



Department of Computer Science and Engineering
KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE
 Warangal-506 015

B.Tech (CSE) Course Outcomes of Autonomous Syllabus
KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE: WARANGAL
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Date: 28.10.2019

B.Tech – I-Year I-Semester	
Subject Code/Name	Course Outcomes
U18MH101 ENGINEERING MATHEMATICS- I	After completion of this course, the students will be able to,
	CO1 : test the convergence/divergence of a given series t ; understand the basic concepts of limit, continuity, differentiability of a function, and will be able to expand a given function in series .
	CO2 : apply the technique of differentiation under integral sign to solve an integral and find maxima & minima of functions of two/several variables.
	CO3 : solve a given differential equations of first order with boundary conditions and understand the application of differential equations of first order.
	CO4 : solve a given higher order linear differential equation with constant coefficients and Understand few engineering applications.
U18CS102 PROGRAMMING FOR PROBLEM SOLVING USING C	CO1: draw the block diagram of a computer, enumerate programming development steps, design an algorithm and flow chart for a given application
	CO2: apply logical skills for problem solving using control structures and arrays
	CO3: develop string programs and modular programming with functions
	CO4: implement structures, unions, pointers and files in C programming
U18PH103 / U18PH203 ENGINEERING PHYSICS	CO1: determine the time period and frequency of SHM oscillatory system and know the principles and applications of ultrasonics in different fields
	CO2: analyse and apply the concepts of interference, diffraction and polarization phenomena in accurate determination of wavelengths, thicknesses, narrow slit widths, optical activity, etc
	CO3: describe the characteristics and working of lasers, optical fibers and their applications in various fields
	CO4: classify and enumerate the properties of magnetic, superconducting and nano materials and know their engineering applications
U18MH104 / U18MH204 ENGLISH FOR COMMUNICATION	CO1 : acquire grammar awareness and use error-free language in speech and writing
	CO2 : use appropriate vocabulary to describe various situations
	CO3 : implement a particular reading strategy to comprehend the text
	CO4 : communicate impressively and effectively
U18ME104 / U18ME204 ENGINEERING	After completion of the course, the student will be able to, CO1: draw projections of points and straight lines-I.

DRAWING	CO2: draw projections straight lines-II and planes
	CO3: draw solids and sections of solids
	CO4: draw projections of solids, orthographic and isometric views using AutoCAD.
U18EE105 / U18EE205 BASIC ELECTRICAL ENGINEERING	CO1: determine voltage, current & power in electrical circuits using mesh & nodal analysis
	CO2: apply suitable DC network theorems to analyze T & π networks
	CO3: find current, voltage & power in 1- ϕ & 3- ϕ AC circuits
	CO4: explain construction, working principle & applications of electrical machines; electrical earthing, fuses, lighting sources, MCB & batteries
U18CE105 / U18CE205 ENGINEERING MECHANICS	CO1: understand the physical action of forces on the bodies through free body diagrams and analyse the forces using principles of force
	CO2: determine the axial forces in members of pin jointed structures subjected to various types of loadings
	CO3: understand the technical importance of geometrical shapes using centroid and moment of inertia concepts
	CO4: understand equilibrium condition of particles in dynamic condition and can analyse the problems using various applications such as impulse-momentum principle and work energy
U18CS107 PROGRAMMING FOR PROBLEM SOLVING USING C LAB	CO1: handle basic electrical equipments
	CO2: understand the concepts of network elements and theorems
	CO3: understand fundamental concepts of 1-phase and 3-phase AC circuits
	CO4: determine illumination of various lighting sources

