A.G & S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE,VUYYURU-521165

(An Autonomous College in the Jurisdiction of Krishna University)

Accredited at the level 'A' by the NAAC

Sponsors : Siddhartha Academy of General & Technical Education

DEPARTMENT OF COMPUTER SCIENCE

Minutes of the meeting of Board of Studies in Computer Science

11-10-2023

Minutes of the meeting of Board of Studies in Computer Science for Semester I, III & V of I, II & III years B.Sc. Honours Computer Science, 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 10.00 A.M on 11-10-2023 in the Department of Computer Science.

Sri T. Naga Prasada Rao ... Presiding

Members Present:

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

Agenda for B.O.S Meeting.

1. To Discuss and approve the Program structure, Course structure, Syllabi and model papers of B.Sc. (Computer Science) Honours program in First year for the student admitted in the academic year 2023-24 and onwards.
2. To discuss introducing Syllabi and Model papers for **ESSENTIALS AND APPLICATIONS OF MATHEMATICAL, PHYSICAL AND CHEMICAL SCIENCES, Course Code 23SCIT11, ADVANCES OF MATHEMATICAL, PHYSICAL AND CHEMICAL SCIENCES, Course Code 23SCIT12** for B.Sc. (Computer Science) Honours program in First year.
3. To Discuss and approve the Course structure of BCA Honours program in First year for the student admitted in the academic year 2023-24 and onwards.
4. To recommend any changes in the syllabi for III, V/VI Semesters of II, III year Degree B.Sc.(MPCs, MCCs, MSCs), B.Com.(C.A.) & B.Com(e-commerce-Computers).
5. To recommend and introduce Value added course Title: Problem Solving Techniques (Course Code: 23CSVACT01) without credits.
6. Any other information.

Resolutions

1. It is resolved to approve the Program structure, Course structure, Syllabi and model papers of B.Sc. (Computer Science) Honours program in First year for the student admitted in the academic year 2023-24 and onwards.
2. It is resolved to discuss introducing Syllabi and Model papers for **ESSENTIALS AND APPLICATIONS OF MATHEMATICAL, PHYSICAL AND CHEMICAL SCIENCES, Course Code 23SCIT11, ADVANCES OF MATHEMATICAL, PHYSICAL AND CHEMICAL SCIENCES, Course Code 23SCIT12** for B.Sc. (Computer Science) Honours program in First year.
3. It is resolved to Discuss and approve the Course structure of BCA Honours program in First year for the student admitted in the academic year 2023-24 and onwards.
4. It is resolved to recommend any changes in the syllabi for III, V/VI Semesters of II, III year Degree B.Sc.(MPCs, MCCs, MSCs), B.Com.(C.A.) & B.Com(e-commerce-Computers).
5. It is resolved to change the course codes for the course titles **"Data Base Management System" with course code 22CSCT34 (old course code CSCT34B), "Object Oriented Programming Using Java" with course code 22CSCT31 (old course code CSCT31).**
6. It is resolved to recommend and introduce Value added course Title: Problem Solving Techniques (Course Code: 23CSVACT01) without credits.
7. It is resolved to continue the teaching and evaluation methods to be followed under Autonomous status.
8. 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.

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 2023-24.**

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 2022-23.

- 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.

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 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 marks**

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

1. Record	:	10 marks

9. Discussed and recommended for organizing Seminars, Guest lectures, Work-shops to upgrade the knowledge of students, for the approval of the Academic Council.
10. Discussed and empowered the HOD to suggest the panel of the paper setters and examiners to the controller of the examinations.
11. 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
12. Suggestions

Chairman

S.NO	TITLE OF THE PAPER	COURSE CODE	SEM NO	TYPE OF THE PAPER	TOTAL MARKS	IA TEST	SEE	TEACHING HOURS	CREDITS	OFFERED TO (NAME OF THE PROGRAMME)
1	ESSENTIALS AND APPLICATIONS OF MATHEMATICAL, PHYSICAL AND CHEMICAL SCIENCES	23SCIT11	I	CORE	100	30	70	5	4	I B.SC (COMPUTER SCIENCE)
2	ADVANCES OF MATHEMATICAL, PHYSICAL AND CHEMICAL SCIENCES	23SCIT12	I	CORE	100	30	70	5	4	I B.SC (COMPUTER SCIENCE)
3	DATABASE MANAGEMENT SYSTEMS	22CSCT34	III	CORE	100	30	70	4	3	II B.SC (MPCS, MCCS , MSCS)
4	DATABASE MANAGEMENT SYSTEMS LAB	22CSCP34	III	LAB	50	10	40	2	1	II B.SC (MPCS, MCCS , MSCS)
5	OBJECT ORIENTED PROGRAMMING USING JAVA	22CSCT31	III	CORE	100	30	70	4	3	II B.SC (MPCS, MCCS , MSCS)
6	OBJECT ORIENTED PROGRAMMING USING JAVA LAB	22CSCT31	III	LAB	50	10	40	2	1	II B.SC (MPCS, MCCS , MSCS)
7	PROGRAMMING WITH C & C++	22CABT31	III	CORE	100	30	70	4	3	II B.Com(CA)
8	PROGRAMMING WITH C & C++ LAB	22CABT31	III	LAB	50	10	40	2	1	II B.Com(CA)
9	WEB TECHNOLOGY	ECCSCT31	III	CORE	100	30	70	4	3	II B.Com (E-Comm Computers)
10	WEB TECHNOLOGY LAB	ECCSCP31	III	LAB	50	10	40	2	1	II B.Com (E-Comm Computers)
11	WEB INTERFACE DESIGNING TECHNOLOGIES	SECCSCT01	V/ VI	CORE	100	25	75	3	3	III B.SC (MPCS, MCCS , MSCS)
12	WEB INTERFACE DESIGNING TECHNOLOGIES LAB	SECCSCP01	V/ VI	LAB	50	10	40	3	1	III B.SC (MPCS, MCCS , MSCS)
13	WEB APPLICATIONS DEVELOPMENT USING PHP AND MYSQL	SECCSCT02	V/ VI	core	100	25	75	3	3	III B.SC (MPCS, MCCS , MSCS)

14	WEB APPLICATIONS DEVELOPMENT USING PHP AND MYSQL LAB	SECCSCP02	V/VI	LAB	50	10	40	3	1	III B.SC (MPCS, MCCS , MSCS)

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SINGLE MAJOR PROGRAMME STRUCTURE FOR

B. Sc. Honours (Computer Science)

w.e.f 2023 – 2024 Admitted Batch

Year	Semester	Course	Title	Hrs./ Week	Credits
I	I	1	Essentials and applications of Mathematical, Physical and Chemical Sciences	5	4
		2	Advances in Mathematical, Physical and Chemical Sciences	5	4
	II	3	Problem Solving using C - (T)	3	3
			Problem Solving using C- (P)	2	1
		4	Digital Logic Design- (T)	3	3
			Digital Logic Design- (P)	2	1
II	III	5	Object Oriented Programming using Java- (T)	3	3
			Object Oriented Programming using Java - (P)	2	1
		6	Data Structures using C - (T)	3	3
			Data Structures using C - (P)	2	1
		7	Computer Organization - (T)	3	3
			Computer Organization- (P)	2	1
		8	Operating Systems - (T)	3	3
			Operating Systems - (P)	2	1
	IV	9	Database Management System - (T)	3	3
			Database Management System - (P)	2	1
		10	Object Oriented Software Engineering - (T)	3	3
			Object Oriented Software Engineering - (P)	2	1
		11	Data Communications and Computer Networks - (T)	3	3
			Data Communications and Computer Networks - (P)	2	1
III	V	12	Web Interface Designing Technologies - (T)	3	3
			Web Interface Designing Technologies - (P)	2	1
		13	Web Applications Development using PHP & MYSQL - (T)	3	3
			Web Applications Development using PHP & MYSQL - (P)	2	1
		14 A	Internet of Things (T)	3	3
			Internet of Things (P)	2	1
			OR		
		14 B	Foundations of Data Science - (T)	3	3

