialog	14
IV	**Drawing**- Drawing lines and curves , Changing colors and brushes, Erasing , Drawing rectangles, Circles and other shapes, Outlining and filling regions, Filling with patterns and gradients, Importing brushes or gradients or making your own. **Selection**: Working with selections, Select by color and fuzzy, Select Bezier paths, intelligent scissors tool, Modifying selections with selection modes.	12
V	**Erasing and Touching Up**: Dodge and burn tool, Smudging tool , Clone tool , Sharpening using convolve tool, Blurring with Gaussian Blur , Correcting Color Balance, Hue , Saturation , Color balance using curves and levels. **Filters:** Filters , Blur, Enhance , Distort, Noise Filters.	10

References/ Text Book/ e-books/websites

Textbook: Beginning GIMP from Novice to professional by Akkana Peck, Second Edition, A press

Reference Materials on the Web/web-links:

https://www.mygreatlearning.com/gimp/tutorials/gimp-introduction

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COMPUTER SCIENCE	SECCAT08	2022-23	B.Com.(C.A.)

SEMESTER – V/VI **PAPER – VII** **Max. Marks 70**

Model Paper: Digital Imaging

NO of Hours: 3 **No Of Credits: 3** **Pass Marks 28**

SECTION – A

Short Answer Questions **(5 x 5=25M)**

Answer any Four questions. (At least 1 question should be given from each Unit)

1. Explain different types of image formats.**(CO1,L2)**
2. Write short notes on Tool box in GIMP.**(CO2, L1)**
3. Explain briefly about gradients in GIMP. **(CO4, L2)**
4. Write short notes on clone tool in GIMP.**(CO5,L1)**
5. Explain rotating ,sharpening in GIMP.**(CO3,L2)**
6. Describe different color modes in GIMP.**(CO1,L5)**

SECTION B

Answer all questions. **(5 x 10 = 50M)**

9(a) Describe the various color modes in GIMP with example.**(CO1,L5)**

OR

9(b) What are various types of audio and video formats in GIMP? Explain with example.**(CO1,L1)**

10(a) Describe image window menu in detail.**(CO2, L5)**

OR

10(b) Explain the window layers dialog in GIMP.**(CO2, L2)**

11(a) Describe Cropping-Brightening and Darkening in GIMP.**(CO3, L5)**

OR

11(b) Explain the steps to solve a fixed–red eye in GIMP.**(CO3,L2)**

12(a) Explain the working with selections in GIMP.**(CO4, L2)**

OR

12(b) Write about filling with patterns and gradients.**(CO4, L1)**

13(a) Describe the steps involved in Dodge, Burn and Smudging tool in GIMP.**(CO5,L5)**

OR

13(b)Write about distort and noise filters in GIMP.**(CO5,L1)**

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COMPUTER SCIENCE	SECCAT08	2022-23	B. COM(CA)

SEMESTER – V/VI **PAPER – VII** **Max. Marks 50**

Lab List: DIGITAL IMAGING LAB

No. of Hours per week: 3 **External: 40** **Internal: 10** **Credits: 2**

I. Course Outcomes: Students at the successful completion of the course will be able to:

CO1:Students will gain a working knowledge of Photoshop (PO5)

CO2:Student will be able to show their skills in editing and altering photographs for through a basic understanding of the tool bar. (PO5)

CO3:Student will gain knowledge in using the layers. (PO5)

CO4:Student will gain knowledge in using the selection tools, repair tools.(PO5,PO7)

CO5:Student will gain knowledge in using filters and can show their skills. (PO5)

II: Practical (Laboratory) Syllabus: (30 Periods)

1. Designing a Visiting card
2. Design Cover page of a book
3. Paper add for calling tenders
4. Passport photo design
5. Design a Pamphlet
6. Brochure designing
7. Titles designing
8. Custom shapes creation
9. Black & white and color photo conversion
10. Image size modification
11. Background changes
12. Texture and patterns designing
13. Filter effects & Eraser effects

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Title of the Paper: DATABASE MANAGEMENT SYSTEMS
Semester: III

Course Code	CSCT37	Course Delivery Method	Class Room / Blended Mode - Both
Credits	3	CIA Marks	25
No. of Lecture Hours / Week	4	Semester End Exam Marks	75
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2021	Year of Offering: 2021-22	Year of Revision: ----	Percentage of Revision: 0%

Course Objective: The main objective of the database is **to ensure that data can be stored and retrieved easily and effectively**. It is a compilation of data (records) in a structured way. In a database, the information is stored in a tabular form where data may or may not interlinked.