B.Tech – I-Year II-Semester	
Subject Code/Name	Co's
U18MH201 ENGINEERING MATHEMATICS- II	CO1: compute inverse of a matrix using elementary transformations, compute rank of a matrix, and to solve a system of linear algebraic equations, to compute characteristic values, characteristic vectors of a given square matrix and reduce a given quadratic form to canonical form
	CO2 : find double integral and triple integral and apply them to find moment of inertia, centre of gravity of plane lamina ; understand Beta and Gama functions and their relations and evaluate an improper integral in terms of Beta and Gamma functions
	CO3 : understand the concept of a vector function and vector differentiation and will be able to find the characteristics of a space curve such as tangent, normal, binormal, curvature and torsion ; understand the concept of gradient , divergence and curl of a vector point function and will be able to apply them to find angle between two surfaces, and scalar potential
	CO4 : find line, surface and volume integrals of vector valued functions and understand Green's theorem, Stokes theorem and Gauss theorem.
U18CS202 DATA STRUCTURES THROUGH C	CO1: implement programs using static & dynamic arrays
	CO2: apply the linear data structures with stacks and queues
	CO3: arrange the data with the help of various sorting techniques and linked lists
	CO4: organize the data using non-linear data structures with trees and graphs
U18EE106 / U18EE206 BASIC ELECTRICAL	After completion of the course, the students will be able to CO1: handle basic electrical equipments

ENGINEERING LABORATORY	CO2: understand the concepts of network elements and theorems
	CO3: understand fundamental concepts of 1-phase and 3-phase AC circuits
	CO4: determine illumination of various lighting sources
U18PH108 / U18PH208 ENGINEERING PHYSICS LABORATORY	CO1: measure precisely the values of elastic properties, moments of inertia, acceleration due to gravity, etc
	CO2: make precise measurements of wavelengths, diameter of thin wires, limit of resolution and optical rotation from light phenomena (Interference, diffraction and polarization)
	CO3: measure wavelengths, slit widths from diffraction patterns using laser light
	CO4: measure numerical aperture, acceptance angle and fiber losses of optical fibers
U18CH108 / U18CH208 ENGINEERING CHEMISTRY LABORATORY	CO1: determine water quality parameters - alkalinity, hardness
	CO2: estimate metals from their ores
	CO3: handle analytical instruments for chemical analysis
	CO4: measure saponification / acid value of an oil
U18CS207 DATA STRUCTURES THROUGH C LABORATORY	CO1: implement the fundamental data structures using C-language
	CO2: develop programs using linear data structures (stacks, queues)
	CO3: develop programs arranging the data using various sorting techniques
	CO4: develop program using linked representation
U18ME109 / U18ME209	CO1: prepare various joints in carpentry trade
	CO2: prepare a mould cavity using single and two piece pattern
	CO3: perform various joints in fitting and plumbing trade
	CO4: weld metals using arc welding, gas welding and soldering
U18CH109 / U18CH209 ENVIRONMENTAL STUDIES	CO1 : investigate any environmental issue using an interdisciplinary framework
	CO2 : formulate an action plan for sustainable alternatives and conserving biodiversity that integrates science, humanist, social and economic perspective
	CO3 : identify and explain the complexity of issues and processes which contribute to an environmental problem
	CO4 : participate effectively in analysis and problem-solving through knowledge in environmental legislations
U18EA110 / U18EA210 EAA: SPORTS/YOGA/NSS	CO1: develop his/her personally through community service rendered
	CO2 : apply their education to find solutions to individual and community problems
	CO3 : acquire capacity to meet emergencies and natural disasters
	CO4 : acquire a democratic attitude, leadership qualities and practice national integration