			Foundations of Data Science - (P)	2	1
		15 A	IoT Applications Development and Programming - (T)	3	3
			IoT Applications Development and Programming - (P)	2	1
			OR		
		15 B	Application development using Python - (T)	3	3
			Application development using Python - (P)	2	1
	VI		Internship/ Apprenticeship		
IV	VII	16 A	Advanced Data Structures - (T)	3	3
			Advanced Data Structures - (P)	2	1
			OR		
		16 B	Artificial Intelligence - (T)	3	3
			Artificial Intelligence - (P)	2	1
		17 A	Computer Graphics - (T)	3	3
			Computer Graphics - (P)	2	1
			OR		
		17 B	Design and Analysis of Algorithms - (T)	3	3
			Design and Analysis of Algorithms - (P)	2	1
		18 A	Principles of Machine Learning - (T)	3	3
			Principles of Machine Learning - (P)	2	1
			OR		
		18 B	Software Testing- (T)	3	3
			Software Testing- (P)	2	1
	SEC	19 A	Advanced Java Programming - (T)	3	3
			Advanced Java Programming - (P)	2	1
			OR		
		19 B	Mobile Application Development - (T)	3	3
			Mobile Application Development - (P)	2	1
		20 A	MEAN Stack Development - (T)	3	3
			MEAN Stack Development - (P)	2	1
			OR		
		20 B	R Programming - (T)	3	3
			R Programming - (P)	2	1
	VIII	21 A	Big Data Technologies - (T)	3	3
			Big Data Technologies - (P)	2	1
			OR		
		21 B	Compiler Design - (T)	3	3
			Compiler Design - (P)	2	1
		22 A	Data Mining Concepts & Techniques - (T)	3	3
			Data Mining Concepts & Techniques - (P)	2	1
			OR		
		22 B	Digital Image Processing - (T)	3	3
			Digital Image Processing - (P)	2	1

TABLE 1: B.Sc. Honours (Computer Science)
SEMESTER - I

Name of the Course	Course Code	Part No	Type of the Paper	Total Marks	IA	SEE	Teaching Hours	Credits
English -I	23ENGT11	I	First Language	100	30	70	4	3
Telugu-I	23TELT11	I	Second Language	100	30	70	4	3
Hindi-I	23HINT11							
Principles of Accounting	23ACCMDT01	III	MDC	50	15	35	2	2
Essentials and Applications of Mathematical, Physical and Chemical Sciences	23SCIT11	II	Core Theory	100	30	70	4	3
Advances of Mathematical, Physical and Chemical Sciences	23SCIT12	II	Core Theory	100	30	70	4	3
Leadership Skills		III	LSC	50	10	40	2	2
	TOTAL(Maximum)			**500**	**145**	**355**	**20**	**16**

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COURSE 1:

ESSENTIALS AND APPLICATIONS OFMATHEMATICAL, PHYSICAL AND CHEMICAL SCIENCES

Theory: 5hrs/week **Credits: 4**

Course Objective:

The objective of this course is to provide students with a comprehensive understanding of the essential concepts and applications of mathematical, physical, and chemical sciences. The course aims to develop students' critical thinking, problem-solving, and analytical skills in these areas, enabling them to apply scientific principles to real-world situations.

Learning outcomes:

1. Apply critical thinking skills to solve complex problems involving complex numbers, trigonometric ratios, vectors, and statistical measures.
2. To Explain the basic principles and concepts underlying a broad range of fundamental areas of physics and to Connect their knowledge of physics to everyday situations
3. To Explain the basic principles and concepts underlying a broad range of fundamental areas of chemistry and to Connect their knowledge of chemistry to daily life.
4. Understand the interplay and connections between mathematics, physics, and chemistry in various applications. Recognize how mathematical models and physical and chemical principles can be used to explain and predict phenomena in different contexts.
5. To explore the history and evolution of the Internet and to gain an understanding of network security concepts, including threats, vulnerabilities, and countermeasures.

UNIT I: ESSENTIALS OF MATHEMATICS:

Complex Numbers: Introduction of the new symbol i – General form of a complex number – Modulus-Amplitude form and conversions

Trigonometric Ratios: Trigonometric Ratios and their relations – Problems on calculation of angles

Vectors: Definition of vector addition – Cartesian form – Scalar and vector product and problems

Statistical Measures: Mean, Median, Mode of a data and problems

UNIT II: ESSENTIALS OF PHYSICS:

Definition and Scope of Physics- Measurements and Units - Motion of objects: Newtonian mechanics and relativistic mechanics perspective - Laws of Thermodynamics and Significance- Acoustic waves and electromagnetic waves- Electric and Magnetic fields and their interactions- Behaviour of atomic and nuclear particles- Wave-particle duality, the uncertainty principle- Theories and understanding of universe.

UNIT III: ESSENTIALS OF CHEMISTRY: :

Definition and Scope of Chemistry- Importance of Chemistry in daily life -Branches of chemistry and significance- Periodic Table- Electronic Configuration, chemical changes, classification of matter, Biomolecules- carbohydrates, proteins, fats and vitamins.

UNIT IV: APPLICATIONS OF MATHEMATICS, PHYSICS & CHEMISTRY:

Applications of Mathematics in Physics & Chemistry: Calculus , Differential Equations & Complex Analysis

Application of Physics in Industry and Technology: Electronics and Semiconductor Industry, Robotics and Automation, Automotive and Aerospace Industries, Quality Control and Instrumentation, Environmental Monitoring and Sustainable Technologies.

Application of Chemistry in Industry and Technology: Chemical Manufacturing, Pharmaceuticals and Drug Discovery, Materials Science, Food and Beverage Industry.

UNIT V: ESSENTIALS OF COMPUTER SCIENCE:

Milestones of computer evolution - Internet, history, Internet Service Providers, Types of Networks, IP, Domain Name Services, applications.

Ethical and social implications: Network and security concepts- Information Assurance Fundamentals, Cryptography-Symmetric and Asymmetric, Malware, Firewalls, Fraud Techniques Privacy and Data Protection

Recommended books:

1. Functions of one complex variable by John.B.Conway, Springer- Verlag.
2. Elementary Trigonometry by H.S.Hall and S.R.Knight
3. Vector Algebra by A.R.Vasishtha, Krishna Prakashan Media(P)Ltd.
4. Basic Statistics by B.L.Agarwal, New age international Publishers

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SEMESTER-I

COURSE 1: ESSENTIALS AND APPLICATIONS OFMATHEMATICAL, PHYSICAL AND CHEMICAL SCIENCES

Class: B.Sc.(computer science- Major) **Max.Marks:70M**

SECTION-A

ANSWER ALL THE QUESTIONS **5X4=20M**

1. (A)

OR

(B)

2. (A)

OR

(B)

3. (A)

OR

(B)

4. (A)

OR

(B)

5. (A)

OR

(B)

SECTION -B

ANSWER ALL THE QUESTIONS **5X10=50M**

6. (A)

OR

(B)

7. (A)

OR

(B)

8. (A)

OR

(B)

9. (A)

OR

(B)

10. (A)

OR

(B)

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SEMESTER-I

COURSE 2: ADVANCES IN MATHEMATICAL, PHYSICAL AND CHEMICAL SCIENCES

Theory 5 hrs/week **Credits: 4**

Course Objective:

The objective of this course is to provide students with an in-depth understanding of the recent advances and cutting-edge research in mathematical, physical, and chemical sciences.

The course aims to broaden students' knowledge beyond the foundational concepts and expose them to the latest developments in these disciplines, fostering critical thinking, research skills, and the ability to contribute to scientific advancements.

Learning outcomes:

1. Explore the applications of mathematics in various fields of physics and chemistry, to understand how mathematical concepts are used to model and solve real-world problems.
2. To explain the basic principles and concepts underlying a broad range of fundamental areas of physics and to connect their knowledge of physics to everyday situations.
3. Understand the different sources of renewable energy and their generation processes and advances in nano materials and their properties, with a focus on quantum dots. To study the emerging field of quantum communication and its potential applications. To gain an understanding of the principles of biophysics in studying biological systems. Explore the properties and applications of shape memory materials.
3. Understand the principles and techniques used in computer-aided drug design and drug delivery systems, to understand the fabrication techniques and working principles of nano sensors. Explore the effects of chemical pollutants on ecosystems and human health.
4. Understand the interplay and connections between mathematics, physics, and chemistry in various advanced applications. Recognize how mathematical models and physical and chemical principles can be used to explain and predict phenomena in different contexts.
5. Understand and convert between different number systems, such as binary, octal, decimal, and hexadecimal. Differentiate between analog and digital signals and understand their characteristics. Gain knowledge of different types of transmission media, such as wired (e.g., copper cables, fiber optics) and wireless (e.g., radio waves, microwave, satellite).