Course Outcomes:

CO_1	Understand database concepts and design. (PO5,P07)
CO2	Create databases using structured query language. (PO5, P07)
CO3	Apply data manipulation commands in SQL. (PO5, P07)
CO4	Learn the programming basics of PL/SQL. (PO5, P07)
CO5	Implementation of cursors in PL/SQL. (PO5, P07)

Syllabus		
Unit	**Learning Units**	**Lecture Hours**
I	**Database Concepts-A Relational approach**: Database - Relationships - DBMS - Relational data model - Integrity rules - Theoretical relational languages. **Database Design**: Data modeling -Dependency - Database design - Normal forms - Dependency diagrams – Denormalization.	12
II	**Structured Query Language (SQL):** Introduction – DDL - Naming rules and conventions - D a t a t ypes-Constraints- C reating a table- Displaying t able information - Altering an existing table – Dropping, renaming, and truncating table - Table types	12
III	**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 - Substitution variables - DEFINE command - CASE structure. **Functions and Grouping**: Built-in functions - Grouping data. **Joins and Views**: Join - join types-**Views:** Views - Creating a view - Removing a view - Altering a view.	12
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	12
V	**PL/SQL Cursors and Exceptions**: Cursors - Implicit & explicit cursors and attributes - cursor FOR loops - SELECT…FOR UPDATE - WHERE CURRENT OF Clause - cursor with parameters - Cursor variables - Exceptions - Types of exceptions - Records - Tables -Procedures -Functions -Triggers	12

Course Delivery method: Face-to-face / Blended

Course has focus on: Skill Development.

Websites of Interest:

- https://www.tutorialspoint.com/dbms/index.htm
- https://www.tutorialspoint.com/plsql/index.htm

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DATABASE MANAGEMENT SYSTEMS
MODEL PAPER

CLASS: B.Sc. (MSCS, MCCS,MPCS) **Max. Marks: 75M**
Course Code: CSCP37 **Min. Pass: 30M**
Semester: III **Time: 3 Hours**

SECTION – A

ANSWER ANY FIVE QUESTIONS **(5 X 5 =25 M).**

1. Define the following terms:
   1.Entity.2.Entity set.3.Attribute.4.Tuple.5Key. (CO1,L2)
2. What are the integrity rules of the relational model? (CO1,L2)
3. Describe the naming rules and conventions of SQL. (CO2,L2)
4. List out data types of SQL with a brief description. (CO2,L2)
5. Explain about WHERE clause. (CO3,L2)
6. How to add a record in to table. List various methods. (CO3,L3)
7. Explain the PL/SQL block structure. (CO4,L2)
8. What is the purpose of a Trigger? Give any example. (CO5,L2)

SECTION – B

ANSWER ALL THE QUESTIONS **5 X 10 =50 M.**

9. a) Explain about Normal forms with examples. (CO1, L2)

(Or)

b) What are different types of keys? What is their use? (CO1, L2)

10. a) How to enforce different types of constraints on tables? (CO2,L2)

(or)

b) Write a SQL query to create the following tables with the following fields and constraints and insert 5 records in each table in oracle.

Deptno	Number	Primary key
Dname	Varchar	
Loc	varchar	

Empno	Number	Primary key
Ename	Varchar	Should not null
Job	Varchar	
Hiredate	Date	Default system date
Mgr	Number	Foreign key to empno
Sal	Floating point number	Should not exceed one lakh
Comm	Floating point number	
Deptno	Number	Foreign key to deptno in dept table

Insert 5 records into each table (CO2,L3)

11. a)Give a brief description about joins and explain types of joins with examples. (CO3,L3)

(or)

b) What are the various types of functions available in Oracle? List and explain at least 4 from each category. (CO3,L3)

12. a) Explain about the control structures in PL/SQL. (CO4,L2)

(or)

b) How to manipulate (insert/update/delete) the data in PL/SQL? (CO4,L2)

13. a) Differentiate between implicit and explicit cursors with examples. (CO5, L3)

(or)

b) Explain about built in exceptions in Oracle. (CO5,L2)

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DATABASE MANAGEMENT SYSTEMS

COMPUTER SCIENCE	CSCP36	**2022-23**	**B.Sc.(MPCS,MCCs, MSCS)**

Year of Introduction: 2021 **Year of offering: 2021**
Semester: III **Credits: 1**
Hours Taught: 30 hrs. Per Semester **Max.Time**: 3 Hours

Course Prerequisites (if any): Basic knowledge in computers and internet concepts.

Course Description: This course focuses towards Database System Concepts and Architecture, ER models, relational algebra relational calculus, SQL and PL/SQL.

Course Objectives:

1. Enhance the knowledge and understanding of Database concepts and design.
2. Enhance the knowledge of the processes of Database Development using SQL
3. Enhance the knowledge of the processes of Database manipulation using SQL
4. Develop efficient PL/SQL programs to access Oracle databases

Course Outcomes: At the end of this course, students should be able to:

CO1: Understand database concepts and design. (PO5, P07)

CO2: Create databases using structured query language. (PO5, P07)

CO3: Apply data manipulation commands in SQL. (PO5, P07)

CO4: Learn the programming basics of PL/SQL. (PO5, P07)

CO5: Implementation of cursors in PL/SQL. (PO5, P07)

LAB LIST

1. Using Different operators
2. Using Control Structures
3. Implement Built-in functions
4. Implement update and Alter table
5. Implementing PL/SQL Block
6. Implement PL/SQL table and record
7. Using Functions
8. Using Cursors
9. Using Triggers

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Title of the Paper: Problem solving in C

Semester: III **CLASS B.Com(E-Commerce- Computers)**

Course Code	**CSCT11B**	Course Delivery Method	Class Room / Blended Mode - Both
Credits	3	CIA Marks	25
No. of Lecture Hours / Week	4	Semester End Exam Marks	75
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2020-21	Year of Offering: 2021 - 22	Year of Revision: ----	Percentage of Revision: 0%

Course Objective

This course aims to provide exposure to problem-solving through programming and introduce the concepts of the C Programming language.

