Estd: 2008

Sri Kavitha Educational Society's

KHAMMAM INSTITUTE OF TECHNOLOGY & SCIENCES

(Affiliated to JNTUH & Approved by AICTE, New Delhi)

Ponnekal (Village), Khammam (Rural), Khammam (Dist) -507170

Phone: 08742 – 285399, 9908567792

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Curriculum: R-18 (Jawaharlal Nehru Technological university, Hyderabad)

Programme and course outcomes for all Programmes offered by the Department These are Circulated through:

1. **Course Handouts.**
2. **Curriculum / Syllabus**
3. **Course File**
4. **At regular intervals during classwork (whenever necessary)**

I Year / I Semester (2018 - 2022 Batch) AY 2018-19		
Course Code	**Course Title**	**Credits**
MA101BS	Mathematics-I	4
CH102BS	Chemistry	4
EE103ES	Basic Electrical Engineering	3
ME105ES	Engineering Workshop	2.5
EN105HS	English	2
CH106BS	Engineering Chemistry Lab	1.5
EN107HS	English Language Communication Skills Lab	1
EE108ES	Basic Electrical Engineering Lab	1
	Induction Programme	

CO CODE		COURSE OBJECTIVES
MA101BS	CO 1	Write the matrix representation of a set of linear equations and to analyse the solution of the system of equations
	CO 2	Find the Eigen values and Eigen vectors
	CO 3	Reduce the quadratic form to canonical form using orthogonal transformations.
	CO 4	Analyse the nature of sequence and series.
CH102BS	CO 1	The knowledge of atomic, molecular and electronic changes, band theory related to conductivity.
	CO 2	The required principles and concepts of electrochemistry, corrosion and in understanding the problem of water and its treatments.
	CO 3	The required skills to get clear concepts on basic spectroscopy and application to medical and other fields.

	CO 4	The knowledge of configurational and conformational analysis of molecules and reaction mechanisms.
EE103ES	CO 1	To analyze and solve electrical circuits using network laws and theorems.
	CO 2	To understand and analyze basic Electric and Magnetic circuits
	CO 3	To study the working principles of Electrical Machines
	CO 4	To introduce components of Low Voltage Electrical Installations
ME105ES	CO 1	Study and practice on machine tools and their operations
	CO 2	Practice on manufacturing of components using workshop trades including pluming,fitting, carpentry, foundry, house wiring and welding.
	CO 3	Identify and apply suitable tools for different trades of Engineering processes including drilling, material removing, measuring, chiseling.
	CO 4	Apply basic electrical engineering knowledge for house wiring practice.
EN105HS	CO 1	Use English Language effectively in spoken and written forms.
	CO 2	Comprehend the given texts and respond appropriately.
	CO 3	Communicate confidently in various contexts and different cultures.
	CO 4	Acquire basic proficiency in English including reading and listening comprehension,writing and speaking skills.
CH106BS	CO 1	Determination of parameters like hardness and chloride content in water.
	CO 2	Estimation of rate constant of a reaction from concentration – time relationships.
	CO 3	Determination of physical properties like adsorption and viscosity.
	CO 4	Calculation of Rf values of some organic molecules by TLC technique.
EN107HS	CO 1	Better understanding of nuances of English language through audio- visual experience and group activities
	CO 2	Neutralization of accent for intelligibility
	CO 3	Speaking skills with clarity and confidence which in turn enhances their employability skills
	CO 4	Students should be given practice in listening to the sounds of the language, to be able to recognize them and find the distinction between different sounds
ES	CO 1	Get an exposure to basic electrical laws.
	CO 2	Understand the response of different types of electrical circuits to different excitations.

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EE108	CO 3	Understand the measurement, calculation and relation between the basic electrical parameters
	CO 4	Understand the basic characteristics of transformers and electrical machines.

