



KLS Vishwanathrao Deshpande Institute of Technology

(Approved by AICTE, New Delhi. Affiliated to VTU, Belagavi)

(Recognized Under Section 2(f) by UGC, New Delhi)

Udyog Vidya Nagar, Haliyal – 581329, Dist.: Uttara Kannada

Phone: 08284-220861, 220334, 221409, Fax: 08284-220813

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COs STATEMENTS FOR THE SCHEME 2018 (BATCH:2018 – 2022)

Sl. No.	Sub Name	COs	CO Statement
1st SEMESTER			
1	Calculus and Linear Algebra	18MAT11.1	Apply the knowledge of calculus to solve problems related to polar curves and its applications in determining the bentness of a curve
		18MAT11.2	Learn the notion of partial differentiation to calculate rates of change of multivariate functions and solve problems related to composite functions and Jacobians
		18MAT11.3	Apply the concept of change of order of integration and variables to evaluate multiple integrals and their usage in computing the area and volumes
		18MAT11.4	Solve first order linear/nonlinear differential equations analytically using standard methods
		18MAT11.5	Make use of Matrix theory for solving system of linear equations and compute Eigenvalues & Eigenvectors required for matrix diagonalization process
2	Engineering Physics	18PHY12.1	Learn and understand various types of oscillations and their implications, Recognize the significance of shock waves and its applications in various fields
		18PHY12.2	To get acquainted with the elastic properties of materials by understanding the definitions of elasticity, stress, strain, modulus of rigidity, Young's modulus, bulk modulus and elastic limit.
		18PHY12.3	To realize the interrelation between time varying electric field and magnetic field, properties of electromagnetic (EM) waves, Maxwell's equations and their role in optical fiber communication.
		18PHY12.4	Gain knowledge of the intricacies of matter and energy, which is essential to explore the role of subatomic particles in understanding properties of matter at macro, micro and nano level using the principles of quantum mechanics and to understand the physics of lasers, various types of lasers and to appreciate their role in modern technology.
		18PHY12.5	Learn the niceties of technologically important material such as conductor, semiconductor and dielectrics, their potential properties in understanding there use in engineering applications.
3	Basic Electrical Engineering	18ELE13.1	Students will be able to comprehend the basic concept of AC and DC circuit
		18ELE13.2	Explain the working principle and construction of AC and DC machines
		18ELE13.3	Explain the working principle and construction of transformer
		18ELE13.4	Understand the electrical wiring concepts, earthing, domestic protection devices and electric shock
4	Elements of Civil Engineering & Mechanics	18CIV14.1	Mention the applications of various fields of Civil Engineering
		18CIV14.2	Compute the resultant of given force system subjected to various loads
		18CIV14.3	Comprehend the action of Forces, Moments and other loads on systems of rigid bodies and compute the reactive forces that develop as a result of the external loads.
		18CIV14.4	Locate the Centroid and compute the Moment of Inertia of regular and built-up sections
		18CIV14.5	Express the relationship between the motion of bodies and analyze the bodies in motion.
5	Engineering Graphics	18EGDL15.1	Prepare engineering drawings as per BIS conventions mentioned in the relevant codes
		18EGDL15.2	Produce computer generated drawings using CAD software.
		18EGDL15.3	Use the knowledge of orthographic projections to represent engineering information / concepts and present the same in the form of drawings
		18EGDL15.4	Develop isometric drawings of simple objects reading the orthographic projections of those objects.
		18EGDL15.5	Convert pictorial and isometric views of simple objects to orthographic views.