Course Learning Outcomes:

Course Outcome No	Upon successful completion of the course, a student will be able to:	Program Outcome No.
CO1	Understand the evolution & functionality of Digital Computers and develop an algorithm for solving a given problem.	PO1, PO7, PSO1, PSO4
CO2	Understand tokens and control structures in C.	PO1, PO7, PSO1, PSO4
CO3	Understand arrays and strings and implement them.	PO1, PO7, PSO1, PSO4
CO4	Understand the right way of using functions, pointers, structures and unions in C	PO1, PO7, PSO1, PSO4
CO5	Develop and test programs written in C files	PO1, PO7, PSO1, PSO4

UNIT I **12 periods**

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.

UNIT II **12 periods**

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 Branching Statements – Iterative Statements – Nested Loops – Break and Continue Statement – goto Statement.

UNIT III **10 periods**

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.

UNIT IV **14 periods**

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.

UNIT V **12 periods**

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.

BOOKS

1. E Balagurusamy – Programming in ANSIC – Tata McGraw-Hill publications.
2. Brain W Kernighan and Dennis M Ritchie - The 'C' Programming language" - Pearson publications.
3. Ashok N Kamthane: Programming with ANSI and Turbo C, Pearson Edition Publications.
4. YashavantKanetkar - Let Us 'C' – BPB Publications.

RECOMMENDED CO-CURRICULAR ACTIVITIES:

(Co-curricular activities shall not promote copying from textbook or from others work and shall encourage self/independent and group learning)

A. Measurable

1. Assignments (in writing and doing forms on the aspects of syllabus content and outside the syllabus content. Shall be individual and challenging)
2. Student seminars (on topics of the syllabus and related aspects (individual activity))
3. Quiz (on topics where the content can be compiled by smaller aspects and data (Individuals or groups as teams))
4. Study projects (by very small groups of students on selected local real-time problems pertaining to syllabus or related areas. The individual participation and contribution of students shall be ensured (team activity

B. General

1. Group Discussion
2. Try to solve MCQ's available online.
3. Others

RECOMMENDED CONTINUOUS ASSESSMENT METHODS:

Some of the following suggested assessment methodologies could be adopted;

1. The oral and written examinations (Scheduled and surprise tests),
2. Closed-book and open-book tests,
3. Problem-solving exercises,
4. Practical assignments and laboratory reports,
5. Observation of practical skills,
6. Individual and group project reports like "Creating Text Editor in C".
7. Efficient delivery using seminar presentations,
8. Viva voce interviews.
9. Computerized adaptive testing, literature surveys and evaluations,
10. Peers and self-assessment, outputs form individual and collaborative work

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MODEL Question Paper:

TITLE: Problem solving in C **COURSE CODE: CSCT11B**
CLASS B.Com(E-Commerce-Computers) **SEMESTER: III**
TIME: 3 Hrs. **MAX: 75M**

SECTION –A

ANSWER ANY FIVE QUESTIONS **5 X 5 =25 M.**

1. What is a flowchart? Utilize flowchart symbols and draw a flowchart to find biggest of two numbers. **(CO1, L3)**
2. Write a short note on block diagram of computers. **(CO1, L2)**
3. Explain do…while loop with an example program. **(CO2 , L2)**
4. Develop a C program to find largest number in a given integer list. **(CO3 ,L3)**
5. Classify data types in C. Write a short note on any two data types. **(CO2 , L2)**
6. How to declare and initialize 1D arrays. **(CO3, L1)**
7. Construct a student structure to accept student details and write a C program to calculate grade of a student. (**CO4 , L3)**
8. Illustrate command line arguments with an example program. **(CO5, L2)**

SECTION – B

ANSWER ALL THE QUESTIONS **5 X 10 =50 M.**

9 A) Define Algorithm. Demonstrate Key features of algorithm with examples. **(CO1, L2)**

(or)

B) List out the characteristics and limitations of computers. **(CO1, L1)**

10 A) Give Classification of Control statements in C. Explain multi-way decision making statements in C with examples. **(CO2, L2)**

(or)

B) Write a program to check whether the given number is Armstrong or not. **(CO2, L3)**

11 A) Develop a program in C for matrix multiplication. **(CO3, L3)**

(or)

B) Demonstrate various String handling functions in C with examples. **(CO3, L2)**

12 A) Compare and contrast structures with unions. **(CO4, L4)**

(or)

B) Explain the types of functions in C. **(CO4, L2)**

13 A) List different file handling functions in C. Explain with examples. **(CO5, L2)**

(or)

B) Explain call by value and call by reference with example. **(CO4, L2)**

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MODEL Question Paper:

TITLE: Problem solving in C **COURSE CODE: CSCT11B**
CLASS B.Com(E-Commerce-Computers) **SEMESTER: III**
TIME: 3 Hrs. **MAX: 75M**