B.Tech – II-Year I-Semester	
Subject Code/Name	Course Ourcomes
U18MH301 ENGINEERING MATHEMATICS- III	CO 1 : find the Laplace transform of a given function and apply Laplace transforms to solve and certain differential equations whose solutions cannot be computed using classical methods.
	CO2 :describe a given function as Fourier series in an interval and understand its importance in engineering.
	CO3 :understand the concept of a function of complex variable and verify whether a function is analytic or not, construct analytic function when real/imaginary part of the function is known; find velocity potential and stream function of a fluid flow using complex analytical methods.
	CO4 :represent a given function in Taylor’s and Laurent’s series and evaluate certain real integrals using integral theorems.
U18MH302 PROFESSIONAL ENGLISH	CO1 : Different types of questions related to reading comprehension
	CO2 : identify grammatical errors in the given sentences and correct them
	CO3 : select correct synonyms/antonyms/phrasal verbs and complete sentences with suitable words or phrases
	CO4 : keep the given jumbled sentences in proper sequence to make a coherent paragraph
U18CS303 OBJECT ORIENTED PROGRAMMING THROUGH JAVA	CO1 : distinguish various programming paradigms and implement java fundamental programs.
	CO2 : implement classes, constructors, and strings.
	CO3 : apply reusability concepts like inheritance, dynamic method dispatch, and interfaces.
	CO4 : implement packages, apply streams (I/O), exception handling, and multithreading.
U18MH304 DISCRETE MATHEMATICS	CO1 : explain the basic concepts of sets and relations and their applications to lattice problems, to determine all the possible paths available in directed paths
	CO2 : analyze the different types of logic in order to establish knowledge based systems, to
	CO3 : solve different type of enumeration problemsand apply to real life problems .
	CO4 : solve different problems like Koenig’s Berge seven bridges, using Euler graphs and find the chromatic number of the different graphs.
U18CS305 COMPUTER ARCHITECTURE AND ORGANIZATION	CO1 : identify functional units of a computer, explain addressing modes and instruction formats.
	CO2 : write control sequence for execution of an instruction, explain hardwired and microprogrammed control and perform arithmetic operations with signed and unsigned integers.
	CO3 : design memory organization and explain data transfer among memory, processor & I/O .
	CO4 : analyze different modes of data transfer and explain the concepts of parallel processing, pipelining for high performance computing systems.
U18CS306 ADVANCED DATA STRUCTURES	CO1 : implement programs using circular single linked list and double linked list.
	CO2 : represent the data with non linear data structure using binary trees, binary search trees and AVL trees.

	CO3: analyze balanced search trees such as B-trees, B+-trees and Splay trees.
	CO4: organize and retrieve the data using minimum spanning trees, searching, sorting and hashing techniques
U18EI309 DIGITAL ELECTRONICS	CO1: apply various minimization techniques to obtain minimal SOP/POS forms of switching functions
	CO2: design different combinational circuits to implement logic functions
	CO3: explain the operation of flip flops and design sequential circuits like counters, shift registers
	CO4: minimize completely and incompletely specified state machines using partition and merger graph/table methods
U18CS310 OBJECT ORIENTED PROGRAMMING THROUGH JAVA LABORATORY	CO1: implement java fundamental programs.
	CO2: implement classes, constructors, and strings.
	CO3: apply reusability concepts like inheritance, dynamic method dispatch, and interfaces.
	CO4: implement packages, apply streams (I/O), exception handling, and multithreading.
U18CS311 ADVANCED DATA STRUCTURES LABORATORY	CO1: implement Multistack and different linked lists.
	CO2: perform operations on binary search trees and AVL trees.
	CO3: implement various operations on B-trees and graph traversal techniques.
	CO4: apply the different methods on graph traversal, searching and sorting.
U18MH315 ESSENCE OF INDIAN TRADITIONAL KNOWLEDGE	CO1: summarize the basic structure of Vedas, Upavedas, Vedanga, Upanga
	CO2: explain Vedas as principal source of knowledge for scientific inventions
	CO3: describe different yogasanas, breathing techniques, chakras, meditation and their benefits
	CO4: discuss the benefits of yoga as an effective tool for management of human crisis
U18OE401A APPLICABLE MATHEMATICS	CO1: solve wave equation, heat conduction equation and Laplace equation using Fourier series
	CO2: find correlation regression coefficients, fit curves using method of least squares for given data and apply theoretical probability distributions in decision making
	CO3: estimate value of a function by applying interpolation formulae
	CO4: apply numerical methods to solve simultaneous algebraic equations, differential equations, find roots of algebraic and transcendental equations
U18OE401B BASIC ELECTRONICS ENGINEERING	CO1: Analyze the behavior of semiconductor devices
	CO2: Design half wave and full wave rectifier circuits with filters
	CO 3: Characterize BJT configurations with input output characteristics and biasing techniques
	CO 4: Acquire knowledge of new emerging areas of science and technology in differentiating semiconductor devices..
U18OE401C ELEMENTS OF MECHANICAL ENGINEERING	CO1: explain mechanical properties of an engineering materials and learn the steps in design methodology.
	CO2: describe the principles of manufacturing processes
	CO3: apply first law of thermodynamics to various processes to calculate work and heat for a closed system.
	CO4: define second law of thermodynamics and demonstrate the working principle of IC engines.
U18OE401D	CO1: explain about working principle of measurement system, PMMC based meters and applications of DC & AC bridge circuits