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6	Engineering Physics Laboratory	18PHYL16.1	To recognize the importance of light by exploring its interaction with matter and in realizing its characteristic properties
		18PHYL16.2	Understanding of mechanical properties of the material by the application of stress.
		18PHYL16.3	Appreciating the significance of elementary electric circuits in the functioning of various electric /electronic devices and gaining understanding of physics of the materials.
		18PHYL16.4	Design and implementation of electronic circuits to gain better understanding of physics of semiconductor devices.
		18PHYL16.5	Appreciating the role of Quantum mechanics in exploring the electrical properties of the materials.
7	Basic Electrical Engineering Laboratory	18ELE17.1	Determine the current, power drawn and comparing power factor of the different lamps
		18ELE17.2	Determine impedance of an electrical circuit and power consumed in a 3 phase load.
		18ELE17.3	Determine the earth resistance and understand the operation of two way and three way control of lamp.
		18ELE17.4	Understand the basic functioning of domestic appliances like fuse, MCB, UPS
8	Technical English I	C01	Use grammatical English and essentials of language skills and identify the nuances of phonetics, intonation and flawless pronunciation
		C02	Implement English vocabulary at command and language proficiency
		C03	Identify common errors in spoken and written communication
		C04	Understand and improve the non-verbal communication and kinesics
		C05	Perform well in campus recruitment, engineering and all other general competitive examinations
2ND SEMESTER			
9	Advanced Calculus and Numerical Methods	18MAT21.1	To solve first order linear/nonlinear differential equations analytically using standard methods
		18MAT21.2	Explain various physical models through higher order differential equations and solve such linear ordinary differential equations
		18MAT21.3	Understand a variety of partial differential equations and solution by exact methods/method of separation of variables
		18MAT21.4	Describe the applications of infinite series and obtain series solution of ordinary differential equations
		18MAT21.5	Apply the knowledge of numerical methods in the models of various physical and engineering phenomena
10	Engineering Chemistry	18CHE22.1	Knowledge on the use of free energy in equilibria, rationalize bulk properties and processes using thermodynamic considerations, electrochemical energy systems.
		18CHE22.2	Knowledge on the causes and effects of corrosion of metals and control of corrosion. Modification of the surface properties of metals to develop resistance to corrosion, wear, tear, impact, etc. by electroplating and electroless plating.
		18CHE22.3	Knowledge on the importance of energy conservation in the context of energy crisis, fuel properties and importance of solar energy as sustainable source and PV cells for solar energy conversion.
		18CHE22.4	Knowledge on the environmental pollution, waste management and water chemistry.
		18CHE22.5	Knowledge on the different techniques of instrumental methods of analysis. Fundamental properties of nanomaterials.
11	C Programming for Problem Solving	18CPS23.1	Illustrate simple algorithms from the different domains such as mathematics, physics, etc.
		18CPS23.2	Construct a programming solution to the given problem using C.



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		18CPS23.3	Identify and correct the syntax and logical errors in C programs.
		18CPS23.4	Modularize the given problem using functions and structures.
12	Basic Electronics	18ELN24.1	Outline the operation of semiconductor diodes, and its applications like rectifiers, photocouplers, and fixed voltage ic regulator and apply the concepts to solve the numerical of rectifiers
		18ELN24.2	Describe the general operating principles of jfets, mosfets, scr, by applying their concepts to various applications.
		18ELN24.3	List the characteristics of the opamp and describe the operations of simple opamp circuits and apply the same concepts to solve the numerical
		18ELN24.4	By outlining the characteristics of feedback amplifiers explain different types of feedback along with the working of bjt amplifiers, and apply the concept of barkhausen's criteria to obtain the oscillations.
		18ELN24.5	Explain the different number system and their conversions and construct simple combinational and sequential logic circuits using flip flops.
		18ELN24.6	Describe the basic principle of operation of communication system and mobile phones.
		13	Elements of Mechanical Engineering
18ME25.2	comprehend the basic concepts of thermodynamics		
18ME25.3	understand the concepts of boilers, turbines,pumps,internal combustion engine and refrigeration		
18ME25.4	distinguish different metal joining techniques and power transmission		
18ME25.5	enumerate the knowledge of working with conventional machine tools, their specifications and advanced manufacturing processes.		
14	Engineering Chemistry Laboratory	18CHEL26.1	Students will have the knowledge in handling different types of instruments for analysis of materials using small quantities of materials involved for quick and accurate results
		18CHEL26.2	Students will have the knowledge in carrying out different types of titrations for estimation of concerned in materials using comparatively more quantities of materials involved for good results
15	C Programming Laboratory	18CPL27.1	Write algorithms, flowcharts and program for simple programs.
		18CPL27.2	Correct syntax and logical errors to execute a program.
		18CPL27.3	Write iterative and wherever possible recursive programs.
		18CPL27.4	Demonstrate use of functions, arrays, strings, structures and pointers in problem solving.
16	Technical English II	C01	Identify common errors in spoken and written communication
		C02	Get familiarized with English vocabulary and language proficiency
		C03	Improve nature and style of sensible writing ad acquire employment and workplace communication skills
		C04	Improve their technical communication skills through technical reading and writing practices
		C05	Perform well in campus recruitment, engineering and all other general competitive examinations