SECTION-A

ANSWER ANY FIVE QUESTIONS **5X5=25M**

1. Unit 1
2. Unit 1
3. Unit 2
4. Unit 3
5. Unit 2
6. Unit 3
7. Unit 4
8. Unit 5

SECTION – B

ANSWER ALL THE QUESTIONS **5 X 10 =50 M.**

9 A) Unit 1.
(or)
B) Unit 1.

10 A) Unit 2.
(or)
B) Unit 2.

11 A) Unit 3.
(or)
B) Unit 3.

12 A) Unit 4.
(or)
B) Unit 4.

13 A) Unit 5.
(or)
B) Unit 5.

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Semester III	Course Code	Course Title	Credits	Prds
B.Com.(E-Commerce-Computers)	**CSCP11B**	**Problem Solving in CLab**	**1**	**30**

Course Outcome No	Upon successful completion of this course, students should have the knowledge and skills to:	Program Outcome No
CO1	Apply logical skills to analyse a given problem	PO1, PO7, PSO1, PSO4, PSO2
CO2	Design an algorithmic solution for a given problem	PO1, PO7, PSO1, PSO4, PSO2
CO3	Write a maintainable C program according to coding standards for a given algorithm	PO1, PO7, PSO1, PSO4, PSO2
CO4	Debug a given program	PO1, PO7, PSO1, PSO4, PSO2
CO5	Execute the C program	PO1, PO7, PSO1, PSO4, PSO2

Experiments List
Cycle-I

Week 1:
Write a C program to check whether the given two numbers are equal, bigger or smaller?
Week 2:
Write a C program to perform arithmetic operations using Switch...case?
Week 3:

- Write a program to find the sum of individual digits of a positive integer.
- Write a program to check whether the given number is Armstrong or not.

Week 4:
Write a program to generate the first N terms of the Fibonacci sequence.
Week 5:
Write a program to find both the largest and smallest number in a list of integer values
Week 6:

- Write a program that uses functions to add two matrices.
- Write a program for multiplication of two n X n matrices.

Week 7:

Write a program to demonstrate refection of parameters in swapping of two integer values using Call by Value& Call by Address.
Week 8:
Write a program to calculate factorial of given integer value using recursive functions.

Cycle-II

Week 9:
Write a program to search an element in a given list of values.
Week 10:
Write a program to illustrate pointer arithmetic.
Week 11:
Write a program to sort a given list of integers in ascending order.
Week 12:
Write a program to calculate the salaries of all employees using Employee (ID, Name, Designation, Basic Pay, DA, HRA, Gross Salary, Deduction, Net Salary) structure.

a. DA is 30 % of Basic Pay
b. HRA is 15% of Basic Pay
c. Deduction is 10% of (Basic Pay + DA)
d. Gross Salary = Basic Pay + DA+ HRA
e. Net Salary = Gross Salary - Deduction

Week 13:
Write a program to perform various string operations.
Week 14:
Write a program to read the data character by character from a file.
Week 15:
Write a program to create Book (ISBN, Title, Author, Price, Pages, Publisher) structure and store book details in a file and perform the following operations

a. Add book details
b. Search a book details for a given ISBN and display book details, if available
c. Update a book details using ISBN
d. Delete book details for a given ISBN and display list of remaining Books.

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Title of the Paper PROGRAMMING WITH C & C++

Semester: III

Course Code	CABT31A	Course Delivery Method	Class Room / Blended Mode - Both
Credits	**3**	CIA Marks	25
No. of Lecture Hours / Week	4	Semester End Exam Marks	75
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2021	Year of Offering: 2021-22	Year of Revision: ----	Percentage of Revision: 0%

Course Objective: To learn the fundamental programming concepts and methodologies which are essential to building good C/C++ programs.

Course Outcomes:

CO_1	To understand the meaning and generations of a programming language and to learn about c tokens.(PO5, PO7)
CO2	To learn about operators and conditional statements in C. (PO5, PO7)
CO3	To Gain knowledge about functions and to learn how to work with arrays- knowledge about strings and its functions. (PO5, PO7)
CO4	To learn about the concepts of structures and unions. (PO5, PO7)
CO5	To understand about Object-Oriented Programming concepts using CPP (PO5, PO7)

Syllabus		
Unit	**Learning Units**	**Lecture Hours**
I	**INTRODUCTION TO C LANGUAGE, VARIABLES, DATA TYPES** **Introduction:** 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, Printf (), scanf ().	10
II	**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	10
III	**FUNCTIONS, ARRAYS** **Functions :** Introduction, Using Functions, Function declaration/prototype, Function Definition, Function Call, Scope of variables. **Arrays :** Introduction, Declaration of Arrays, Accessing elements of the Array, One dimensional array declaration and initialization with example, Two-dimensional array declaration and initialization with examples.	15
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.	12
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, Operator Overloading	13

Text Books:			
	Author	**Title**	**Publisher**
1	Reema Thareja	Introduction to C programming	Oxford University Press
2	E. Balagurusamy	Objected Oriented Programming with C++	McGraw Hill.