UNIT I: ADVANCES IN BASICS MATHEMATICS

Straight Lines: Different forms – Reduction of general equation into various forms – Point of intersection of two straight lines **Limits and Differentiation:** Standard limits – Derivative of a function –Problems on product rule and quotient rule

Integration: Integration as a reverse process of differentiation – Basic methods of integration

Matrices: Types of matrices – Scalar multiple of a matrix – Multiplication of matrices – Transpose of a matrix and determinants

UNIT II: ADVANCES IN PHYSICS:

Renewable energy: Generation, energy storage, and energy-efficient materials and devices. **Recent advances in the field of nanotechnology**: Quantum dots,

Quantum Communication recent advances in biophysics- recent advances in medical physics- Shape Memory Materials.

UNIT III: ADVANCES IN CHEMISTRY:

Computer aided drug design and delivery, nano sensors, Chemical Biology, impact of chemical pollutants on ecosystems and human health, Dye removal - Catalysis method

UNIT IV: ADVANCED APPLICATIONS OF MATHEMATICS, PHYSICS & CHEMISTRY

Mathematical Modelling applications in physics and chemistry

Application of Renewable energy: Grid Integration and Smart Grids,

Application of nanotechnology: Nano medicine,

Application of biophysics: Biophysical Imaging, Biomechanics, Neurophysics,

Application of medical physics: Radiation Therapy, Nuclear medicine Solid waste management, Environmental remediation- Green Technology, Water treatment.

UNIT V: Advanced Applications of computer Science

Number System-Binary, Octal, decimal, and Hexadecimal, Signals-Analog, Digital,

Modem, Codec, Multiplexing, Transmission media, WiFi – Network – Configuring WiFi Router-Networking devices- Repeater, hub, bridge, switch, router, gateway.

Recommended books:

1. Coordinate Geometry by S.L.Lony, Arihant Publications
2. Calculus by Thomas and Finny, Pearson Publications
3. Matrices by A.R.Vasishtha and A.K.Vasishtha, Krishna Prakashan Media(P)Ltd.
4. "Renewable Energy: Power for a Sustainable Future" by Godfrey Boyle 5.
"Energy Storage: A Nontechnical Guide" by Richard Baxter
6. "Nanotechnology: Principles and Applications" by Sulabha K. Kulkarni and
Raghvendra A. Bohara
7. "Biophysics: An Introduction" by Rodney Cotterill
8. "Medical Physics: Imaging" by James G. Webster
9. "Shape Memory Alloys: Properties and Applications" by Dimitris C. Lagoudas
10. Nano materials and applications by M.N.Borah
11. Environmental Chemistry by Anil.K.D.E.
12. Digital Logic Design by Morris Mano
13. Data Communication & Networking by Bahrouz Forouzan.

STUDENT ACTIVITIES

UNIT I: ADVANCES IN BASIC MATHEMATICS

1: Straight Lines Exploration Provide students with a set of equations representing straight lines in different forms, such as slope intercept form, point slope form, or general form. Students will explore the properties and characteristics of straight lines, including their slopes, intercepts, and point of intersection.

2: Limits and Differentiation Problem Solving Students will apply the concept of limits to solve various problems using standard limits. Encourage students to interpret the results and make connections to real-world applications, such as analyzing rates of change or optimizing functions.

3: Integration Exploration Students will explore the concept of integration as a reverse process of differentiation and apply basic methods of integration, such as the product rule, substitution method, or integration by parts. Students can discuss the significance of integration in various fields, such as physics and chemistry

4: Matrices Manipulation Students will perform operations on matrices, including scalar multiplication, matrix multiplication and matrix transpose. Students can apply their knowledge of matrices to real-world applications, such as solving systems of equations or representing transformations in geometry.

UNIT II: ADVANCES IN PHYSICS:

1: Case Studies Provide students with real-world case studies related to renewable energy, nano technology, biophysics, medical physics, or shape memory materials. Students will analyze the case studies, identify the challenges or problems presented, and propose innovative solutions based on the recent advances in the respective field. They will consider factors such as energy generation, energy storage, efficiency, sustainability, materials design, biomedical applications, or technological advancements.

2: Experimental Design Assign students to design and conduct experiments related to one of the topics: renewable energy, nanotechnology, biophysics, medical physics, or shape memory materials. They will identify a specific research question or problem to investigate and design an experiment accordingly. Students will collect and analyze data, interpret the results, and draw conclusions based on their findings. They will discuss the implications of their experimental results in the context of recent advances in the field.

3: Group Discussion and Debate Organize a group discussion or debate session where students will discuss the ethical, social, and environmental implications of the recent advances in renewable energy, nanotechnology, biophysics, medical physics, and shape memory materials. Assign students specific roles, such as proponent, opponent, or moderator, and provide them with key points and arguments to support their positions.

UNIT III: ADVANCES IN CHEMISTRY:

1. Experimental Design and Simulation In small groups, students will design experiments or simulations related to the assigned topic. For example, in the context of computer-aided drug design, students could design a Virtual screening experiment to identify potential drug candidates for a specific disease target. For nano sensors, students could design an experiment to demonstrate the sensitivity and selectivity of nano sensors in detecting specific analytes. Chemical biology-related activities could involve designing experiments to study enzyme-substrate interactions or molecular interactions in biological systems.
Students will perform their experiments or simulations, collect data, analyze the results, anddraw conclusions based on their findings.

2. Case Studies and Discussion Provide students with real-world case studies related to the impact of chemical pollutants on ecosystems and human health. Students will analyze the case studies, identify the sources and effects of chemical pollutants, and propose mitigation strategies to minimize their impact. Encourage discussions on the ethical and environmental considerations when dealing with chemical Pollutants. For the dye removal using the catalysis method, students can explore case studies where catalytic processes are used to degrade or remove dyes from wastewater. Students will discuss the principles of catalysis, the advantages and limitations of the catalysis method, and its applications in environmental remediation.

3: Group Project Assign students to work in groups to develop a project related to one of the topics. The project could involve designing a computer-aided drug delivery system, developing a nano sensor for a specific application, or proposing strategies to mitigate the impact of chemical pollutants on ecosystems. Students will develop a detailed project plan, conduct experiments or simulations, analyze data, and present their findings and recommendations. Encourage creativity, critical thinking, and collaboration throughout the project.

UNIT IV: ADVANCED APPLICATIONS OF MATHEMATICS, PHYSICS &CHEMISTRY 1:

Mathematical Modeling Experiment Provide students with a mathematical modeling experiment related to one of the topics. For example, in the context of renewable energy, students can develop a mathematical model to optimize the placement and configuration of solar panels in a solar farm. Students will work in teams to design and conduct the experiment, collect data, and analyze the results using mathematical models and statistical techniques. They will discuss the accuracy and limitations of their model, propose improvements, and interpret the implications of their findings in the context of renewable energy or the specific application area.

2: Case Studies and Group Discussions Assign students to analyze case studies related to the applications of mathematical modeling in nanotechnology, biophysics, medical physics, solid waste management, environmental remediation, or water treatment. Students will discuss the mathematical models and computational methods used in the case studies, analyze the outcomes, and evaluate the effectiveness of the modeling approach. Encourage group discussions on the challenges, ethical considerations, and potential advancements in the field. Students will present their findings and engage in critical discussions on the advantages and limitations of mathematical modeling in solving complex problems in these areas.

3. Group Project Assign students to work in groups to develop a group project that integrates mathematical modeling with one of the application areas: renewable energy, nanotechnology, biophysics, medical physics, solid waste management, environmental remediation, or water treatment. The project could involve developing a mathematical model to optimize the delivery of radiation therapy in medical physics or designing a mathematical model to optimize waste management practices. Students will plan and execute their project, apply mathematical modeling techniques, analyze the results, and present their findings and recommendations. Encourage creativity, critical thinking, and collaboration throughout the project

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U**NIT V: Advanced Applications of computer Science** Students must be able to convert numbers from other number system to binary number systems

1. Identify the networking media used for your college network
2. Identify all the networking devices used in your college premises.