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3RD SEMESTER			
17	Engineering Mathematics-III	CLO301.1	To express the given function in a series containing cosine and sinc terms.
		CLO301.2	To determine the solution of PDE with boundary conditions by Fourier Transform and Z Transform
		CLO301.3	To solve algebraic and transcendental equations by various numerical techniques.
		CLO301.4	To determine the solution of an unknown function without the actual integration.
		CLO301.5	To determine the maximum or minimum value of functions represented in the form integrals by Calculus of variations.
18	Analog Digital Electronics	CLO302.1	Design and analyze application of analog circuits using photo devices, timer IC, power supply and regulator IC and op-amp.
		CLO302.2	Explain the basic principles of A/D and D/A conversion circuits and develop the same
		CLO302.3	Simplify digital circuits using Karnaugh Map, and Quine-McClusky Methods
		CLO302.4	Explain Gates and flip flops and make us in designing different data processing circuits, registers and counters and compare the types.
		CLO302.5	Develop simple HDL programs
19	Data Structures And Applications	CLO303.1	Use different types of data structures, operations and algorithms
		CLO303.2	Apply searching and sorting operations on files
		CLO303.3	Use stack, Queue, Lists, Trees and Graphs in problem solving
		CLO303.4	Implement all data structures in a high-level language for problem solving.
20	Computer Organization	CLO304.1	Explain the basic sub systems of a computer, their organization, structure and operation.
		CLO304.2	Illustrate the concept of programs as sequences of machine instructions.
		CLO304.3	Demonstrate different ways of communicating with I/O devices and standard I/O interfaces.
		CLO304.4	Describe memory hierarchy and concept of virtual memory.
		CLO304.5	Describe arithmetic and logical operations with integer and floating-point operands.
		CLO304.6	Illustrate organization of a simple processor, pipelined processor and other computing systems.
21	Software Engineering	CLO305.1	Design a software system, component, or process to meet desired needs within realistic constraints.
		CLO305.2	Assess professional and ethical responsibility.
		CLO305.3	Function on multi-disciplinary teams.
		CLO305.4	Use the techniques, skills, and modern engineering tools necessary for engineering practice.
		CLO305.5	Analyze, design, implement, verify, validate, apply and maintain software systems or parts of software systems.
22	Discrete Mathematical Structures	CLO306.1	Verify the correctness of an argument using propositional and predicate logic and truth tables.
		CLO306.2	Demonstrate the ability to solve problems using counting techniques and combinatorics in the context of discrete probability..
		CLO306.3	Solve problems involving recurrence relations and generating functions.
		CLO306.4	Perform operations on discrete structures such as sets, functions, relations, and sequences
		CLO306.5	Construct proofs using direct proof, proof by contraposition, proof by contradiction, proof by cases, and mathematical induction.
23	Analog Digital Electronics Lab	CLO307.1	• Use appropriate design equations / methods to design the given circuit.