FUNDAMENTALS OF MEASUREMENTS & INSTRUMENTATION	CO2: describe the principle of operation of Q-meter, DVM, DMM, CRO, DSO and display devices
	CO3: elaborate on the working principle of resistive, inductive, capacitive and piezoelectric transducers and their applications
	CO4: explain about seismic transducers, sound level meter, level transducer, flow meters and block diagram of data acquisition system
U18OE401E FUNDAMENTALS OF COMPUTER NETWORKS	CO1: describe various network topologies, architecture and techniques for data transmission modes
	CO2: outline various design issues in data link layer and develop protocols to handle data link layer operation
	CO3: describe various design issues and develop protocols for network Layer.
	CO4: explain various design issues , protocols of transport layer & application layer services
U18OE401F RENEWABLE ENERGY SOURCES	CO1: compare conventional and non-conventional energy resources; explain the working principle of solar energy harnessing and its applications
	CO2: explain the working principles of wind energy, geothermal energy and MHD power generation systems
	CO3: describe the harnessing of electric power from oceans and biomass
	CO4: explain the principle of operation of fuel cells and different types of energy storage systems
U18TP402 SOFT AND INTERPERSONAL SKILLS	CO1: introspect to convert strengths into opportunities, identify weaknesses, bypass threats
	CO2: present views on various issues confidently in a group
	CO3: make effective PPT presentations, synthesize videos
	CO4: prepare a professional resume, communicate effectively to attain better opportunities
U18OE403A Object Oriented Programming	CO1: demonstrate object oriented concepts and java programming features.
	CO2: solve computing problems using object orientation and inheritance concepts.
	CO3: use polymorphism, interfaces and Packages for effective object oriented programming
	CO4: handle Exceptions and I/O operations in application development.
U18OE403B FLUID MECHANICS AND HYDRAULIC MACHINES	CO1: summarize fluid properties using fundamental laws of fluid statics.
	CO2: analyse fluid flows using Bernoulli's equation and model laws.
	CO3: estimate losses in pipes and characterize hydraulic turbines.
	CO4: discuss the working principle and characteristics of pumps.
U18OE403C MECHATRONICS	CO1: apply the mechatronics approach and select suitable sensors and transducers for a given application.
	CO2: explain working principles of mechanical, hydraulic, pneumatic and electrical actuators and their applications.
	CO3: develop basic building blocks for mechanical, electrical, fluid and thermal systems and build mathematical models and analyze.
	CO4: explain various system transfer functions and select an appropriate closed loop controller for a given application
U18OE403D WEB PROGRAMMING	CO1: create static web pages using HTML Tags, CSS properties and Java scripts
	CO2: create dynamic web pages using java server page concepts.
	CO3: develop web server side applications using PHP concepts
	CO4: develop enterprise databases for web-based applications using PHP and

