

III Semester

TRANSFORM CALCULUS, FOURIER SERIES AND NUMERICAL TECHNIQUES			
Course Code:	21MAT31	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	3:0:0:0	SEE Marks	50
Total Hours of Pedagogy	40	Total Marks	100
Credits	03	Exam Hours	03
Course Objectives:			
CLO 1. To have an insight into solving ordinary differential equations by using Laplace transform techniques			
CLO 2. Learn to use the Fourier series to represent periodical physical phenomena in engineering analysis.			
CLO 3. To enable the students to study Fourier Transforms and concepts of infinite Fourier Sine and Cosine transforms and to learn the method of solving difference equations by the z-transform method.			
CLO 4. To develop the proficiency in solving ordinary and partial differential equations arising in engineering applications, using numerical methods			

DATA STRUCTURES AND APPLICATIONS			
Course Code:	21CS32	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	3:0:2:0	SEE Marks	50
Total Hours of Pedagogy	40 T + 20 P	Total Marks	100
Credits	04	Exam Hours	03
Course Objectives:			
CLO 1. Explain the fundamentals of data structures and their applications essential for implementing solutions to problems.			
CLO 2. Illustrate representation of data structures: Stack, Queues, Linked Lists, Trees and Graphs.			
CLO 3. Design and Develop Solutions to problems using Arrays, Structures, Stack, Queues, Linked Lists.			
CLO 4. Explore usage of Trees and Graph for application development.			
CLO 5. Apply the Hashing techniques in mapping key value pairs.			

ANALOG AND DIGITAL ELECTRONICS			
Course Code	21CS33	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	3:0:2:0	SEE Marks	50
Total Hours of Pedagogy	40 T + 20 P	Total Marks	100
Credits	04	Exam Hours	03
Course Learning Objectives:			
CLO 1. Explain the use of photo electronics devices, 555 timer IC, Regulator ICs and uA741			
CLO 2. Make use of simplifying techniques in the design of combinational circuits.			
CLO 3. Illustrate combinational and sequential digital circuits			
CLO 4. Demonstrate the use of flipflops and apply for registers			
CLO 5. Design and test counters, Analog-to-Digital and Digital-to-Analog conversion techniques.			

COMPUTER ORGANIZATION AND ARCHITECTURE			
Course Code	21CS34	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	3:0:0:0	SEE Marks	50
Total Hours of Pedagogy	40	Total Marks	100
Credits	03	Exam Hours	03
Course Learning Objectives			
CLO 1. Understand the organization and architecture of computer systems, their structure and operation			
CLO 2. Illustrate the concept of machine instructions and programs			
CLO 3. Demonstrate different ways of communicating with I/O devices			
CLO 4. Describe different types memory devices and their functions			
CLO 5. Explain arithmetic and logical operations with different data types			
CLO 6. Demonstrate processing unit with parallel processing and pipeline architecture			

III Semester

OBJECT ORIENTED PROGRAMMING WITH JAVA LABORATORY			
Course Code	21CSL35	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	0:0:2:0	SEE Marks	50
Total Hours of Pedagogy	24	Total Marks	100
Credits	1	Exam Hours	03
Course Objectives:			
CLO 1. Demonstrate the use of Eclipse/Netbeans IDE to create Java Applications.			
CLO 2. Using java programming to develop programs for solving real-world problems.			
CLO 3. Reinforce the understanding of basic object-oriented programming concepts.			

MASTERING OFFICE (Practical based)			
Course Code	21CSL381	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	0:0:2:0	SEE Marks	50
Total Hours of Pedagogy	12T + 12P	Total Marks	100
Credits	01	Exam Hours	02
Course Objectives:			
CLO 1. Understand the basics of computers and prepare documents and small presentations.			
CLO 2. Attain the knowledge about spreadsheet/worksheet with various options.			
CLO 3. Create simple presentations using templates various options available.			
CLO 4. Demonstrate the ability to apply application software in an office environment.			
CLO 5. Use MS Office to create projects, applications.			