Reference Text Books:			
	Author	**Title**	**Publisher**
1	E Balagurusamy	Computing Fundamentals & C Programming	Tata McGraw-Hill, 2008
2	Ashok N Kamthane	Programming with ANSI and Turbo C	Pearson Publisher, 2002.
3	Y.Kanetkar	Let Us C++:	BPB

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(With Effect from Academic Year 2020-21)
PROGRAMMING WITH C & C++
MODEL PAPER

CLASS: B. Com (C.A) **Max. Marks: 75M**
Course Code: CABT **Min. Pass: 30M**
Semester: III **Time: 3 Hours**

Section A

Answer any Five of the following **5*5=25M**

1. Explain the structure of a C Program. (CO1, L2)
2. Explain the working of go-to statement with example program (CO2, L2)
3. List in detail about the concept of scope of variables. (CO3, L1)
4. Define Union concept in C with example program? (CO4, L1)
5. Explain a) Encapsulation b) Abstraction concepts in CPP. (CO5, L2)
6. Demonstrate a C Program to sort the given numbers in an array. (CO3, L2)
7. Explain different types of files used in C Program. (CO1, L2)
8. Comparison between while and do-while statements. (CO2, L2)

Section B

Answer the following **5*10=50M**

9. a) Explain variables and constants in C with a detailed account of types of variables and constants. (CO1, L2)

(or)

b) Explain in detail about generations of programming languages. (CO1, L2)

10. a) Explain looping statements in C with example programs. (CO2, L2)

(or)

b) Explain different types of operators in C language. (CO2, L2)

11. a) What is a one-dimensional array with an example program. (CO3, L1)

(or)

b) What is a function? Explain function declaration, function definition and function calling with an example program (CO3, L1)

12. a) List any five string handling functions with syntaxes and example programs. (CO4, L1)

(or)

b) Define array of structures in detail with an example program. (CO4, L1)

13. a) Explain structure of a C++ program in detail. (CO5, L2)
b) Comparison between C and C++ (CO5, L2)

(or)

c) Explain the concept of operator overloading in C++ with example. (CO5, L2)

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PROGRAMMING WITH C & C++ LAB

COMPUTER SCIENCE	CABP	**2022-23**	**B. Com (Computer Applications)**

Semester: III **Credits: 1**
Hours Taught: 30 hrs. Per Semester **Max.Time**: 3 Hours

Course Objective:
The purpose of this course is to introduce students to the field of programming using C language and CPP. The students will be able to enhance their analyzing and programming skills and use the same for writing their own programs in C language and Using classes in CPP language.

Course Outcomes: At the end of this course the student is able toCO1:Use various operators in C programming
CO2:Implement decision and looping control statements

CO3:Passing parameters to functions & Accessing elements of an array and creation of one dimensional and two-dimensional arrays.
.CO4:Implementing string functions and structures, unions conceptsCO5:Implement basic OOP concepts in CPP.

LAB LIST

1. Write a C program to calculate the expression: ((a*b)/c)+(a+b+c)
2. Write a C program to calculate (a+b+c)3
3. Write a C program to convert temperature from
   a) Celsius to Fahrenheit
   b) Fahrenheit to Celsius
4. Write a C program to calculate compound Interest
5. Write a C program to find biggest of three numbers
6. Write a C program to read student marks in five subjects and calculate total and average
7. Write a C program to convert hours into seconds
8. Write a C program to display number of days in given month using switch case
9. Write a C program to find biggest of two numbers using switch case
10. Write a C program to find whether the given number is prime or not
11. Write a C program to check whether the given string is palindrome or not12 Write a C program to find the reverse of a given number using functions 13 Write a C program to swap two numbers using functions
14. Write a C program to sort the given numbers in an array
15. Write a C program to perform addition of two matrices
16. Write a C program to display student details using structures
17. Write a CPP program to find addition of three numbers using classes
18. Write a CPP program to find biggest of three numbers using classes
19. Write a CPP program to find whether a person is eligible to vote or not using classes
20. Write a CPP program to implement operator overloading concept

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(With Effect from Academic Year 2021-22)

Title of the Paper: Problem solving in C
Semester: I **SECTIONS: B.Sc. (MPCS / MCCS/ MSCS)**

Course Code	**CSCT11B**	Course Delivery Method	Class Room / Blended Mode - Both
Credits	4	CIA Marks	30
No. of Lecture Hours / Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2020-21	Year of Offering: 2021 - 22	Year of Revision: Nil	Percentage of Revision: 0%

Course Objective
This course aims to provide exposure to problem-solving through programming and introduce the concepts of the C Programming language.

Course Learning Outcomes:

Course Outcome No	Upon successful completion of the course, a student will be able to:	Program Outcome No.
CO1	Understand the evolution & functionality of Digital Computers and develop an algorithm for solving a given problem.	PO1, PO7, PSO1, PSO4
CO2	Understand tokens and control structures in C.	PO1, PO7, PSO1, PSO4
CO3	Understand arrays and strings and implement them.	PO1, PO7, PSO1, PSO4
CO4	Understand the right way of using functions, pointers, structures and unions in C	PO1, PO7, PSO1, PSO4
CO5	Develop and test programs written in C files	PO1, PO7, PSO1, PSO4

UNIT I **12 periods**

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.

UNIT II **12 periods**

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 Branching Statements – Iterative Statements – Nested Loops – Break and Continue Statement – goto Statement.

UNIT III **10 periods 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.

UNIT IV **14 periods 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.

UNIT V **12 periods**

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.