I Year / II Semester (2018 - 2022 Batch) AY 2018-19

Course Code	Course Title	Credits
MA201BS	Mathematics - II	4
AP202BS	Applied Physics	4
CS203ES	Programming for Problem Solving	4
ME204ES	Engineering Graphics	3
AP205BS	Applied Physics Lab	1.5
CS206ES	Programming for Problem Solving Lab	1.5
MC209ES	Environmental Science	0

CO CODE		COURSE OBJECTIVES
MA201BS	CO 1	Identify whether the given differential equation of first order is exact or not
	CO 2	Solve higher differential equation and apply the concept of differential equation to real world problems
	CO 3	Evaluate the multiple integrals and apply the concept to find areas, volumes, centre of mass and Gravity for cubes, sphere and rectangular parallelopiped
	CO 4	Evaluate the line, surface and volume integrals and converting them from one to another
AP202BS	CO 1	The student would be able to learn the fundamental concepts on Quantum behaviour of matter in its micro state.
	CO 2	The knowledge of fundamentals of Semiconductor physics, Optoelectronics, Lasers and fibre optics enable the students to apply to various systems like communications, solar cell, photo cells and so on.
	CO 3	Design, characterization and study of properties of material help the students to prepare new materials for various engineering applications.
	CO 4	The course also helps the students to be exposed to the phenomena of electromagnetism and also to have exposure on magnetic materials and dielectric materials.
CS203ES	CO 1	To write algorithms and to draw flowcharts for solving problems.
	CO 2	To convert the algorithms/flowcharts to C programs.
	CO 3	To code and test a given logic in C programming language.
	CO 4	To decompose a problem into functions and to develop modular reusable code.

ME204ES	CO 1	Preparing working drawings to communicate the ideas and information.
	CO 2	Read, understand and interpret engineering drawings.
	CO 3	Principles of Engineering Graphics and their Significance, Conic Sections including the Rectangular Hyperbola
	CO 4	Development of Surfaces of Right Regular Solids – Prism, Cylinder, Pyramid and Cone
AP205BS	CO 1	The student would be able to learn the fundamental concepts on Quantum behaviour of matter in its micro state.
	CO 2	The knowledge of fundamentals of Semiconductor physics, Optoelectronics, Lasers and fibre optics enable the students to apply to various systems like communications, solar cell, photo cells and so on.
	CO 3	Design, characterization and study of properties of material help the students to prepare new materials for various engineering applications.
	CO 4	The course also helps the students to be exposed to the phenomena of electromagnetism and also to have exposure on magnetic materials and dielectric materials.
CS206ES	CO 1	Formulate the algorithms for simple problems
	CO 2	Translate given algorithms to a working and correct program
	CO 3	Identify and correct logical errors encountered during execution
	CO 4	Represent and manipulate data with arrays, strings and structures
MC209ES	CO 1	Based on this course, the Engineering graduate will understand /evaluate / develop technologies
	CO 2	The basis of ecological principles and environmental regulations which in turn helps in sustainable development
	CO 3	Introduction, Definition, genetic, species and ecosystem diversity.
	CO 4	Primary and secondary pollutants, Automobile and Industrial pollution, Ambient air quality standards.

II Year / I Semester (2018 - 2022 Batch) AY 2019-20

Course Code	Course Title	Credits
CS301ES	Analog and Digital Electronics	3
CS302PC	Data Structures	4
MA303BS	Computer Oriented Statistical Methods	4
CS304PC	Computer Organization and Architecture	3
CS305PC	Object Oriented Programming using C++	2
CS306ES	Analog and Digital Electronics Lab	1

CS307PC		Data Structures Lab	1.5
CS308PC		IT Workshop Lab	1.5
CS309PC		C++ Programming Lab	1
*MC309		Gender Sensitization Lab	0
CS301ES	CO 1	Know the characteristics of various components and Understand the utilization of components.	
	CO 2	Design and analyze small signal amplifier circuits.	
	CO 3	Learn Postulates of Boolean algebra and to minimize combinational functions	
	CO 4	Design and analyze combinational and sequential circuits	
CS302PC	CO 1	Ability to select the data structures that efficiently model the information in a problem.	
	CO 2	Ability to assess efficiency trade-offs among different data structure implementations or combinations.	
	CO 3	Implement and know the application of algorithms for sorting and pattern matching.	
	CO 4	Design programs using a variety of data structures, including hash tables, binary and general tree structures, search trees, tries, heaps, graphs, and AVL-trees.	
MA303BS	CO 1	Apply the concepts of probability and distributions to some case studies	
	CO 2	Correlate the material of one unit to the material in other units	
	CO 3	Resolve the potential misconceptions and hazards in each topic of study.	
	CO 4	Sample Space, Events, Counting Sample Points, Probability of an Event, Additive Rules,Conditional Probability, Independence, and the Product Rule, Bayes' Rule.	
CS304PC	CO 1	Understand the basics of instructions sets and their impact on processor design.	
	CO 2	Demonstrate an understanding of the design of the functional units of a digital computer system.	
	CO 3	Evaluate cost performance and design trade-offs in designing and constructing a computer processor including memory.	
	CO 4	Design a pipeline for consistent execution of instructions with minimum hazards.	
5PC	CO 1	Able to develop programs with reusability	
	CO 2	Develop programs for file handling	