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		CLO307.2	• Examine and verify the design of both analog and digital circuits using simulators.
		CLO307.3	Make use of electronic components, ICs, instruments and tools for design and testing of circuits for the given the appropriate inputs
		CLO307.4	Compile a laboratory journal which includes; aim, tool/instruments/software/components used, design equations used and designs, schematics, program listing, procedure followed, relevant theory, results as graphs and tables, interpreting and concluding the findings.
24	Data Structures Lab	CLO308.1	Analyze and Compare various linear and non-linear data structures
		CLO308.2	Code, debug and demonstrate the working nature of different types of data structures and their applications
		CLO308.3	Implement, analyze and evaluate the searching and sorting algorithms
		CLO308.4	Choose the appropriate data structure for solving real world problems
25	Samskrutika Kannada	CLO309.1	ಕನ್ನಡ ಭಾಷೆ, ಸಾಹಿತ್ಯ ಮತ್ತು ಕನ್ನಡದ ಸಂಸ್ಕೃತಿಯ ಪರಿಚಯವಾಗುತ್ತದೆ.
		CLO309.2	ಕನ್ನಡ ಸಾಹಿತ್ಯದ ಆಧುನಿಕ ಪೂರ್ವ ಮತ್ತು ಆಧುನಿಕ ಕಾವ್ಯಗಳು ಮತ್ತು ಸಂಸ್ಕೃತಿಯ ಬಗ್ಗೆ ಆಸಕ್ತಿ ಮೂಡುತ್ತದೆ.
		CLO309.3	ತಾರ್ಕಿಕ ವ್ಯಕ್ತಿಗಳ ಪರಿಚಯವಾಗುತ್ತದೆ.
		CLO309.4	ಕನ್ನಡ ಭಾಷಾಭಾಸ, ಸಾಮಾನ್ಯ ಕನ್ನಡ ಹಾಗೂ ಆಡಳಿತ ಕನ್ನಡದ ಪದಗಳ ಪರಿಚಯವಾಗುತ್ತದೆ.
4TH SEMESTER			
26	Engineering Mathematics-IV	CLO401.1	To solve higher order differential equation by various numerical techniques.
		CLO401.2	To solve the ordinary and partial differential equation by using special functions.
		CLO401.3	To determine the analyticity, potential fields residues and poles of complex potentials in field theory.
		CLO401.4	To determine the probability and distribution of the given statistical data..
		CLO401.5	To understand statistical inference based on sampling distribution
27	Design & Analysis Of Algorithms	CLO402.1	Understand the fundamental strategies and design techniques in Algorithms
		CLO402.2	Describe computational solution to well known problems like searching, sorting etc.
		CLO402.3	Estimate the computational complexity of different algorithms.
		CLO402.4	Devise an algorithm using appropriate design strategies for problem solving.
28	Operating Systems	CLO403.1	Demonstrate need for OS and different types of OS
		CLO403.2	Apply suitable techniques for management of different resources
		CLO403.3	Use processor,Memory,storage and file system commands
		CLO403.4	Realize the different concepts of OS in platform of usage through case studies.
29	Microprocessors & Microcontrollers	CLO404.1	Describe the architectural features and instructions of ARM microcontroller
		CLO404.2	Apply the knowledge gained for Programming ARM for different applications.
		CLO404.3	Interface external devices and I/O with ARM microcontroller.
		CLO404.4	Interpret the basic hardware components and their selection method based on the characteristics and attributes of an embedded system.
		CLO404.5	Develop the hardware /software co-design and firmware design approaches.
		CLO404.6	Demonstrate the need of real time operating system for embedded system applications
30	Object Oriented Concepts	CLO405.1	Learn fundamental features of object oriented language and JAVA
		CLO405.2	Set up Java JDK environment to create, debug and run simple Java programs.
		CLO405.3	Introduce event driven Graphical User Interface (GUI) programming using applets and swings