BOOKS

1. E Balagurusamy – Programming in ANSIC – Tata McGraw-Hill publications.
2. Brain W Kernighan and Dennis M Ritchie - The 'C' Programming language" - Pearson publications.
3. Ashok N Kamthane: Programming with ANSI and Turbo C, Pearson Edition Publications.
4. YashavantKanetkar - Let Us 'C' – BPB Publications.

RECOMMENDED CO-CURRICULAR ACTIVITIES:

(Co-curricular activities shall not promote copying from textbook or from others work and shall encourage self/independent and group learning)

A. Measurable

1. Assignments (in writing and doing forms on the aspects of syllabus content and outside the syllabus content. Shall be individual and challenging)
2. Student seminars (on topics of the syllabus and related aspects (individual activity))
3. Quiz (on topics where the content can be compiled by smaller aspects and data (Individuals or groups as teams))
4. Study projects (by very small groups of students on selected local real-time problems pertaining to syllabus or related areas. The individual participation and contribution of students shall be ensured (team activity

B. General

1. Group Discussion
2. Try to solve MCQ's available online.
3. Others

RECOMMENDED CONTINUOUS ASSESSMENT METHODS:

Some of the following suggested assessment methodologies could be adopted;

1. The oral and written examinations (Scheduled and surprise tests),
2. Closed-book and open-book tests,
3. Problem-solving exercises,
4. Practical assignments and laboratory reports,
5. Observation of practical skills,
6. Individual and group project reports like "Creating Text Editor in C".
7. Efficient delivery using seminar presentations,
8. Viva voce interviews.
9. Computerized adaptive testing, literature surveys and evaluations,
10. Peers and self-assessment, outputs form individual and collaborative work

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BLUE PRINT

TITLE: Problem solving in C **COURSE CODE: CSCT11B**
SECTIONS: B.Sc. (MPCS / MCCS / MSCS) **SEMESTER: I**
TIME: 3 Hrs. **MAX: 70M**

SECTION-A

ANSWER ALL QUESTIONS **5X14=70M**

1. a. Unit 1(10M)
   b. Unit 1(4M)
   OR
   c. Unit 1(10M)
   d. Unit 1(4M)

2. a. Unit 2(10M)
   b. Unit 2(4M)
   OR
   c. Unit 2(10M)
   d. Unit 2(4M)

3. a. Unit 3(10M)
   b. Unit 3(4M)
   OR
   c. Unit 3(10M)
   d. Unit 3(4M)

4. a. Unit 4(10M)
   b. Unit (4M)
   OR
   c. Unit 4(10M)
   d. Unit 4(4M)

5. a. Unit 5(10M)
   b. Unit 5(4M)
   OR
   c. Unit 5(10M)
   d. Unit 5(4M)

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(With Effect from Academic Year 2021-22)

Semester I	Course Code	Course Title	Credits	Prds
B.Sc.(MPCS / MCCS/ MSCS)	**CSCP11B**	**Problem Solving in C Lab**	**1**	**30**

Course Outcome No	Upon successful completion of this course, students should have the knowledge and skills to:	Program Outcome No
CO1	Apply logical skills to analyse a given problem	PO1, PO7, PSO1, PSO4, PSO2
CO2	Design an algorithmic solution for a given problem	PO1, PO7, PSO1, PSO4, PSO2
CO3	Write a maintainable C program according to coding standards for a given algorithm	PO1, PO7, PSO1, PSO4, PSO2
CO4	Debug a given program	PO1, PO7, PSO1, PSO4, PSO2
CO5	Execute the C program	PO1, PO7, PSO1, PSO4, PSO2

Experiments List
Cycle-I

Week 1:
Write a C program to check whether the given two numbers are equal, bigger or smaller?
Week 2:
Write a C program to perform arithmetic operations using Switch...case?
Week 3:

- Write a program to find the sum of individual digits of a positive integer.
- Write a program to check whether the given number is Armstrong or not.

Week 4:
Write a program to generate the first N terms of the Fibonacci sequence.
Week 5:
Write a program to find both the largest and smallest number in a list of integer values
Week 6:

- Write a program that uses functions to add two matrices.
- Write a program for multiplication of two n X n matrices.

Week 7:

Write a program to demonstrate refection of parameters in swapping of two integer values using Call by Value& Call by Address.
Week 8:
Write a program to calculate factorial of given integer value using recursive functions.

Cycle-II

Week 9:
Write a program to search an element in a given list of values.
Week 10:
Write a program to illustrate pointer arithmetic.
Week 11:
Write a program to sort a given list of integers in ascending order.
Week 12:
Write a program to calculate the salaries of all employees using Employee (ID, Name, Designation, Basic Pay, DA, HRA, Gross Salary, Deduction, Net Salary) structure.

a. DA is 30 % of Basic Pay
b. HRA is 15% of Basic Pay
c. Deduction is 10% of (Basic Pay + DA)
d. Gross Salary = Basic Pay + DA+ HRA
e. Net Salary = Gross Salary - Deduction

Week 13:
Write a program to perform various string operations.
Week 14:
Write a program to read the data character by character from a file.
Week 15:
Write a program to create Book (ISBN, Title, Author, Price, Pages, Publisher) structure and store book details in a file and perform the following operations

a. Add book details
b. Search a book details for a given ISBN and display book details, if available
c. Update a book details using ISBN
d. Delete book details for a given ISBN and display list of remaining Books.