CS30	CO 3	Handle exceptions in programming
	CO 4	Develop applications for a range of problems using object-oriented programming techniques
CS306ES	CO 1	Know the characteristics of various components and Understand the utilization of components.
	CO 2	Design and analyze small signal amplifier circuits.
	CO 3	Postulates of Boolean algebra and to minimize combinational functions
	CO 4	Design and analyze combinational and sequential circuits
CS307PC	CO 1	Ability to develop C programs for computing and real-life applications
	CO 2	Using the basic elements like control statements, arrays, functions, pointers and strings
	CO 3	The data structures like stacks,queues and linked lists.
	CO 4	Ability to Implement searching and sorting algorithms
CS308PC	CO 1	Introduces the students to a personal computer and its basic peripherals, the process of assembling a personal computer, installation of system software like MS Windows, Linux and the required device drivers.
	CO 2	Internet & World Wide Web module introduces the different ways of hooking the PC on to the internet from home and workplace and effectively usage of the internet.
	CO 3	protecting the personal computer from getting infected with the viruses, worms and other cyber attacks would be introduced.
	CO 4	To enable the students in crafting professional word documents, excel spread sheets, power point presentations and personal web sites using the Microsoft suite of office tools and LaTeX.
CS309PC	CO 1	Ability to develop applications for a range of problems using object-oriented programming techniques
	CO 2	To illustrate the concepts of console I/O operations.
	CO 3	To use scope resolution operator. Display the various values of the same variables declared at different scope levels.
	CO 4	To create an array of pointers and Invoke functions using array objects.
	CO 1	Students will have developed a better understanding of important issues related to gender in contemporary India.

*MC309	CO 2	Students will be sensitized to basic dimensions of the biological, sociological, psychological and legal aspects of gender. This will be achieved through discussion of materials derived from research, facts, everyday life, literature and film.
	CO 3	Students will attain a finer grasp of how gender discrimination works in our society and how to counter it.
	CO 4	Students will acquire insight into the gendered division of labour and its relation to politics and economics.

II Year / II Semester (2018 - 2022 Batch) AY 2019-20

Course Code	Course Title	Credits
CS401PC	Discrete Mathematics	3
SM402MS	Business Economics & Financial Analysis	3
CS403PC	Operating Systems	3
CS404PC	Database Management Systems	4
CS405PC	Java Programming	4
CS406PC	Operating Systems Lab	1.5
CS407PC	Database Management Systems Lab	1.5
CS408PC	Java Programming Lab	1
*MC409	Constitution of India	0

CS401PC	CO 1	Ability to understand and construct precise mathematical proofs
	CO 2	Ability to use logic and set theory to formulate precise statements
	CO 3	Ability to analyze and solve counting problems on finite and discrete structures
	CO 4	Ability to describe and manipulate sequences
SM402MS	CO 1	The students will understand the various Forms of Business
	CO 2	The impact of economic variables on the Business.
	CO 3	The Demand, Supply, Production, Cost, Market Structure,Pricing aspects are learnt.
	CO 4	The Students can study the firm's financial position by analysing the Financial Statements of a Company.
CS403PC	CO 1	Will be able to control access to a computer and the files that may be shared
	CO 2	Demonstrate the knowledge of the components of computer and their respective roles in computing.
	CO 3	Ability to recognize and resolve user problems with standard operating environments.
	CO 4	Gain practical knowledge of how programming languages, operating systems, and architectures interact and how to use each effectively.