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31	Data Communication	CLO406.1	Comprehend the transmission technique of digital data between two or more computers and a computer network that allows computers to exchange data.
		CLO406.2	Explain with the basics of data communication and various types of computer networks.
		CLO406.4	Demonstrate Medium Access Control protocols for reliable and noisy channels.
		CLO406.5	Expose wireless and wired LANs along with IP version.
32	Design & Analysis Of Algorithms Lab	CLO407.1	Design algorithms using appropriate design techniques (brute-force, greedy, dynamic programming, etc.)
		CLO407.2	Implement a variety of algorithms such as sorting, graph related, combinatorial, etc., in a high level language.
		CLO407.3	Analyze and compare the performance of algorithms using language features.
		CLO407.4	Apply and implement learned algorithm design techniques and data structures to solve real-world problems.
33	Microprocessors & Microcontrollers Lab	CLO408.1	Develop and test program using ARM7TDMI/LPC2148
		CLO408.2	Conduct the following experiments on an ARM7TDMI/LPC2148 evaluation board using evaluation version of Embedded 'C' & Keil Uvision-4 tool/compiler.
34	Constitution Of India, Professional Ethics And Cyber Law	CLO409.1	Have constitutional knowledge and legal literacy.
		CLO409.2	Understand Engineering and Professional ethics and responsibilities of Engineers.
		CLO409.3	Understand the cybercrimes and cyber laws for cyber safety measures.
5TH SEMESTER			
35	Management & Entrepreneurship for IT Industry	CLO501.1	Define management, organization, entrepreneur, planning, staffing, ERP and outline their importance in entrepreneurship
		CLO501.2	Utilize the resources available effectively through ERP
		CLO501.3	Make use of IPRs and institutional support in entrepreneurship
36	Computer Networks	CLO502.1	Explain principles of application layer protocols
		CLO502.2	Recognize transport layer services and infer UDP and TCP protocols
		CLO502.3	Classify routers, IP and Routing Algorithms in network layer
		CLO502.4	Understand the Wireless and Mobile Networks covering IEEE 802.11 Standard
		CLO502.5	Describe Multimedia Networking and Network Management
37	Database Management System	CLO503.1	Identify, analyze and define database objects, enforce integrity constraints on a database using RDBMS.
		CLO503.2	Use Structured Query Language (SQL) for database manipulation.
		CLO503.3	Design and build simple database systems
		CLO503.4	Develop application to interact with databases.
38	Automata theory and Computability	CLO504.1	Acquire fundamental understanding of the core concepts in automata theory and Theory of Computation
		CLO504.2	Learn how to translate between different models of Computation (e.g., Deterministic and Non-deterministic and Software models).
		CLO504.3	Design Grammars and Automata (recognizers) for different language classes and become knowledgeable about restricted models of Computation (Regular, Context Free) and their relative powers
		CLO504.4	Develop skills in formal reasoning and reduction of a problem to a formal model, with an emphasis on semantic precision and conciseness
		CLO504.5	Classify a problem with respect to different models of Computation
39	Application Development	CLO505.1	Demonstrate proficiency in handling of loops and creation of functions.
		CLO505.2	Identify the methods to create and manipulate lists, tuples and dictionaries.



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	using Python	CLO505.3	Discover the commonly used operations involving regular expressions and file system.
		CLO505.4	Interpret the concepts of Object-Oriented Programming as used in Python.
		CLO505.5	Determine the need for scraping websites and working with CSV, JSON and other file
40	Unix Programming	CLO505.2.1	Explain Unix Architecture, File system and use of Basic Commands
		CLO505.2.2	Illustrate Shell Programming and to write Shell Scripts
		CLO505.2.3	Categorize, compare and make use of Unix System Calls
		CLO505.2.4	Build an application/service over a Unix system.
41	Computer Networks Lab	CLO507.1	Analyze and Compare various networking protocols.
		CLO507.2	Demonstrate the working of different concepts of networking.
		CLO507.3	Implement, analyze and evaluate networking protocols in NS2 / NS3 and JAVA programming language
42	DBMS With Mini Project Lab	CLO508.1	Create, Update and query on the database.
		CLO508.2	Demonstrate the working of different concepts of DBMS
		CLO508.3	Implement, analyze and evaluate the project developed for an application
43	Environmental Studies	CLO509.1	Understand the principles of ecology and environmental issues that apply to air, land, and water issues on a global scale,
		CLO509.2	Develop critical thinking and/or observation skills, and apply them to the analysis of a problem or question related to the environment.
		CLO509.3	Demonstrate ecology knowledge of a complex relationship between biotic and a biotic components.
		CLO509.4	Apply their ecological knowledge to illustrate and graph a problem and describe the realities that managers face when dealing with complex issues.
6TH SEMESTER			
44	System Software and Compiler Design	CLO601.1	Explain system software such as assemblers, loaders, linkers
		CLO601.2	Design and develop lexical analyzers, parsers and code generators
		CLO601.3	Understand cyber security and need cyber Law.
45	Computer Graphics and Visualization	CLO602.1	Design and implement algorithms for 2D graphics primitives and attributes.
		CLO602.2	Illustrate Geometric transformations on both 2D and 3D objects
		CLO602.3	Apply concepts of clipping and visible surface detection in 2D and 3D viewing, and Illumination Models.
		CLO602.4	Decide suitable hardware and software for developing graphics packages using OpenGL.
46	Web Technology and its applications	CLO603.1	Define HTML and CSS syntax and semantics to build web pages.
		CLO603.2	Understand the concepts of Construct , visually format tables and forms using HTML using CSS
		CLO603.3	Develop Client-Side Scripts using JavaScript and Server-Side Scripts using PHP to generate and display the contents dynamically.
		CLO603.4	List the principles of object oriented development using PHP
		CLO603.5	Illustrate JavaScript frameworks like jQuery and Backbone which facilitates developer to focus on core features
47	Data Mining and Data Warehousing	CLO604.1	Identify data mining problems and implement the data waerchouse
		CLO604.2	Write association rules for a given data pattern
		CLO604.3	Choose between classification and clustering solutions