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Title of the Paper: INFORMATION TECHNOLOGY
Semester: I **SECTIONS: B.Com (CA)**

Course Code	**CSBT11A**	Course Delivery Method	Class Room / Blended Mode - Both
Credits	4	CIA Marks	30
No. of Lecture Hours / Week	5	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2020-21	Year of Offering: 2021 - 22	Year of Revision: ----	Percentage of Revision: 0%

INFORMATION TECHNOLOGY

Objective:
It provides to learn computer basics and basic principles of using Windows operation system and be able to access the Internet, data communication, Software, hardware and various new technologies in information technology.

Course Outcomes:

COURSE OUTCOME NO	Upon successful completion of this course, students should have the knowledge and skills to
CO1	Understand fundamental concepts of a computer and its basic components
CO2	Understand basic functioning of an operating system and customizing Windows Desktop
CO3	Analyse type of soft wares and programming languages
CO4	Have knowledge in basic Network and Data Communication Concepts
CO5	Understand the need of data mining and get familiarize with basics of new concepts like KDD, OLAP

UNIT-I: INTRODUCTION: **13Periods**

Introduction to computers
Generations of computers
An overview of computer system - Types of computers
Input & Output Devices.
Hardware: Basic components of a computer system- Control unit– ALU- Input/outputfunctions.
Memory – RAM – ROM – EPROM - PROM and Other types of memory.

UNIT-II: OPERATING SYSTEM (OS): **12Periods**

Meaning - Definition & Functions.
Types of OS - Booting process
DOS – Commands (internal & external) - Wild card characters
Windows: Using the Start Menu –Control Panel – Using multiple
Windows – Customizing the Desktop – Windows accessories (Preferably latest version of windows or Linux Ubuntu).

Unit-III: SOFTWARE: **15Periods**

System software and application software.

Operating system windows OS,

Mobile device operating system and notebook operating systems

Application software Types of personal application software

Spread sheet-data management

Word processing

Desktop publishing

Graphics, CAD, CAM, CIM

Programming Languages

Assembly language

Procedural language, non-procedural language, natural programming language.

Hypertext mark-up language, modelling language, object-oriented programming language.

Unit-IV: DATA COMMUNICATION: **20 Periods**

Telecommunication and Networks Communication media& channel cable media

Broad 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:

Modem

Multiplexers

Front –end-processor.

Networks LAN, WAN, VAN, virtual private network (VPN).

Internet, intranet and Extranets

The evolution of the internet, service provided by the internet, World Wide Web.

Unit-V: NEW TECHNOLOGIES: **10 Periods**

New technologies in Information Technology:

Introduction to hyper media, artificial intelligence and business intelligence, knowledgediscovery in database (KDD)

Data warehouse and data marts. Data mining and OLAP.

Student Activity:

Students have to submit assignments and give seminars on various topics allotted to them.

Total of 5 Hrs is allotted for student seminars. Student activity also includes gathering of information related to latest technologies in computers.

Library Activity:

Students will visit library in their allotted time and will refer various text books to gather information for their assignments.

TEXT/ REFERENCE BOOKS:

1. B.E.V.L.Naidu, V.V.. Devi Prasad Konti, Ganti Naga Srikanth, Himalaya publishing House.
2. Introduction to Computers: Peter Norton, McGraw Hill.

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Model Paper

TITLE: INFORMATION TECHNOLOGY **COURSE CODE: CSBT11A**

CLASS B.Com(CA) **SEMESTER: I**

TIME: 3 Hrs. **MAX: 70M**

SECTION-A

ANSWER ALL QUESTIONS **5X14=70M**

6. a. Unit 1(10M)
   e. Unit 1(4M)
   OR
   f. Unit 1(10M)
   g. Unit 1(4M)

7. a. Unit 2(10M)
   e. Unit 2(4M)
   OR
   f. Unit 2(10M)
   g. Unit 2(4M)

8. a. Unit 3(10M)
   e. Unit 3(4M)
   OR
   f. Unit 3(10M)
   g. Unit 3(4M)

9. a. Unit 4(10M)
   e. Unit 4(4M)
   OR
   f. Unit 4(10M)
   g. Unit 4(4M)

10. a. Unit 5(10M)
    e. Unit 5(4M)
    OR
    f. Unit 5(10M)
    g. Unit 5(4M)

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Title of the Paper: **COMPUTER APPLICATIONS** Semester: I

Course Code	**CCSE101**	Course Delivery Method	Class Room / Blended Mode –
Credits	3	CIA Marks	30
No. of Lecture Hours / Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2020-21	Year of Offering: 2022-23	Year of Revision: ----	Percentage of Revision: 0%

COURSE OBJECTIVES:

It provides to learn computer basics and basic principles of using Windows operation system and be able to access the Ms-Office, Power Point, Excel and various new technologies in information technology.