CS404PC	CO 1	Gain knowledge of fundamentals of DBMS, database design and normal forms
	CO 2	Master the basics of SQL for retrieval and management of data.
	CO 3	Be acquainted with the basics of transaction processing and concurrency control.
	CO 4	Familiarity with database storage structures and access techniques
CS405PC	CO 1	Able to solve real world problems using OOP techniques.
	CO 2	Able to understand the use of abstract classes and solve problems using java collection framework and I/o classes.
	CO 3	Able to develop multithreaded applications with synchronization.
	CO 4	Able to develop applets for web applications and design GUI based applications
CS406PC	CO 1	Simulate and implement operating system concepts such as scheduling, deadlock management, file management and memory management.
	CO 2	Able to implement C programs using Unix system calls
	CO 3	To simulate Bankers Algorithm for Deadlock Avoidance and Prevention.
	CO 4	To simulate the following memory management techniques
CS407PC	CO 1	Design database schema for a given application and apply normalization
	CO 2	Acquire skills in using SQL commands for data definition and data manipulation.
	CO 3	Develop solutions for database applications using procedures, cursors and triggers
	CO 4	Design with E-R Model and Relational Model
CS408PC	CO 1	Able to write programs for solving real world problems using java collection frame work.
	CO 2	Able to write programs using abstract classes.
	CO 3	Able to write multithreaded programs.
	CO 4	Able to write GUI programs using swing controls in Java.
	CO 1	Students will have developed a better understanding of important issues related to gender in contemporary India.

*MC409	CO 2	Students will be sensitized to basic dimensions of the biological, sociological, psychological and legal aspects of gender. This will be achieved through discussion of materials derived from research, facts, everyday life, literature and film.
	CO 3	Students will attain a finer grasp of how gender discrimination works in our society and how to counter it.
	CO 4	Students will acquire insight into the gendered division of labour and its relation to politics and economics.

III Year / I Semester (2018 - 2022 Batch) AY 2020-21

Course Code	Course Title	Credits
CS501PC	Formal Languages & Automata Theory	3
CS502PC	Software Engineering	3
CS503PC	Computer Networks	3
CS504PC	Web Technologies	3
CS515PE	Principles of Programming Languages	3
CS522PE	Advanced Operating Systems	3.0
CS505PC	Software Engineering Lab	1.5
CS506PC	Computer Networks & Web Technologies Lab	1.5
EN508HS	Advanced Communication Skills Lab	1
*MC510	Intellectual Property Rights	0

CS501PC	CO 1	Able to understand the concept of abstract machines and their power to recognize the languages.
	CO 2	Able to employ finite state machines for modeling and solving computing problems.
	CO 3	Able to design context free grammars for formal languages.
	CO 4	Able to gain proficiency with mathematical tools and formal methods.
CS502PC	CO 1	Ability to translate end-user requirements into system and software requirements, using e.g. UML, and structure the requirements in a Software Requirements Document (SRD).
	CO 2	Identify and apply appropriate software architectures and patterns to carry out high level design of a system and be able to critically compare alternative choices.
	CO 3	Will have experience and/or awareness of testing problems and will be able to develop a simple testing report
	CO 4	Functional and non-functional requirements, user requirements, system requirements, interface specification, the software requirements document.
	CO 1	Gain the knowledge of the basic computer network technology.

CS503PC	CO 2	Gain the knowledge of the functions of each layer in the OSI and TCP/IP reference model.
	CO 3	Obtain the skills of subnetting and routing mechanisms.
	CO 4	Familiarity with the essential protocols of computer networks, and how they can be applied in network design and implementation.
CS504PC	CO 1	Gain knowledge of client-side scripting, validation of forms and AJAX programming
	CO 2	Understand server-side scripting with PHP language
	CO 3	Understand what is XML and how to parse and use XML Data with Java
	CO 4	To introduce Server-side programming with Java Servlets and JSP
CS515PE	CO 1	Acquire the skills for expressing syntax and semantics in formal notation
	CO 2	Identify and apply a suitable programming paradigm for a given computing application
	CO 3	Gain knowledge of and able to compare the features of various programming languages
	CO 4	Introduction, Names, Variables, Concept of Binding, Scope, Scope and Lifetime, Referencing Environments, Named Constants
CS522PE	CO 1	Understand the design approaches of advanced operating systems
	CO 2	Analyze the design issues of distributed operating systems.
	CO 3	Evaluate design issues of multi processor operating systems.
	CO 4	Identify the requirements Distributed File System and Distributed Shared Memory.
CS505PC	CO 1	Ability to translate end-user requirements into system and software requirements
	CO 2	Ability to generate a high-level design of the system from the software requirements
	CO 3	Will have experience and/or awareness of testing problems and will be able to develop a simple testing report
	CO 4	Develop test cases for various white box and black box testing techniques.
06PC	CO 1	Implement data link layer farming methods
	CO 2	Analyze error detection and error correction codes.