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48	Cloud Computing and its Applications	CLO643.1	Explain cloud computing, virtualization and classify services of cloud computing
		CLO643.2	Illustrate architecture and programming in cloud
		CLO643.3	Describe the platforms for development of cloud applications and List the application of cloud.
49	REMOTE SENSING AND GIS	CLO605.1	Collect data and delineate various elements from the satellite imagery using their spectral signature.
		CLO605.2	Analyze different features of ground information to create raster or vector data.
		CLO605.3	Perform digital classification and create different thematic maps for solving specific problems.
		CLO605.4	Make decision based on the gis analysis on thematic maps.
50	Non Conventional Energy Sources	CLO606.1	The student will be able to provide detailed information of the present energy scenario and available NCES
		CLO606.2	The student will be able to provide insight knowledge in basics of solar radiation geometry and various measurement techniques available.
		CLO606.3	The student will be to explain solar thermal devices, PV conversion and their performance analysis and wind energy
		CLO606.4	The student will be able explain the conceptual knowledge about the various energy conversion methods such as wind, Tidal, OTEC, Geothermal, Biomass and Hydrogen energy and their impact on environment and sustainability
51	Renewable Energy Sources	CLO607.1	To have knowledge of energy demand, power generation by conventional and non conventional methods and data.
		CLO607.2	To have knowledge of methods and components of power generation by solar ,wind. ,hydrogen ,geo-thermal and solid waste management
		CLO607.3	To have knowledge of methods and components of power generation by bio mass,bio gas
		CLO607.4	To have knowledge of methods and components of power generation by tidal,sea wave,ocean thermal energy conversion,
52	System Software and Operating System Lab	CLO608.1	Implement and demonstrate Lexer's and Parser's.
		CLO608.2	Evaluate different algorithms required for management, scheduling, allocation and communication used in operating system..
53	Computer Graphics Lab with Miniproject	CLO609.1	Apply the concepts of computer graphics to algorithms using OpenGL Graphics Primitives and attributes.
		CLO609.2	Implementation of line drawing and clipping algorithms using OpenGL functions
		CLO609.3	Design and implementation of algorithms Geometric transformations on both 2D and 3D objects
		CLO609.4	Animate real world problems using OpenGL.
54	MOBILE APPLICATION DEVELOPMENT	CLO610.1	Create, test and debug Android application by setting up Android development environment.
		CLO610.2	Implement adaptive, responsive user interfaces that work across a wide range of devices.
		CLO610.3	Infer long running tasks and background work in Android applications.
		CLO610.4	Demonstrate methods in storing, sharing and retrieving data in Android applications.
		CLO610.5	Infer the role of permissions and security for Android applications.
7TH SEMESTER			
55	AI & Machine	CLO701.1	Appraise the theory of Artificial intelligence and Machine Learning.