Course Outcomes:

COURSE OUTCOME NO	Upon successful completion of this course, students should have the knowledge and skills to
CO1	Understand fundamental concepts of a computer and its basic components
CO2	Understand basic functioning of an Ms-Office and MS-Word Window Components Windows Desktop
CO3	Analyze type of soft ware's and programming languages
CO4	Have knowledge in MS-Excel and MS Access
CO5	Understand the need of Finding, Sorting and Displaying Data and get familiarize

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(With Effect from Academic Year 2021-'22)

COMPUTER SCIENCE	CCSE101	2022-23	B.Com(E-Commerce-Computes)

SEMESTER – I PAPER – I Max. Marks 70 Pass Marks 28 Total Hrs: 60

Syllabus: **Computer Applications NO. Of Hrs**: **4 Credits**: **3**

Unit-I: MS-Word 10 Hrs

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

Unit-II: MS-PowerPoint 10 Hrs

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

Unit-III: MS-Excel 10Hrs

Overview of Excel features – Creating a new worksheet, Selecting cells, Entering and editing Text, Numbers, Formulae, Referencing cells – Inserting Rows/Columns – Changing column widths and row heights, auto format, changing font sizes, colors, shading and attributes – Data Sorting and Filters – Functions – Functions requiring Addins, Functions by category Creating different types of Charts

Unit-IV: MS Access: 12Hrs

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.

Unit- V: Finding, Sorting and Displaying Data: 12Hrs

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..

Reference Books:

1. Ron Mansfield, Working in Microsoft Office, Tata McGraw Hill(2008)

2. Ed Bott, Woody Leonhard, Using Microsoft Office 2007, Pearson Education(2007)

3. Sanjay Saxsena, Microsoft Office, 4.Microsoft Office, BPB Publications

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Model Paper

TITLE: COMPUTER APPLICATIONS **COURSE CODE: CSCE101**

SECTIONS: B.Com(E-Commerce-Computers) **SEMESTER: I**

TIME: 3 Hrs. **MAX: 70M**

SECTION-A

ANSWER ALL QUESTIONS **5X14=70M**

1. a. Unit 1(10M)
   b. Unit 1(4M)
   OR
   c. Unit 1(10M)
   d. Unit 1(4M)

2 a. Unit 2(10M)
   b. Unit 2(4M)
   OR
   c. Unit 2(10M)
   d. Unit 2(4M)

3 a. Unit 3(10M)
   b. Unit 3(4M)
   OR
   c. Unit 3(10M)
   d. Unit 3(4M)

4 a. Unit 4(10M)
   b. Unit 4(4M)
   OR
   c. Unit 4(10M)
   d. Unit 4(4M)

5 a. Unit 5(10M)
   b. Unit 5(4M)
   OR
   c. Unit 5(10M)
   d. Unit 5(4M)

AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.

An Autonomous college within the jurisdiction of Krishna University A.P, India.

(With Effect from Academic Year 2019-'20)

COMPUTER SCIENCE	CCSEP-101	2022-23	B.Com. (E-COMMERCE)

SEMESTER – I PAPER – I Max. Marks 50 Pass Marks 20 Total Hrs: 30

COMPUTER APPLICATIONS LAB

Ms-Word

1. Create a vesting Card
2. Create a template for organization using Header & Footer
3. Inserting tables, pictures, Charts
4. Macros
5. Mail merge Procedure

Ms-Excel

1. Create an electronic spreadsheet in which you enter the following decimal numbers and convert into Octal, Hexadecimal and Binary numbers vice versa. Decimal Numbers: 35, 68, 95, 165, 225, 355, 375, 465. Binary Numbers: 101, 1101, 111011, 10001, 110011001, 111011111.
2. The ABC Company shows the sales of different products for 5 years. Create column chart, 3D-column and Bar chart for the following data YEAR PRODUCT-1 PRODUCT-2 PRODUCT-3 PRODUCT-4 2003 1000 800 900 10002004 800 80 500 9002005 1200 190 400 8002006 400 200 300 1000 2007 1800 400 400 1200
3. Create a suitable examination data base and find the sum of the marks(total) of each student and respective class secured by the student rules:
Pass if marks in each subject >=35 Distinction if average>=75 First class if average>=60 but <75 Second class if average>=50 but <60 Third class if average>=35 but <50
Fail if marks in any subject is <35 Display average marks of the class, subject wise and pass percentage
4. Create an electronic spread sheet in which you enter date and time functions in Excel
5. Create a electronic spread sheet in statistical and mathematical functions in Excel

MS-PowerPoint

1. Make a Power point presentation on your strengths, weaknesses, hobbies, factors that waste your time.
2. Make a Power point presentation to represent your College profile.
3. Make a Power point presentation of all the details of the books that you had studied in B.Sc. First Year.
4. Create a Presentation without Animation.

MS-ACCESS

1. Create a database using MS-ACCESS with at least 5 records table1 structure: register number , name, dob, gender, class table2 structure: register number m1 m2 m3 m4 m5 total maintain the relationship between two tables with register number as a primary key and answer the following quarries: show the list of students with the following fields as one query register number name gender total marks
2. Maintain the relationship between above two tables with register number as a primary key and answer the following reports: reports must have following columns report1 with register number, name, marks of all subjects and 90 hrs (3 hrs/ week) computer science 10 of 44 total report2 with register number, total , percentage.
3. Create a database using ms-access with at least 5 records table1 structure: emp-code emp-name age gender dob table2 structure: emp-code basic-pay maintain the relationship between two tables with emp-code as a primary key generate the following reports: report1: emp-code emp-name basic-pay da,hra gross-salary report2: emp-code emp-name age gender gross-salary.