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SEMESTER-I

COURSE 2: ADVANCES IN MATHEMATICAL, PHYSICAL AND CHEMICAL SCIENCES

Class: B.Sc.(computer science) **Max.Marks:70M**

SECTION-A

ANSWER ALL THE QUESTIONS **5X4=20M**

1. (A)

OR

(B)

2. (A)

OR

(B)

3. (A)

OR

(B)

4. (A)

OR

(B)

5. (A)

OR

(B)

SECTION -B

ANSWER ALL THE QUESTIONS **5X10=50M**

6. (A)

OR

(B)

7. (A)

OR

(B)

8. (A)

OR

(B)

9. (A)

OR

(B)

10. (A)

OR

(B)

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SINGLE MAJOR PROGRAMME STRUCTURE FOR
B. C. A Honours (Computer Applications)
w.e.f 2023 – 2024 Admitted Batch

Year	Semester	Course	Title of the Course	No. of Hrs /Week	No. of Credits
I	I	1	Fundamentals of Commerce	3+2	4
		2	Business Organization	3+2	4
	II	3	Office Automation Tools	3	3
			Office Automation Tools Lab	2	1
		4	Programming in C	3	3
			Programming in C Lab	2	1
II	III	5	Database Management System	3	3
			Database Management System Lab	2	1
		6	Data Structures	3	3
			Data Structures Lab	2	1
		7	Object Oriented Programming Through JAVA	3	3
			Object Oriented Programming Through JAVA Lab	2	1
		8	Software Engineering	3	3
			Software Engineering Lab	2	1
	IV	9	Python Programming	3	3
			Python Programming Lab	2	1
		10	Operating Systems	3	3
			Operating Systems Lab	2	1
		11	Mobile Application Development using Android	3	3
			Mobile Application Development using Android Lab	2	1
III	V	12	Web Programming	3	3
			Web Programming Lab	2	1
		13	Web Development Using PHP & MySQL	3	3
			Web Development Using PHP & MySQL Lab	2	1
		14	Cloud Computing (OR) Machine Learning	3	3
			Cloud Computing (OR) Machine Learning	2	1
		15	Software Testing (OR) Foundations of Data Science	3	3
			Software Testing (OR) Foundations of Data Science	2	1
	VI	Semester Internship/Apprenticeship with 12 Credits			

Year	Semester	Course	Title of the Course	No. of Hrs /Week	No. of Credits
IV	VII	16	Parallel and Distributed Computing (OR) Big Data Technologies	3	3
			Parallel and Distributed Computing (OR) Big Data Technologies Lab	2	1
		17	Artificial Intelligence and Neural Networks (OR) Cryptography and Network Security	3	3
			Artificial Intelligence and Neural Networks (OR) Cryptography and Network Security Lab	2	1
		18	Bio-Informatics (OR) Mathematical and Statistical Foundations	3	3
			Bio-Informatics (OR) Mathematical and Statistical Foundations Lab	2	1
		SEC			
		19	Content Management (OR) Web Development with ReactJS	3	3
			Content Management (OR) Web Development with ReactJS Lab	2	1
		20	Data Analysis with Power BI (OR) Data Visualization Using Tableau	3	3
			Data Analysis with Power BI (OR) Data Visualization Using Tableau Lab	2	1
		Syllabus will be available in due course of time			
	VIII	21	Natural Language Processing & Text Analytics (OR) Social Network Analysis	3	3
			Natural Language Processing & Text Analytics (OR) Social Network Analysis Lab	2	1
		22	Cyber Security (OR) Block Chain Technology	3	3
			Cyber Security (OR) Block Chain Technology Lab	2	1
		23	Advanced Database Systems (OR) Applied Data Analytics	3	3
			Advanced Database Systems (OR) Applied Data Analytics Lab	2	1
		SEC			
		24	Search Engine Optimization (OR) Deep Learning	3	3
			Search Engine Optimization (OR) Deep Learning Lab	2	1
		25	Game Design & Development (OR) Bootstrap & JQuery	3	3
			Game Design & Development (OR) Bootstrap & JQuery Lab	2	1

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DATABASE MANAGEMENT SYSTEMS

SEM:III **Offered to: B.Sc. (MPCS/MCCS/MSCS)**

Course Code	**22CSCT34**	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 :2017-18	Year of Offering: 2023 -24	Year of Revision: ---- 2023-24	Percentage of Revision: 10%

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

Course Description:

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

Course Objectives:

1. To understand data, database, DBMS and its components and architecture.
2. To understand building blocks of ER model and EER model and their properties.
3. To understand CODD Rules, relational model, relational calculus relational algebra and normalization.
4. To understand SQL commands and implement the queries on tables.
5. To understand PL/SQL operations.

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

CO1	Gain the Knowledge on Database, DBMS and analyse the difference between file-based system and DBMS. (PO5, PO7)
CO2	Model Database using ER and EER diagrams and design database schemas based on that model. (PO5, PO7)
CO3	Understanding the fundamental concepts of DBMS with Special emphasis on Relational Model, understanding Normalization and applying it to normalization of database. (PO5, PO7)
CO4	Create a small database using SQL COMMANDS, store and Retrieve data from the database. (PO5, PO7).
CO5	Understanding PL/SQL and various operations in PL/SQL (PO5, PO7).

Syllabus		
Unit	**Learning Units**	**Lecture Hours**
I	**Overview of Database Management Systems:** Introduction to Data, information, data vs. information –database and DBMS- Role and advantages of DBMS – types of databases –problems with file system data management - -Database systems-components of Database system- DBMS functions **Data Models:** The importance of Data models – Data model basic building blocks – Business Rules- The evolution of Data Models-Degrees of data abstraction	12
II	**Entity-Relationship Modeling:** The Entity Relationship Model – entities – attributes –relationships – connectivity and cardinality –relationship degree - Developing an ER diagram – **The Extended Entity Relationship Model** Entity Super types and Subtypes- Specialization and Generalization -entity integrity - selecting primary keys - Natural Keys and Primary Keys - Primary Key Guidelines - When to Use Composite Primary Keys -	12
III	**The Relational Database Model:** A logical view of data- Tables and their characteristics – keys – Integrity rules – Relational Set operators – Codd"s Relational database rules **Normalization of database tables:** The need for normalization – The normalization process – converting to first normal form – conversion to second normal form – conversion to third normal form – higher level forms -	12
IV	**Structured Query Language:** Introduction to Sql-Data Definition Commands – Data Types - Creating Table Structures - SQL Constraints - advanced data definition commands - alter – drop **Data Manipulation Language:**Adding Table Rows Saving Table Changes - Updating Table Rows - Restoring Table Contents - Deleting Table Rows **Select Queries:** Selecting Rows with Conditional Restrictions – operators - advanced select queries – virtual tables – joining database tables – sub queries – SQL functions	12
V	**PL/SQL:**Introduction- -Structure of PL/SQL-PL/SQL Language Elements-Data Types-Control Structures- Iterative Control- Procedures – Functions - Database Triggers**:** Types of Triggers	12

Prescribed Text Books

	Author	**Title**	**Publisher**
1	Carlos Coronel, Steven Morris,PeterRob	Database Principles fundamentals of design, implementation and management	Cengage Learning
2	Steven Feuerstein	Oracle PL./SQL programming	OREILLY
	Raghu Rama krishnan	Database Management Systems	Mc Grawhill
	J. D. Ullman	Principles of Database Systems	Pearson prentice hall
	R. Elmasri&Navathe	Fundamentals of Database Systems	Pearson

Course Delivery method: Face-to-face / Blended **Course has focus on:** Skill Development, Employability
W**ebsites of Interest:**www.tutorialspoint.com/plsql www.javatpoint.com/pl-sql-tutorial
Co-curricular Activities: Programming Contests, Hackathons & Quiz.

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DATABASE MANAGEMENT SYSTEMS

MODELPAPER

Class: B.Sc.(MSCS,MCCS,MPCS) **Max.Marks:70M**
Course Code:22CSCT34 **Min.Pass:28M**
Semester: III **Time:3Hours**

SECTION-A

Answer All Questions **5 X 4= 20MARKS**

1. A)What are the differences between data and information. (L2, CO1)

(OR)

B) .Write a short note on evolution of data models. **(L2, CO1)**

2. A).Explain different types of attributes with neat diagrams. **(L1,CO2)**

(OR)

B). Explain about different keys in dbms? **(L1, CO2)**

3. A) Explain about Integrity rules (**L1,CO3)**

(OR)

B) Write about CODD'S rules? **(L1,CO3)**

4. A) Explain different types of Aggregate functions in SQL.**(L1,CO4)**

(OR)

B) Write a short note on string functions in SQL. **(L1,CO4)**

5. A) Explain Structure of PL/SQL**(L2,CO5)**

(OR)

B)Explain Functions in PL/SQL **(L2,CO5)**

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SECTION-B

Answer ALL Questions **5 X 10 = 50 MARKS**

6. A) Explain the role and advantages of DBMS?(L2,CO1)

(OR)

B) Explain briefly about degrees of data abstraction?(L2,CO1)

7. A) Explain Specialization hierarchy with an example?**(L1,CO2)**

(OR)

B) Explain Entity Relationship diagram with an example **(L1,CO2)**

8 A) Write a short note on relational set operators. **(L1,CO3)**

(OR)

B) What is normalization? Explain with an example up to 3NF? **(L1,CO3)**

9. A) Explain DDL, DML, DCL commands in SQL with example

(L2,CO4) (OR)

B). Explain views in SQL with syntax and examples. **(L2,CO4)**

10. A) Discuss about iterative control statements available in PL/SQL with syntax and examples.**(L2,CO5)**

(OR)

B). Explain types of Triggers in PL/SQL **(L2,CO5)**

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COMPUTERSCIENCE	**22CSCP34**	**2023-24**	**B.Sc.(MPCS,MCCs, MSCS)**

DATABASE MANAGEMENT SYSTEMS LAB

Course Objectives:

The main aim of this course is to enable students to experience database operations practically and develop logic in PL/SQL.