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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
COs STATEMENTS FOR THE SCHEME 2018 (BATCH:2018 – 2022)

	Learning	CLO701.2	Illustrate the working of AI and ML Algorithms.
		CLO701.3	Demonstrate the applications of AI and ML. <i>CO</i>
56	Big Data and Analytics	CLO702.1	Understand fundamentals of Big Data analytics.
		CLO702.2	Investigate Hadoop framework and Hadoop Distributed File system.
		CLO702.3	Illustrate the concepts of NoSQL using MongoDB and Cassandra for Big Data.
		CLO702.4	Demonstrate the MapReduce programming model to process the big data along with Hadoop tools.
		CLO702.5	Use Machine Learning algorithms for real world big data. Analyze web contents and Social Networks to provide analytics with relevant visualization tools.
		57	Cryptography
CLO703.2	Explain Cryptography algorithms		
CLO703.3	Illustrate Public and Private key cryptography		
CLO703.4	Explain Key management, distribution and certification		
CLO703.5	Explain authentication protocols		
CLO703.6	Tell about Ipsec		
58	User Interface design	CLO704.1	Design the User Interface, design, menu creation, windows creation and connection between menus and windows.
		CLO704.2	Menu creation, windows creation.
		CLO704.3	Connection between menus and windows
59	Environmental Protection Management	CLO705.1	Appreciate the elements of Corporate Environmental Management systems complying to international environmental management system standards.
		CLO705.2	Lead pollution prevention assessment team and implement waste minimization options.
		CLO705.3	Develop, Implement, maintain and Audit Environmental Management systems for Organizations.
60	Energy Conservation and Audit	CLO706.1	Analyze about energy scenario nationwide and worldwide , also outline Energy Conservation Act and its features
		CLO706.2	Discuss load management techniques and energy efficiency.
		CLO706.3	Understand the need of energy audit and energy audit methodology.
		CLO706.4	Understand various pillars of electricity market design.
		CLO706.5	Conduct energy audit of electrical systems and buildings and understanding of demand side management and energy conservation.
61	Machine Learning LAB	CLO707.1	Implement and demonstrate AI and ML algorithms.
		CLO707.2	Evaluate different algorithms.
62	Project work phase- I	CLO708.1	To enable students to formulate problem by providing a glimpse of real-world problems and challenges that need computer based solution.
		CLO708.2	To enable students to analyse the problem with vast literature and engineering knowledge.
		CLO708.3	To enable students to design and produce outcome by using all concepts of computer science engineering.
		CLO708.4	To enable to implement the system, develop report and present the findings of the study conducted in the preferred domain.
8TH SEMESTER			
63	Internet of Things and Applications	CLO801.1	Interpret the impact and challenges posed by IoT networks leading to new architectural models.
		CLO801.2	Compare and contrast the deployment of smart objects and the technologies to connect them to network.



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		CLO801.3	Appraise the role of IoT protocols for efficient network communication.
		CLO801.4	Elaborate the need for Data Analytics and Security in IoT.
		CLO801.5	Illustrate different sensor technologies for sensing real world entities and identify the applications of IoT in Industry.
64	Storage Area Networks	CLO802.1	Identify key challenges in managing information and analyze different storage networking technologies and virtualization
		CLO802.2	Explain components and the implementation of NAS
		CLO802.3	Describe CAS architecture and types of archives and forms of virtualization
		CLO802.4	Illustrate the storage infrastructure and management activities
65	Project work phase II	CLO805.1	To enable students to formulate problem by providing a glimpse of real-world problems and challenges that need computer based solution.
		CLO805.2	To enable students to analyse the problem with vast literature and engineering knowledge.
		CLO805.3	To enable students to design and produce outcome by using all concepts of computer science engineering.
		CLO805.4	To enable to implement the system, develop report and present the findings of the study conducted in the preferred domain.
66	Seminar	CLO806.1	To study research papers for understanding of a new field, to summarise and review them.
		CLO806.2	To identify promising new directions of various cutting edge technologies
		CLO806.3	To impart skills in preparing detailed report describing the project and results
		CLO806.4	To effectively communicate by making an oral presentation before an evaluation committee
67	Internship	CLO807.1	To understand the theory concepts and implement the same in Industry Environment


HOD