CS5(	CO 3	Implement and analyze routing and congestion issues in network design.
	CO 4	Implement Encoding and Decoding techniques used in presentation layer
EN508HS	CO 1	Acquire vocabulary and use it contextually.
	CO 2	Listen and speak effectively.
	CO 3	Develop proficiency in academic reading and writing.
	CO 4	Increase possibilities of job prospects.
*MC510	CO 1	The students once they complete their academic projects, shall get an adequate knowledge on patent and copyright for their innovative research works
	CO 2	During their research career, information in patent documents provide useful insight on novelty of their idea from state-of-the art search.
	CO 3	This provide further way for developing their idea or innovations
	CO 4	Pave the way for the students to catch up Intellectual Property(IP) as an career option a. R&D IP Counsel b. Government Jobs – Patent Examiner c. Private Jobs d. Patent agent and Trademark agent e. Entrepreneur

III Year / II Semester (2018 - 2022 Batch) AY 2020-21

Course Code	Course Title	Credits
CS601PC	Machine Learning	4
CS602PC	Compiler Design	4
CS603PC	Design and Analysis of Algorithms	4
CS612PE	Network Programming	3
CS601OE	Fundamentals of Management for Engineers	3
CS604PC	Machine Learning Lab	1.5
CS605PC	Compiler Design Lab	1.5
CS622PE	Network Programming Lab	1
*MC609	Environmental Science	0

CS601PC	CO 1	Understand the concepts of computational intelligence like machine learning
	CO 2	Ability to get the skill to apply machine learning techniques to address the real time problems in different areas
	CO 3	Understand the Neural Networks and its usage in machine learning application.
	CO 4	An illustrative for face recognition, advanced topics in artificial neural networks.

CS602PC	CO 1	Demonstrate the ability to design a compiler given a set of language features.
	CO 2	Demonstrate the the knowledge of patterns, tokens & regular expressions for lexical analysis.
	CO 3	Acquire skills in using lex tool & yacc tool for devleoping a scanner and parser.
	CO 4	Design algorithms to do code optimization in order to improve the performance of a program in terms of space and time complexity.
CS603PC	CO 1	Ability to analyze the performance of algorithms
	CO 2	Ability to choose appropriate data structures and algorithm design methods for a specified application
	CO 3	Ability to understand how the choice of data structures
	CO 4	The algorithm design methods impact the performance of programs
CS612PE	CO 1	To write socket API based programs
	CO 2	To design and implement client-server applications using TCP and UDP sockets
	CO 3	To analyze network programs
	CO 4	Ability to understand Broadcasting and Multicasting
CS601OE	CO 1	The students understand the significance of Management in their Profession.
	CO 2	The various Management Functions like Planning, Organizing, Staffing, Leading
	CO 3	Students can learn Motivation and Control aspects in this course.
	CO 4	The students can explore the Management Practices in their domain area.
CS604PC	CO 1	Understand complexity of Machine Learning algorithms and their limitations
	CO 2	Understand modern notions in data analysis-oriented computing
	CO 3	Be capable of confidently applying common Machine Learning algorithms in practice and implementing their own
	CO 4	Be capable of performing experiments in Machine Learning using real-world data.
	CO 1	Design and develop interactive and dynamic web applications using HTML, CSS, JavaScript and XML

CS605PC	CO 2	Apply client-server principles to develop scalable and enterprise web applications.
	CO 3	Ability to design, develop, and implement a compiler for any language.
	CO 4	Able to use lex and yacc tools for developing a scanner and a parser.
CS622PE	CO 1	To write socket API based programs
	CO 2	To design and implement client-server applications using TCP and UDP sockets
	CO 3	To analyze network programs
	CO 4	To write Client and server application to given inputs
*MC609	CO 1	the Engineering graduate will understand /evaluate / develop technologies on the basis of ecological principles
	CO 2	They will come to know about the environmental regulations which in turn helps in sustainable development
	CO 3	The student will gain Knowledge on Environmental Pollution and Control Technologies
	CO 4	They will come to know about the various Environmental Policy, Legislation & EIA

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