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

CO1	Able to implement basic relationships.(PO5, PO7)
CO2	Able to implement various SQL queries.(PO5, PO7)
CO3	Able to use no of constraints on data.(PO5, PO7)
CO4	Able to use different types of joins.(PO5, PO7)
CO5	Able to design PL/SQL programs(PO5, PO7)

LAB LIST

1. Order Tracking Database

The Order Tracking Database consists of the following defined six relation schemas. **Employees** (eno,ename,zip,hdate)
Parts (pno,pname,qoh,price,level) (hint: qoh: quality on hand)
Customers (cno,cname,street,zip,phone)
Orders (ono,cno,eno,received date,shipped date)
Odetails (ono,pno,qty)
Zipcodes (**zip,city)**

Solve the following queries

1. Get all pairs of customer numbers for customers based on same zip code.
2. Get part numbers for parts that have been ordered by at least two different customers.
3. For each odetail row, get ono, pno, pname,qty and price values along with the total price for the item. (total price=price*qty)
4. Get customer name and employee pairs such that the customer with namehas placed an order through the employee
5. Get customer names living in Fort Dodge or liberal.
6. Get cname values of customers who have ordered a product with pno 10506.
7. Get pname values of parts with the lowest price.
8. Get cname values of customers who have placed at least one order through the employee with number 1000.
9. Get the cities in which customers or employees are located.
10. Get the total sales in dollars on all orders.
11. Get part name values that cost more than the average cost of all parts.
12. Get part names of parts ordered by at least two different Customers.
13. Get for each part get pno, pname and total sales
14. For each part, get pno, pname, total sales, whose total sales exceeds 1000
15. Get pno, part names of parts ordered by at least two different customers.
16. Get cname values of customers who have ordered parts from any one employee based in Wichita or liberal.

2 .Shipment database

An enterprise wishes to maintain the details about his suppliers and other corresponding details. For that it uses the following tables

Table s(sid,sname,address)

primary key : sid

Table p(pid,pname,color)

primary key : pid

Table cat(sid,pid,cost)

primary key : sid + pid

reference key : sid references s.sid

pid references p.pid

Solve the following queries

1. Find the pnames of parts for which there is some supplier
2. Find the snames of suppliers who supply every part.
3. Find the snames of suppliers who suppy every red part.
4. Find the pnames of parts supllied by london supplier and by no one else
5. Find the sids of suppliers who charge more for some part other than the average cost of that part
6. Using group by with having clause get the part numbers for all the parts supplied by more than one supplier.
7. Get the names of the suppliers, who do not supply part p2.
8. Find the sids of suppliers who supply a red and a green part
9. Find the sids of suppliers who supply a red or a green part
10. 10.find the total amount has to pay for that supplier by part located from London

3. Employee database

AN ENTERPRISE WISHES TO MAINTAIN A DATABASE TO AUTOMATE ITS OPERATIONS. ENTERPRISE DIVIDED INTO TO CERTAIN DEPARTMENTS AND EACH DEPARTMENT CONSISTS OF EMPLOYEES. THE FOLLOWING TWO TABLES DESCRIBES THE AUTOMATION SCHEMAS

Dept (deptno, dname, loc)

Emp (empno,ename,job,mgr,hiredate,sal,comm,deptno)

1. Create a view, which contain employee names and their manager names working in sales department.
2. Determine the names of employee, who earn more than their managers.
3. Determine the names of employees, who take highest salary in their departments.
4. Determine the employees, who located at the same place.
5. Determine the employees, whose total salary is like the minimum salary
6. of any department.
7. Update the employee salary by 25%, whose experience is greater than 10 years.
8. Delete the employees, who completed 32 years of service.
9. Determine the minimum salary of an employee and his details, who join on the same date.
10. Determine the count of employees, who are taking commission and not taking Commission.
11. Determine the department does not contain any employees.
12. Find out the details of top 5 earner of company.
13. Display those managers name whose salary is more than average salary of his employees.
14. Display those employees who joined the company before 15th of the month?
15. Display the manager who is having maximum number of employees working under him?
16. Print a list of employees displaying „less salary" if less than 1500 if exactly 1500 display as „exact salary" and if greater than 1500 display „more salary"?

17. Display those employees whose first 2 characters from hire date-last 2 characters of salary?
18. Display those employees whose 10% of salary is equal to the year of joining?
19. In which year did most people join the company? Display the year and number of employees.
20. Display the half of the enames in upper case and remaining lower case
21. Display ename, dname even if there no employees working in a particular department(use outer join).

4. Pl/sql programs

1. Write a pl/sql program to check the given number is strong or not.
2. Write a pl/sql program to check the given string is palindrome or not.
3. Write a pl/sql program to swap two numbers without using third variable.
4. Write a pl/sql program to generate multiplication tables for 2,4,6.
5. Write a pl/sql program to display sum of even numbers and sum of odd numbers in the given range.
6. Write a pl/sql program to check the given number is palindrome or not.
7. write a pl/sql procedure to prepare an electricity bill by using following table

table used: elect

name	null?	Type mno	not null number(3)
cname		varchar2(20)	
cur_read		number(5)	
prev_read		number(5)	
no_units		number(5)	
amount		number(8,2)	
ser_tax		number(8,2)	
net_amt		number(9,2)	

8. Write a procedure to update the salary of employee, who belongs to certain department with a certain percentage of raise.

9. Write a PL/SQL program to fire triggers on insert, update and delete commands.

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Title of the Paper :**Object Oriented Programming Using JAVA**

Semester: III PAPER-IV

Offered To:	**B. Sc. (MPCS.MCCS,MSCS)**	**Course Code:**	**22CSCT31**
Course Type:	Core (Theory)	**Course:**	Object Oriented Programming using Java
Year of Introduction:	2016 - 2017	**Year of offering:**	2023 – 2024
Year of Revision:	2021	**Percentage of Revision:**	15 %
Semester:	III	**Credits:**	3
Hours Taught:	60 hrs. per semester	**Max. Time:**	3 Hrs

Course Prerequisites (if any): Programming Concepts.

Course Description: As the business environment becomes more sophisticated, the software development (software engineering is about managing complexity) is becoming increasingly complex. As of the best programming paradigm which helps to eliminate complexity of large projects, Object Oriented Programming (OOP) has become the predominant technique for writing software in the past decade. Many other important software development techniques are based upon the fundamental ideas captured by object-oriented programming.

Course Objectives:

1. Understand the features of Object Oriented Programming.
2. Understand features of Java programming language.
3. Know how to write and execute java programs in text editors.
4. Apply polymorphism, inheritance, multithreading, exception handling mechanism and packages in real life applications.
5. Write and read data from the files using streams, file handling methods and understand JDBC to perform database operations.

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

CO1	Understand the concept and underlying principles of Object-Oriented Programming, Understand how object-oriented concepts are incorporated into the Java programming language. (PO5, PO7).
CO2	Implement Object Oriented Programming Concepts (class, constructor, overloading, inheritance, overriding) in java. (PO5, PO7).
CO3	Analyse inheritance and interfaces in a Java program (PO5, PO7).
CO4	Evaluate Multithreading, exception handling in Java. (PO5, PO7).
CO5	Create applets and packages in a Java program, Use of Input/output Streams in java and use of JDBC with Oracle database. (PO5, PO7)