	MySQL.
U18OE403E MICROPROCESSORS	CO1: describe the architecture of 8086 microprocessor and explain instructions with suitable examples
	CO2: write Assembly Language Programs (ALPs) to perform a given task
	CO3: design 8086 microprocessor based system for given specifications with memory mapping
	CO4: explain serial communication modes and discuss its standards
U18OE403F STRENGTH OF MATERIALS	CO1: estimate various types of stresses and strains
	CO2: construct Mohr's circle, shear force and bending moment diagrams for determinate beams
	CO3: determine the bending and shearing stresses for beams subjected to pure bending
	CO4: analyze stresses in thin cylinders, circular shafts and springs by theory of pure torsion
U18CS404 THEORY OF COMPUTATION	CO1: write a formal notation for strings, languages and finite automata.
	CO2: design context free grammars to generate strings of context free language.
	CO3: determine equivalence of languages accepted by push down automata and languages generated by context free grammars.
	CO4: distinguish between computability and non computability, decidability and undecidability in Turing machines
U18CS405 DATABASE MANAGEMENT SYSTEMS	CO1: design the database management system effectively
	CO2: design the databases, which includes Enhanced Entity Relationship model
	CO3: outline the database by using normalization and query optimization techniques to avoid redundancy and maintain the performance of database.
	CO4: manage multi-level security, correctness of data and control over access on database
U18CS406 OPERATING SYSTEMS	CO1: demonstrate the architecture of an operating system, process concepts and system calls
	CO2: implement the CPU scheduling and process synchronization algorithms
	CO3: solve the deadlock related problems and memory management issues
	CO4: explain the file, disk and system protection techniques
U18CS407 DATABASE MANAGEMENT SYSTEMS LABORATORY	CO1: evaluate SQL queries using DDL/DML/TCL/DCL commands to create and manipulate data in database by enforcing constraints
	CO2: demonstrate various database objects using SQL queries
	CO3: implement block structured programming with cursors to enable traversal over the records of the database
	CO4: implement pre-compiled stored programs, run-time errors checking, database objects collection in PL/SQL packages and high-level security using triggers
U18CS408 OPERATING SYSTEMS LABORATORY	CO1: recognize the importance of various categories of UNIX commands.
	CO2: apply shell programming concepts for developing applications
	CO3: implement different scheduling algorithms and compare their performance and apply the Banker's algorithm for solving the dead lock avoidance problem.
	CO4: implement different scheduling algorithms and compare their performance and apply the Banker's algorithm for solving the dead lock

	avoidance problem.
U18OE411A OBJECT ORIENTED PROGRAMMING LABORATORY	CO1: implement OOP concepts using Java
	CO2: use the concepts like inheritance, polymorphism, packages and interfaces in application development
	CO3: handle runtime exceptions in object oriented programming
	CO4: build effective I/O interfaces for software applications
U18OE411B FLUID MECHANICS AND HYDRAULIC MACHINES LABORATORY	CO1: determine the hydraulic coefficient for various flow measuring devices
	CO2: apply Bernoulli's equation in estimating head loss in pipes
	CO3: apply the principles of impact of jet on different vanes
	CO4: demonstrate the characteristics of hydraulic machines.
U18OE411C MECHATRONICS LAB	CO1: Develop PLC program to control AC non servomotors, single acting and double acting pneumatic cylinders with different operation conditions
	CO2: Develop PLC program to control various systems.
	CO3: Integrate various mechanical and electrical systems and operate them.
	CO4: Design and simulate the hydraulic and pneumatic circuits.
U18OE411D WEB PROGRAMMING LABORATORY	CO1: create the static web pages using HTML Tags and CSS and JavaScripts
	CO2: design dynamic web page for web applications using JSP
	CO3: develop server side scripts for web base applications using PHP
	CO4: design web applications for effective storage and retrieval of data in MySQL using PHP.
U18OE411E MICROPROCESSORS LABORATORY	CO1: write and execute assembly language programs for given tasks on 8086 microprocessor kit
	CO2: implement code conversions and bit manipulations programs in 8086 using MASM
	CO3: write waveform generation code using DAC modules
	CO4: interface stepper motor, keyboard, memory etc. with 8086 microprocessor
U18OE411F STRENGTH OF MATERIALS LABORATORY	CO1: correlate theory with the testing of engineering materials for quality assessment.
	CO2: evaluate the mechanical properties of civil engineering materials.
	CO3: appraise the behavior of civil engineering materials when tested under loads.
	CO4: realize the specifications recommended by codes to civil engineering materials.
U18CH416 ENVIRONMENTAL STUDIES	CO1: investigate any environmental issue using an interdisciplinary framework
	CO2: formulate an action plan for sustainable alternatives and conserving biodiversity that integrates science, humanist, social and economic perspective
	CO3: identify and explain the complexity of issues and processes which contribute to an environmental problem
	CO4: participate effectively in analysis and problem-solving through knowledge in environmental legislations

Head of the Department