IV Semester

MATHEMATICAL FOUNDATIONS FOR COMPUTING			
Course Code:	21CS41	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	2:2:0:0	SEE Marks	50
Total Hours of Pedagogy	40	Total Marks	100
Credits	03	Exam Hours	03
Course Objectives:			
CLO 1. Understand an intense foundational introduction to fundamental concepts in discrete mathematics.			
CLO 2. Interpret, identify, and solve the language associated with logical structure, sets, relations and functions, modular arithmetic.			
CLO 3. To develop probability distribution of discrete and continuous random variables. Joint probability distribution occurs in digital signal processing, design engineering and microwave engineering.			

DESIGN AND ANALYSIS OF ALGORITHMS			
Course Code	21CS42	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	3:0:2:0	SEE Marks	50
Total Hours of Pedagogy	40 T + 20 P	Total Marks	100
Credits	04	Exam Hours	03
Course Learning Objectives:			
CLO 1. Explain the methods of analysing the algorithms and to analyze performance of algorithms.			
CLO 2. State algorithm's efficiencies using asymptotic notations.			
CLO 3. Solve problems using algorithm design methods such as the brute force method, greedy method, divide and conquer, decrease and conquer, transform and conquer, dynamic programming, backtracking and branch and bound.			
CLO 4. Choose the appropriate data structure and algorithm design method for a specified application.			
CLO 5. Introduce P and NP classes.			

MICROCONTROLLER AND EMBEDDED SYSTEMS			
Course Code	21CS43	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	3:0:2:0	SEE Marks	50
Total Hours of Pedagogy	40 T + 20 P	Total Marks	100
Credits	04	Exam Hours	03
Course Learning Objectives:			
CLO 1: Understand the fundamentals of ARM-based systems, including programming modules with registers and the CPSR.			
CLO 2: Use the various instructions to program the ARM controller.			
CLO 3: Program various embedded components using the embedded C program.			
CLO 4: Identify various components, their purpose, and their application to the embedded system's applicability.			
CLO 5: Understand the embedded system's real-time operating system and its application in IoT.			


IV Semester

OPERATING SYSTEMS			
Course Code:	21CS44	CIE Marks	50
Teaching Hours/Week (L:T:P:S)	2:2:0:0	SEE Marks	50
Total Hours of Pedagogy	40	Total Marks	100
Credits	03	Exam Hours	03
Course Objectives:			
CLO 1. Demonstrate the need for OS and different types of OS			
CLO 2. Apply suitable techniques for management of different resources			
CLO 3. Use processor, memory, storage and file system commands			
CLO 4. Realize the different concepts of OS in platform of usage through case studies			

PYTHON PROGRAMMING LABORATORY			
Course Code	21CSL46	CIE Marks	50
Teaching Hours/Weeks (L: T: P: S)	0: 0: 2: 0	SEE Marks	50
Total Hours of Pedagogy	24	Total Marks	100
Credits	01	Exam Hours	03
Course Objectives:			
CLO 1. Demonstrate the use of IDLE or PyCharm IDE to create Python Applications			
CLO 2. Using Python programming language to develop programs for solving real-world problems			
CLO 3. Implement the Object-Oriented Programming concepts in Python.			
CLO 4. Appraise the need for working with various documents like Excel, PDF, Word and Others			
CLO 5. Demonstrate regular expression using python programming			

IV Semester

WEB PROGRAMMING (Practical based)			
Course Code	21CSL481	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	0:0:2:0	SEE Marks	50
Total Hours of Pedagogy	12T + 12P	Total Marks	100
Credits	01	Exam Hours	02
Course Objectives:			
CLO 1. Learn Web tool box and history of web browsers.			
CLO 2. Learn HTML, XHTML tags with utilizations.			
CLO 3. Know CSS with dynamic document utilizations.			
CLO 4. Learn JavaScript with Element access in JavaScript.			
CLO 5. Logically plan and develop web pages..			


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