



KUPPAM ENGINEERING COLLEGE

(Approved by AICTE, Affiliated to JNTUA, Accredited by NAAC, NBA & ISO 9001 : 2008 Certified)
(Recognised by UGC(f) & 12(b))

KUPPAM - 517 425, Chittoor Dist., A.P. ☎: 08570 - 256966 (O), 256977 (F)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

M.Tech. Computer Science and Engineering

Program Educational Objectives (PEO)

1. Prepare students to pursue a career in Research and Development, Academics, and as computer science professional at national and international level organizations.
2. Enable students to exhibit research & innovative skills and knowledge to further improvement of their technical aspiration.
3. Enable students to become entrepreneur and show their leadership and technical skills to adapt to the challenges of upcoming technologies.

Program Outcomes (PO)

PO1: An ability to independently carry out research /investigation and development work to solve practical problems.

PO2: An ability to write and present a substantial technical report/document.

PO3: Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.

Program Specific Outcomes (PSO)

PSO1: Design algorithm, software tools or processes to meet required needs within economic, environmental and social constraints.

PSO2: Ability to take up Research writing, presentation on findings and Entrepreneurship in the modern computing environment.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Course Outcomes for PG – M.Tech., (CSE)

Regulations-R21

I Semester

Subject Name : ADVANCED DATA STRUCTURES AND ALGORITHMS

Subject Code : 21D58101

Students will be able to:

CO1 : Understand the implementation of symbol table using hashing techniques

CO2: Apply advanced abstract data type (ADT) and data structures in solving real world problem.

CO3: Effectively combine the fundamental data structures and algorithmic techniques in building a solution to a given problem.


CO4: Develop algorithms for text processing applications.

CO5: Design algorithms for computational geometry.

CO, PO and PSO mapping Correlation

Cos / Pos	PO1	PO2	PO3	PSO1	PSO2
CO1	1	-	1	2	-
CO2	2	-	3	3	-
CO3	2	-	3	3	-
CO4	2	-	3	3	-
CO5	2	-	3	3	-


Program Co-ordinator


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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Subject Name : ADVANCED COMPUTER NETWORKS

Subject Code : 21D58102

Students will be able to:

CO1: Analyse computer network architectures and estimate quality of service

CO2: Design application-level protocols for emerging networks

CO3: Analyse TCP and UDP traffic in data networks

CO4: Design and analyse medium access methods, routing algorithms and IPv6 protocol for data networks

CO5: Analyze Data Center Networks and Optical Networks

CO, PO and PSO mapping Correlation

COs / POs	PO1	PO2	PO3	PSO1	PSO2
CO1	2	-	3	2	-
CO2	2	-	3	2	-
CO3	2	-	3	2	-
CO4	2	-	3	2	-
CO5	2	-	3	2	-


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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Subject Name : MACHINE LEARNING

Subject Code : 21D58103a

Students will be able to:

CO1: Understand various key paradigms for machine learning approaches

CO2: Formulate a machine learning problem

CO3: Understand and differentiate various machine learning techniques


CO4: Select an appropriate pattern analysis tool for analysing data in a given feature space

CO5: Apply pattern recognition and machine learning techniques such as classification and feature selection to practical applications and detect patterns in the data

CO, PO and PSO mapping Correlation

COs / POs	PO1	PO2	PO3	PSO1	PSO2
CO1	1	-	2	2	-
CO2	2	-	3	3	-
CO3	1	-	2	2	-
CO4	2	-	3	3	-
CO5	2	-	3	3	-


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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Subject Name : DATA SCIENCE

Subject Code : 21D58104a

Students will be able to:

CO1: Explain how data is collected, managed and stored for data science

CO2: Understand the key concepts in data science, including their real-world applications and the toolkit used by data scientists

CO3: Demonstrate an understanding of statistics and machine learning concepts that are vital for data science

CO4: Implement data collection and management scripts using MongoDB

CO5: Evaluate data visualizations based on their design and use for communicating stories from data

CO, PO and PSO mapping Correlation

COs / POs	PO1	PO2	PO3	PSO1	PSO2
CO1	2	-	3	3	-
CO2	2	-	3	3	-
CO3	2	-	3	3	-
CO4	2	-	3	3	-
CO5	2	-	3	3	-


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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Subject Name : ADVANCED DATA STRUCTURES AND ALGORITHMS LAB

Subject Code : 21D58105

Students will be able to:

CO1: Implement divide and conquer techniques to solve a given problem

CO2: Implement hashing techniques like linear probing, quadratic probing, random probing and double hashing/rehashing