Syllabus		
Unit	**Learning Units**	**Lecture Hours**
I	**Fundamentals Of Object – Oriented Programming:** Introduction, Object Oriented paradigm, Basic Concepts of OOP, Benefits of OOP, Applications of OOP, Java features **Overview Of Java Language:** Introduction, Simple Java program structure, Java tokens, Java Statements, Implementing a Java Program, Java Virtual Machine, Command line arguments **Constants, Variables & Data types:** Introduction, Constants, Variables, Data Types, Declaration of Variables, Giving Value to Variables, Scope of variables, Symbolic Constants, Type casting, Getting Value of Variables, Standard Default values **Operators & Expressions**	10
II	**Decision Making & Branching:** Introduction, Decision making with if statement, Simple if statement, If - Else statement, Nesting of if- else statements, The else if ladder, The switch statement, The conditional operator. **Looping:** Introduction, The While statement, The do-while statement, The for statement, Jumps in loops. **Classes, Objects & Methods:** Introduction, Defining a class, Adding variables, Adding methods, Creating objects, Accessing class members, Constructors, Method overloading, Static members, Nesting of methods.	12
III	**Inheritance:** Extending a class, Overloading methods, Final variables and methods, Final classes, Abstract methods and classes. **Arrays, Strings:** Arrays, One-dimensional arrays, Creating an array, Two – dimensional arrays, Strings, Wrapper classes. **Interfaces:** MULTIPLE INHERITANCE: Introduction, Defining interfaces, Extending interfaces, Implementing interfaces, Assessing interface variables.	12
IV	**Multithreaded Programming:** Introduction, Creating Threads, Extending the Threads, Stopping and Blocking a Thread, Lifecycle of a Thread, Using Thread Methods, Thread Exceptions, Thread Priority, Synchronization, Implementing the 'Runnable ' Interface. **Managing Errors And Exceptions:** Types of errors, Compile-time errors, Run-time errors, Exceptions, Exception handling, Multiple Catch Statements, Using finally statement. **Packages:** Introduction, Java API Packages, Creating Packages, Accessing a Package, Using a Package.	13
V	**Applet Programming:** Local and remote applets, Applets and Applications, Building Applet code, Applet Life cycle: Initialization state, Running state, Idle or stopped state, Dead state, Display state. **Managing Input/ Output Files In Java:** Introduction, Concept of Streams, Stream classes, Byte Stream Classes, Character Stream classes: Reader stream classes, Writer Stream classes, Reading and writing files. **Java Database Connectivity:** JDBC introduction, Stages in JDBC Program, Working with Oracle Database: Inserting, Deleting and Updating records.	13

Text Books:

1. Programming with Java, E – Balagurusamy, 3e, TMH.
2. Core Java: An Integrated Approach, Dr. R. Nageswara Rao & KogentLearning Solutions Inc.

Reference Books:

1. Programming with Java, 2ed, John R. Hubbard, Schaum's outline Series, TMH
2. Deitel & Deitel, Java TM : How to program, PHI(2007)

Course Delivery method: Face-to-face / Blended
Course has focus on: Employability
Websites of Interest:

[1]. https://www.javatpoint.com/java-tutorial
[2]. https://www.w3schools.com/java/
[3]. https://www.tutorialspoint.com/jdbc/index.htm

Co-curricular Activities : Programming Contests, Assignments & Quiz.

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OBJECT ORIENTED PROGRAMMING USING JAVA

MODEL PAPER

CLASS: B.Sc. (MPCS, MCCS, MSCS) **Max. Marks:70M**

Course Code:**22CSCT31** **Min. Pass: 28M**

Semester: III **Time: 3 Hours**

SECTION A

Answer the following questions **5 x 4 = 20Marks**

1. A) Discuss about structure of java program.(CO1,L2)

   OR

   B) Discuss about data types in java. .(CO1, L2)
2. A) Explain class creation with methods, variables and create objects for it. (CO2,L2)

   OR

   B) Explain constructors in java with example. (CO2,L2)
3. A) Illustrate any five string handling methods in java.(CO3,L3)

   OR

   B) Illustrate implementing interfaces in java with example. (CO3,L3)
4. A) Describe creating threads in java with an example .(CO4,L2)

   OR

   B) Describe package creation and accessing with example.(CO4, L2)
5. A) Explain byte stream classes in java. (CO5,L2)

   OR

   B) Explain with program applet creation. (CO5, L2)

SECTION B

Answer the following questions **5 x 10 = 50Marks**

6. (A) Discuss Object Oriented Programming Principles.(CO1,L2)

   (OR)

   (B) Discuss Java Buzz words. (CO1, L2)
7. (A) Describe Method Overloading with an example program. (CO2,L2)

   (OR)

   (B)Describe the concept of static members in java with example. (CO2 ,L2)
8. (A) Explain the concept of final keyword with examples.(CO3,L2)

   (OR)

   (B)List of different types of inheritance in java and explain with examples.(CO3,L2)
9. (A) Explain life cycle of a thread with neat diagram.(CO4,L2)

   (OR)

   (B)Define Exception. Explain Exception handling mechanism in java with examples (CO4,L2)
10. (A) Explain life cycle of applet with neat diagram.(CO5,L2)

    (OR)

    (B)Explain different stages in JDBC program with an example..(CO5,L2)

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Object Oriented Programming Using JAVA Lab

SEMESTER-III **PAPER-IV**

Offered To:	B. Sc. (MPCS,MCCS,MSCS)	**Course Code:**	**22CSCP31**
Course Type:	Core (Practical)	**Course:**	Object Oriented Programming using Java Lab
Year of Introduction:	2016 – 2017	**Year of offering:**	2023 – 2024
Year of Revision:	2021	**Percentage of Revision:**	15%
Semester:	III	**Credits:**	1
Hours Taught:	30 hrs. per semester	**Max. Time:**	3 Hrs

Course Prerequisites (if any): Knowledge in OOP & Java concepts, Programming Fundamentals

Course Objective:

To enable students to implement various OOP concepts using Java programming language and also educating students in accessing databases using JDBC connectivity.

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

CO1	Implementing class, constructor, method overloading, method overriding in java. (PO5, PO7)
CO2	Implement different types of inheritance and interfaces in a Java program .(PO5, PO7)
CO3	Implement Multithreading, exception handling mechanisms in Java. (PO5, PO7)
CO4:	Implement Multithreading, exception handling mechanisms in Java. (PO5, PO7)
CO5	Implement Applets and JDBC connectivity. (PO5, PO7)

Java Lab list

1. Write a program to use command line arguments.
2. Write a program to demonstrate that include a method inside the Rectangular Class.
3. Write a program to demonstrate Parameterized Constructors.
4. Write a program to demonstrate Method Overloading.
5. Write a Program to demonstrate Constructor Overloading.
6. Write a program to demonstrate Method Inheritance.
7. Write a program to demonstrate Method Overriding.
8. Write a program to demonstrate Abstract Classes.
9. Write a program to arrange given Strings in Alphabetical Order.
10. Write a program for implementing interfaces.
11. Write a program on Multiple Inheritance.
12. Write a program to demonstrate the Creating threads using thread class.
13. Write a program to demonstrate using thread methods.
14. Write a program to Implement Thread Priority.
15. Write a program to demonstrate Catch Blocks.
16. Write a program to Import Packages.
17. Write a program to demonstrate Applet Program.
18. Write a program to create table and insert values into table in a database.
19. Write a program to delete values in a table in database.
20. Write a program to update values in a table in database.

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Title of the Paper PROGRAMMING WITH C & C++

Semester: III

CLASS:B.Com(CA)

Course Code	**22CABT31**	Course Delivery Method	Class Room/ Blended Mode-Both
Credits	**3**	CIA Marks	30
No. of Lecture Hours / Week	4	Semester End Exam Marks	70
Tot l Number of Lecture Hours	60	Tot l Marks	100
YearofIntroduction:2021	YearofOffering:2023-24	Year of Revision:----	PercentageofRevision: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 operator sand conditional statement sin 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, DATATYPES** **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,Sizeof. **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 ,Goto 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 USINGC++** 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	Ox ford University Press
2	E.Balaguru samy	Objected Oriented Programming with C++	Mc Graw Hill.