CO3: Perform Stack operations to convert infix expression into post fix expression and evaluate the post fix expression


CO4: Differentiate graph traversal techniques Like Depth First Search, Breadth First Search

CO5: Identify shortest path to other vertices using various algorithms

CO, PO and PSO mapping Correlation

COs / POs	PO1	PO2	PO3	PSO1	PSO2
CO1	2	-	3	3	-
CO2	2	-	3	3	-
CO3	2	-	3	3	-
CO4	2	-	3	3	-
CO5	2	-	3	3	-


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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Subject Name : ADVANCED COMPUTER NETWORKS LAB

Subject Code : 21D58106

Students will be able to:

CO1: Develop programs for client-server applications

CO2: Perform packet sniffing and analyze packets in network traffic

CO3: Implement error detecting and correcting codes

CO4: Implement network security algorithms

CO5: Implement Queuing management

CO, PO and PSO mapping Correlation

COs / POs	PO1	PO2	PO3	PSO1	PSO2
CO1	3	-	2	3	-
CO2	3	-	2	3	-
CO3	3	-	2	3	-
CO4	3	-	2	3	-
CO5	3	-	2	3	-


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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Subject Name : RESEARCH METHODOLOGY AND IPR

Subject Code : 21DRM101

Students will be able to:

CO1: Analyze research related information follow research ethics

CO2: Understand the importance of ideas, concept and creativity


CO3: Preparation of a research project thesis report


CO4: Understand the Impact of IPR in engineering

CO5: Explore benefits of IPR in research and creation of innovative products, for economic growth and social benefits

CO, PO and PSO mapping Correlation

COs / POs	PO1	PO2	PO3	PSO1	PSO2
CO1	2	2	-	3	2
CO2	2	2	-	1	2
CO3	2	3	-	2	3
CO4	2	3	-	3	3
CO5	2	3	-	3	3


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Subject Name : ENGLISH FOR RESEARCH PAPER WRITING

Subject Code : 21DAC101a

Students will be able to:

CO1: Understand the significance of writing skills and the level of readability

CO2: Analyze and write title, abstract, different sections in research paper

CO3: Develop the skills needed while writing a research paper


CO4: Learn about what to write in each section of research paper

CO5: Ensure qualitative presentation with linguistic accuracy

CO, PO and PSO mapping Correlation

COs / POs	PO1	PO2	PO3	PSO1	PSO2
CO1	-	3	-	-	3
CO2	-	3	-	-	3
CO3	-	3	-	-	3
CO4	-	3	-	-	3
CO5	-	3	-	-	3


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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

II Semester

Subject Name : ADVANCED OPERATING SYSTEMS

Subject Code : 21D58201

Students will be able to:

CO1: Explain the functionality of a large software system by reading its source

CO2: Revise any algorithm present in a system, Inter process communication mechanism,

CO3: Explore networking and security Applications

CO4: Design an algorithm for inter process communication

CO5: Develop an application for Android mobiles inner process system

CO, PO and PSO mapping Correlation

COs / POs	PO1	PO2	PO3	PSO1	PSO2
CO1	1	-	2	2	-
CO2	2	-	3	3	-
CO3	3	-	1	3	-
CO4	1	-	2	3	-
CO5	3	-	3	3	-


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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Subject Name : INTERNET OF THINGS


Subject Code : 21D58202


Students will be able to:

- CO1: Choose the sensors and actuators for an IoT application
- CO2: Select protocols for a specific IoT application
- CO3: Utilize the cloud platform and APIs for IoT applications
- CO4: Experiment with embedded boards for creating IoT prototypes
- CO5: Design a solution for a given IoT application

CO, PO and PSO mapping Correlation

COs / POs	PO1	PO2	PO3	PSO1	PSO2
CO1	2	-	1	1	-
CO2	2	-	2	2	-
CO3	2	-	3	3	-
CO4	2	-	3	2	-
CO5	2	-	3	2	-


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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Subject Name : DEEP LEARNING

Subject Code : 21D58203a

Students will be able to:

CO1: Present the mathematical, statistical and computational challenges of building neural networks

CO2: Know deep learning techniques to support real-time applications

CO3: Explain the case studies of deep learning techniques

CO4: Identify the deep learning algorithms which are more appropriate for various types of learning tasks in various domains

CO5: Implement deep learning algorithms and solve real-world problems

CO, PO and PSO mapping Correlation

COs / POs	PO1	PO2	PO3	PSO1	PSO2
CO1	1	1	2	2	1
CO2	1	-	2	2	-
CO3	3	1	3	3	1
CO4	2	-	3	3	-
CO5	2	-	3	3	-


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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Subject Name : DATA VISUALIZATION TECHNIQUES