Reference Text Books:

	Author	Title	Publisher
1	E Balaguru samy	Computing Fundamentals & C Programming	TataMcGraw-Hill,2008
2	Ashok Kamthane	Programming with ANSI and Turbo C	PearsonPublisher,2002.
3	Y.Kanetkar	Let Us C++:	BPB

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PROGRAMMING WITH C & C++MODELPAPER

CLASS:B.Com(C.A) Max.Marks:70M

Course Code:: **22CABT31** Min.Pass:30M

Semester: III **Time:3Hours**

SECTION-A

Answer any FIVE questions **5 X 4= 20 MARKS**

1. A) Explain the structure of a C Program. (CO1,L2)

   (OR)

   B) Explain different types of files used in C Program. (CO1, L2)
2. A) Explain the working of go-to statement with example program (CO2,L2)

   (OR)

   B) Comparison between if and if-else statements. (CO2, L2)
3. A) List in detail about the concept of scope of variables.(CO3,L1)

   (OR)

   B) Demonstrate a C Program to sort the given numbers in an array. (CO3, L2)
4. A) Define Union concept in C with example program? (CO4,L1)

   (OR)

   B) List out any five String function with suitable examples. (CO4, L1)
5. A) Explain some differences between C & CPP (CO5, L2)

   (OR)

   B) Explain a) Encapsulation b) Abstraction concepts in CPP. (CO5, L2)

SECTION-B

Answer ALL questions **5 X 10 = 50 MARKS**

6. 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)
7. A) Explain looping statements in C with example programs. (CO2,L2)

   (OR)

   B)Explain different types of operators in C language. (CO2, L2)
8. 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)
9. 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)
10. A) 1. Explain structure of a C++ program in detail. (CO5,L2)

    2. Comparison between C and C++ (CO5,L2

    (OR)

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

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(With Effect from Academic Year 2020-21)

PROGRAMMING WITH C & C++ LAB

COMPUTERSCIENCE	**22CABP31**	**2023-24**	**B.Com(Computer Applications)**

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

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 to

CO1	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 concepts
CO5	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
12 Write a C program to find the reverse of a given number using functions13
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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Title of the Paper : **WEB TECHNOLOGY**

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

Course Code	**ECCSCT31**	Course Delivery Method	Class Room / Blended Mode – Both
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 :2023-24	Year of Offering: 2023 - 24	Year of Revision: ----	Percentage of Revision: 0%

Course Objectives:

1.Learn the fundamentals of HTML
2. Learn the fundamentals of CSS
3. Learn the fundamentals of JavaScript
4. Learn to fundamentals of Objects in JavaScript
5. Learn to fundamentals of DHTML with JavaScript

Course Outcomes:

CO1	Able to use of HTML(PO5,PO7)
CO2	Able to use of CSS(PO5,PO7)
CO3	Able to use of JavaScript(PO5,PO7)
CO4	Able to use of Objects in JavaScript(PO5,PO7)
CO5	Able to use of DHTML with JavaScript (PO5,PO7)

Unit	Learning Units	Lecture Hours
I	**Introduction:** HTML, XML, and WWW, Topologies - Bus, Star, Ring, Hybrid, Tree; LAN,WAN,MAN.(3Hrs) **HTML:** Basic HTML, Document body, Text, Hyperlinks, Adding more formatting, Lists, Tables using colors and images. **More HTML:** Multimedia objects, Frames, Forms towards interactive, HTML document heading. (9 Hrs)	12
II	**Cascading Style Sheets:** Introduction, using Styles, simple examples(3HRs). Using your own styles, properties and values in styles, style sheet, formatting blocks of information, layers.(9 Hrs)	12
III	**Introduction to JavaScript:** What is DHTML? , JavaScript, basics, variables(3Hrs). String manipulations, mathematical functions, statements, operators, arrays, functions. (9 Hrs)	12
IV	**Objects in JavaScript**: Data and objects in JavaScript(3Hrs). Regular expressions, exception handling, built-in objects, and events.(9 Hrs)	12
V	**DHTML with JavaScript**: Data validation, opening a new window(3 Hrs). Messages and confirmations, the status bar, different frames, rollover moving buttons, images, multiple pages in single download, text only menu system.(9Hrs)	12

Text Book:

1. Uttam Kumar Roy, Web Technologies, Oxford University Press.

References:

1. Kogent Learning Solutions Inc.(Author), "Black Book HTML 5.0", dreamtech.
2. Thomas A. Powell, "Complete reference HTML 5.0", McGraWHo;.
3. Web Technology, PHI Publications.

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(With Effect from Academic Year 2023-24)

COMPUTERSCIENCE	**ECCSCT31**	**2023-24**	**B.Com(e-Commerce)**

SEMESTER–III **PAPER–III** **Max. Marks:70M**

Model Paper: WEB TECHNOLOGY

SECTION – A

Answer any FIVE questions: **5 X 4 = 20 Marks**

1. A) Explain Nested Frames in HTML with an Example.(CO1, L1)
   (OR)
   B) Explain Types of Networks.(CO1,L1)

2. A) Explain about div and span tag?(CO2, L1)
   (OR)
   B) Explain about Text Layers?(CO2, L1)

3. A) Explain Mathematical Functions available in JavaScript? (CO3,L1)
   (OR)
   B) Define Arrays in javascript? (CO3,L1)

4. A) Explain Regular expressions? (CO4, L1)
   (OR)
   B)Explain about Event handing methods? (CO4, L1)

5. A) Explain about data validation.(CO5, L1)
   (OR)
   B) Explain Massages and Conformations? (CO5, L1)

SECTION – B

Answer ALL questions: **5 X 10 = 50 Marks**

6. (A)What is a Topology? Explain various types of Topologies in detail.(CO1, L1)
   (**OR)**
   (B) What is a FORM in HTML.Explain the FORM elements in detail. (CO1, L1)

7. (A) What is CSS? Illustrate different style sheets with examples. (CO2, L4)
   (OR)
   (B) Categorize the properties and values in style sheets.(CO2, L4)

8. (A) Explain about String manipulation functions in JavaScript with examples.(CO3, L1)

(OR)

(B) What are the control statements in JavaScript? Explain with examples. (CO3, L1)

9. (A) What is exception handling? How it is handled in JavaScript. Explain with an example. (CO4,L1)

(OR)

(B) Explain briefly about various built-in objects of JavaScript.(CO4, L1)

10. (A) Describe the following(CO5, L1)
    a) Popup boxes - 3M
    b) opening a new window- 3M
    c) Writing in a different Frame -4M

(OR)

(B) Describe the following (CO5, L1)

a) Status bar – 3M
b) Roll over Buttons - 3M
c) Moving Images - 4M

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Computer Science	**ECCSCP31**	**2023-24**	**B. Com (E-Commerce Computers)**

Semester - III **PAPER-III** **Credits: 1**

COURSE OBJECTIVES:
The purpose of this course is to introduce to students to the field of creation web pages using HTML language.
The students will be able to enhance their analyzing and help to creation for Web Site Design

COURSE OUTCOMES:

COURSE OUTCOME NO	Upon successful completion of this course, students should have the knowledge and skills to
CO1	Implement HTML tags.
CO2	Implementing lists and tables in web pages.
CO3	Implementing frames in web pages.
CO4	Implementing frames in web pages.
CO5	Creation of CSS in a web page.

Week 1: Write a HTML program to print text in bold and italic font.
Week 2: Write a HTML program to print Heading tags.
Week 3: Write a HTML program using Text formatting tags
Week 4: Write a HTML program to implement unordered lists. Write a HTML program to implement order lists.
Week 5: Write a html file which display 3 images at LEFT, RIGHT and CENTER respectively in the browser.
Week 6: Create a HTML file which contains hyperlinks.
Week 7: Write a HTML program to Create a table
Week 8: Write a HTML program to Create a table using Row Span and Col Span.
Week 9: Write a HTML program to Create a simple form
Week 10: Create a Registration form that interacts with the user. Collect login name, password, date of birth, gender, address, qualification.
Week 11: Create a HTML page using frameset tag.

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Autonomous-ISO 9001–2015Certified

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	25
No .of Lecture Hours /Week	3	Semester End Exam Marks	75
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction:2022-23	Year of Offering: 2023-24	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.

CO1	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 pluginsto use in their websites. (PO5,PO7)

Syllabus

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, YouTube, 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:** Geo location, Drag/drop, local storage, HTML SSE	12
III	**Client side Validation:** Introduction to JavaScript: What Is DHTML?, Java Script Basics, Variables, String Manipulations, Mathematical Functions, Statements, Operators, Arrays, Functions. Objects in JavaScript– Data and Objects In Java Script, 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. PaulS.Wang Sanda S.Katila,an Introduction to Web Designplus Programming ,Thomson
5. Head First HTML and CSS, Elisabeth Robson, Eric Freeman ,O'Reilly MediaInc.
6. An Introduction to HTML and Java Script :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 wordpress ,Brad Williams ,Daviddamstra,Hanstern.
10. Webresources:

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**	**2023-24**	**B.SC(MPCS,MCCS)**

SEMESTER–V/VI **PAPER–VI** **Max. Marks 75** **Model Paper:**

WEB INTERFACE DESIGNING TECHNOLOGIES

No of Hours : 3 **No of Credits : 3** **Pass Marks 30**

SECTION–A

Short Answer Questions

Answer any Four questions.
(Atleast 1 question should be given from each Unit) (5x5=25Marks)

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 hyper links 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 x10 =50Marks)

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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(**With Effect from Academic Year 2023-24**)

COMPUTER SCIENCE	**SECCSCP01**	**2023-24**	**B.SC(MPCS,MCCS)**

SEMESTER–V/VI **PAPER–VI**

Max.Marks50

Lab List : WEB INTERFACE DESIGNING TECHNOLOGIES LAB

No. of Hours per week: 3 **External: 40** **Internal:10** **Credits:1**

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:(30periods)

HTML and CSS:

1. Create an HTML document with the following formatting options:
(a)Bold,(b)Italics,(c)Underline,(d)Headings(UsingH1toH6headingstyles),(e)Font(Type,SizeandColor), (f) Background (Colored background/Image in background), (g) Paragraph, (h) Line Break, (i)Horizontal Rule,(j)Pretag
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)Checkboxes(d)Reset and Submit buttons
4. Embeda calendar object in your webpage.
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 webpage.
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 lowercase and displays the text in uppercase
15. Write a java script program for username 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 homepage.
18. Add an external video link with size 640X360.
19. Create a user and assign aroletohim.
20. Create a login page to word press using custom links

III. Lab References:

1. Web technologies by A.A.Puntam bekar
2. Web Technologies by N.P.Gopalan ,Eastern Economy Edition,2nd edition
3. Wordpress for Beginners, Dr.Andy Williams.
4. Professional word press, Brad Williams, Daviddamstra,Hanstern.