Subject Code : 21D58204a

Students will be able to:

CO1: Understand visualization for time-series analysis, ranking analysis, deviation analysis

CO2: Explain principles of visual perception

CO3: Apply core skills for visual analysis

CO4: Apply visualization techniques for various data analysis tasks

CO5: Design information dashboard

CO, PO and PSO mapping Correlation

COs / POs	PO1	PO2	PO3	PSO1	PSO2
CO1	1	-	2	2	-
CO2	2	1	3	2	1
CO3	2	-	3	2	-
CO4	2	-	3	3	-
CO5	3	-	3	3	-


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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Subject Name : ADVANCED OPERATING SYSTEMS LAB

Subject Code : 21D58205

Students will be able to:

CO1: Study Linux memory management data structures and algorithms

CO2: Acquire the knowledge in the implementation of inter-process communication


CO3: Revise any algorithm present in a system

CO4: Design a new algorithm to replace an existing one

CO5: Apply data structures of Linux Kernel for a different software system

CO, PO and PSO mapping Correlation

COs / POs	PO1	PO2	PO3	PSO1	PSO2
CO1	1	-	1	2	-
CO2	1	-	2	2	-
CO3	2	-	3	3	-
CO4	2	-	3	3	-
CO5	2	-	3	3	-


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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Subject Name : INTERNET OF THINGS LAB

Subject Code : 21D58206

Students will be able to:

CO1: Know the different real time sensors used to measure the different electrical parameters and to control the different devices from anywhere through IOT

CO2: Understand the technology behind the IoT and associated technologies


CO3: Use the IoT technologies in practical domains of society

CO4: Gain knowledge about the state of the art methodologies in IoT application domains.

CO5: Develop an application framework and embedded software agents for IoT toolkit

CO, PO and PSO mapping Correlation

Cos / Pos	PO1	PO2	PO3	PSO1	PSO2
CO1	1	-	1	1	-
CO2	1	-	2	2	-
CO3	2	-	3	3	-
CO4	2	-	3	3	-
CO5	3	-	3	3	-


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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Subject Name : TECHNICAL SEMINAR

Subject Code : 21D35207

Students will be able to:

CO1: Prepare a detailed review of literature on topics within the discipline as well as other disciplines, as necessary for undertaking a given problem.

CO2: Formulate the requirements in engineering terms when given the general objectives of a task.

CO3: Use advanced techniques and computer aided tools in analysing system components tasks


CO4: Apply the knowledge of concept learning to analyse a system problems and give feasible solutions by taking appropriate decisions where needed.

CO5: Communicate effectively the results of an engineering study both through a written report and oral presentation.

CO, PO and PSO mapping Correlation

COs / POs	PO1	PO2	PO3	PSO1	PSO2
CO1	-	3	-	-	3
CO2	-	3	-	-	3
CO3	-	3	-	-	3
CO4	-	3	-	-	3
CO5	-	3	-	-	3


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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

III Semester

Subject Name : DATA ANALYTICS

Subject Code : 21D58301c

Students will be able to:

CO1: Understand the ideas of statistical approaches to learning

CO2: Understand the significance of exploratory data analysis (EDA) in data science and apply basic tools (plots, graphs, summary statistics) to perform EDA

CO3: Apply basic machine learning algorithms (Linear Regression, k-Nearest Neighbors (k-NN), k-means, Naive Bayes) for predictive modeling


CO4: Explore the merits of Naive Bayes technique

CO5: Recognize the characteristics of machine learning techniques that are useful to solve real-world problems

CO, PO and PSO mapping Correlation

COs / POs	PO1	PO2	PO3	PSO1	PSO2
CO1	2	-	1	1	-
CO2	2	-	1	1	-
CO3	2	-	3	2	-
CO4	2	-	3	2	-
CO5	2	-	3	2	-


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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Subject Name : BUSINESS ANALYTICS

Subject Code : 21D0E301c

Students will be able to:

CO1: Learn various analytics methods of business in comprehensive manner

CO2: Demonstrate knowledge of data analytics

CO3: Explain the ability of think critically in making decisions based on data and deep analytics


CO4: Exhibit the ability to use technical skills in predicative and prescriptive modelling to support business decision-making

CO5: Show the ability to translate data into clear, actionable insights

CO, PO and PSO mapping Correlation

COs / POs	PO1	PO2	PO3	PSO1	PSO2
CO1	1	-	2	1	-
CO2	2	1	3	1	1
CO3	2	1	3	1	2
CO4	2	1	3	1	3
CO5	2	2	3	1	3


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