Reference Materials on the Web/weblinks:1.https://onlinecourses.nptel.ac.in/noc17_cs22/course2.http://www.codecademy.com/tracks/web3.http://www.w3schools.com4.https://www.w3schools.in/wordpress-tutorial/

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Vuyyuru-521165.NAAC credited at'A'level

Autonomous-ISO 9001–2015Certified

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: 2023-24	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 Recording to it related programs(PO7)

Unit	Learning Units	Lecture Hours
I	**The Building blocks of PHP :** Variables, Datatypes, 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

Text books and References

1. Julie C. Meloni, SAMS Teach yourself PHP MySQL and Apache, Pearson education
2. Steven Holzner ,PHP:The Complete Reference ,Mc Graw-Hill
3. Robin Nixon, Learning PHP, MySQL ,JavaScript, CSS & HTML5 ,Third Edition O' reilly ,2014
4. Xue Bai Michael Ekedahl, 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**	**2023-24**	**B.SC(MPCS,MCCS)**

SEMESTER–V/VI **PAPER–VII** **Max.Marks70**

Model Paper : Web Applications Development using PHP & MYSQL

No of Hours : 3 **No of Credits : 3** **Pass Marks28**

SECTION–A

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

Answer any Four questions. (Atleast 1 question should begiven 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 a bout Cookies concept.(CO3,L2)
5) Explain a bout Image creation.(CO4,L2)
6) Write short note on Mysqli.(CO5,L1)

SECTIONB

(5 x10=50Marks)

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) Compareand 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	**SECCSCP02**	**2023-24**	**B.SC(MPCS,MCCS)**

SEMESTER–V/VI **PAPER –VII** **Max.Marks50**

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 in to iterated programs(PO7)

II: Practical (Laboratory) Syllabus: (30 Periods) : Atleast 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 textbox ,checkbox ,radio button, select, submit button. And display user inserted value in new PHP page.
8. CreateWebsiteRegistrationFormusingtextbox,checkbox,radiobutton,select,sumitbutton.Anddisplayuserinsertedvalueinthenew 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 forth retrials only.
iii. Delete the user if he spent more than 100Hrs 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,it empurchased, 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 website using PHP and MySQL.

Text books 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,Third Edition O'reilly.
3. **Web resources :** a .http: //www .codecademy.com /tracks/phpb.http://www.w3schools.com/PHP

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VALUE ADDED COURSE

Programmes: B. Sc Honours (Zoology), B. Sc Honours (Aqua), B. Sc Honours (Botany), B. Com (G), B. Com Honours (Computer Applications)

Max: 35 Marks **Time: 90 Min**

Title: OFFICE TOOLS **course code: 23VAC1** 3 hrs/week Course

Course Objectives:

- ✓ To introduce the environment of GUI in Ms-Word and its features..
- ✓ To introduce the fundamental concepts using Ms-Word and its features to make it more useful.
- ✓ To provide hands-on use of Word, Excel and PowerPoint

Course Outcomes:

The students will be able:

- ✓ To understand concept of Word Processor and use its features.
- ✓ To use the advanced features of Ms-Word to make day to day usage easier.
- ✓ To work comfortably with Ms-Excel Environment.
- ✓ To Create worksheets and use advanced features of Excel.
- ✓ To create presentations and inserting multimedia items in them.

Syllabus

UNIT–I : Introduction to Ms-Office & Ms-Word MS-Word: Features of MS-Word, MS-Word Window components, working with formatted text, Shortcut keys, Formatting documents: Selecting text, Copying &moving data, Formatting characters, changing cases, Paragraph formatting, Indents, Drop Caps, Using format painter, Page formatting, Header &footer, Bullets & numbering, Tabs, Forming tables. Finding & replacing text, go to(F5) command, proofingtext (Spellcheck, Auto correct),

Case Study:

1. Create a document to write a letter to the DM&HO of the district complaining about Hygienic conditions in your area.
2. Create a document to share your experience of your recent vacation with family.

UNIT–II :Ms-Word Advanced Features Difference between Wizard and Template - Customize the Quick Access Tool Bar – Macros: Purpose – Creating Macro – Using Macro – Storing Macro - Inserting pictures: From Computer, Online Pictures – Insert 3d Models - Insert Shapes – Insert Text Box – Insert Equation, Hyperlinks-Tables : Insert tables - Mail merge ,Printing documents, Tables : Insert tables, Mathematical calculations on tables data. Insert Text Box etc.

Case Study:

1. Create a document to send a holiday intimation to all the parents at time about Dasara Vacation.
2. Create a document to create Time Table of you class using tables.

UNIT–III: Introduction to Ms-Excel & Its Features MS-Excel: Excel Features, Spread sheets, workbooks, creating, saving &editing a workbook, Renaming sheet, cell entries(numbers, labels, and formulas),spell check, find and replace, Adding and deleting rows and columns Filling series, fill with drag, data sort, Formatting worksheet, Functions and its types, Some useful Functions in excel(SUM,AVERAGE,COUNT, MAX,MIN, IF),

Case Study:

1. Create a worksheet with you class marks displaying total, average, top marks in the class and least marks in the class.
2. Create a Worksheet with employee no, name, job, salaries of 10 employees, calculate DA,TA,HRA ,Gross Salary and Net Salary.

i. Find the sum of HRA's of Total employees.
ii. Find the average DA Display the Maximum salary of the employee.

UNIT-IV: Ms-Excel Advanced Features Cell referencing (Relative, Absolute, Mixed), What-if analysis, Introduction to charts: types of charts, creation of charts, printing a chart, printing worksheet – Sort – Filters – View Menu- Goal Seek –Scenarios.

Case Study:

1. Prepare a chart with height and weights of you class mates in at least 3 types of charts.
2. Demonstrate the use of Filter with the attendance data of your class.

UNIT-V: Ms-PowerPoint and its Applications

MS-PowerPoint: Features of Power Point, Uses, components of slide, templates and wizards, using template, choosing an auto layout, using outlines, adding subheadings, editing text, formatting text, using master slide, adding slides, changing color scheme, changing background and shading, adding header and footer, adding clip arts and auto shapes. Various presentation, Working with slide sorter view(deleting, duplicating, rearranging slides),adding transition and animations to slide show, inserting music or sound on a slide, viewing slideshow, Printing slides.

Case Study:

3. Prepare a chart with height and weights of you class mates in at least 3 types of charts.
4. Demonstrate the use of Filter with the attendance data of your class.

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VALUE ADDED COURSE

Title: OFFICE TOOLS course code: 23VAC1

Programmers: B. Sc Honours (Zoology), B. Sc Honours (Aqua), B. Sc Honours (Botany), B. Com (G), B. Com Honours (Computer Applications)

Max: 35 Marks **Time: 90 Min**

Section-A

Answer any **THREE** from the following 3x5 =15Marks

1.Explain about text formatting options in Ms-word. (CO1, L6)

2.How to Create Micro. (CO1, L6)

3. Explain Any five functions in Excel. (CO2, L6)

4.Explain Types of charts. (CO2, L6)

5. Explain header and footer in Ms-power point. (CO3, L6)

Section-B

Answer any **TWO** from the following 2 x10 = 20Marks

6.Explain about MS-Word Features. (CO1, L1)

7. Explain the Process of Mail Merge(CO2, L6)

8. Explain Features MS-Excel. (CO3, L1)

9. Explain Working with slide sorter view (CO3, L6)

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