Narasu's Sarathy
Institute of Technology
Approved by AICTE | Accredited By NAAC | Affiliated to Anna University
Salem Bengaluru Highway NH - 7, Poosaripatty, Kadayampatty Taluk, Salem - 636305.
Admin Office: 93449-72274, Admission Cell: 93449-72275,73977-56003,
admin@nsit.edu.in,www.nsit.edu.in

COURSE OUTCOMES (COs)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING (PG)

2.6.1 Teachers and students are aware of the stated Programme and course outcomes of the

Programmes offered by the institution.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

VISION

- To prosper as a competent professional for serving industry and Nation's socio-economic progress.

MISSION

- To foster computing skills with an emphasis on professional competency, interpersonal development and ethics.
- To enrich the aptitude of the students for facing the recent challenges of industry and society.
- To inculcate the students for pursuing careers in industry, academic and research.

PROGRAM SPECIFIC OUTCOMES (PSOs):

1. To analyze, design and develop computing solutions by applying foundational concepts of Computer Science and Engineering.
2. To apply software engineering principles and practices for developing quality software for scientific and business applications.
3. To adapt to emerging Information and Communication Technologies (ICT) to innovate ideas and solutions to existing/novel problems.

PROGRAMME EDUCATIONAL OBJECTIVES:

1. To enable graduates to pursue research, or have a successful career in academia or industries associated with Computer Science and Engineering, or as entrepreneurs.

2. To provide students with strong foundational concepts and also advanced techniques and tools in order to enable them to build solutions or systems of varying complexity.

3. To prepare students to critically analyze existing literature in an area of specialization and ethically develop innovative and research oriented

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methodologies to solve the problems identified.

PROGRAMME OUTCOMES:

Engineering Graduates will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

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9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING	
REGULATION & SEMESTER:	**2017 - I**
SUBJECT CODE & NAME:	MA5160 - APPLIED PROBABILITY AND STATISTICS
CO'S	**COURSE OUTCOMES**
CO1	Basic probability axioms and rules and the moments of discrete and continuous random variables.
CO2	Consistency, efficiency and unbiasedness of estimators, method of maximum likelihood estimation and Central Limit Theorem
CO3	Use statistical tests in testing hypotheses on data.
CO4	Perform exploratory analysis of multivariate data, such as multivariate normal density, calculating descriptive statistics, testing for multivariate normality.
SUBJECT CODE & NAME:	CP5151 - ADVANCED DATA STRUCTURES AND ALGORITHMS
CO'S	**COURSE OUTCOMES**
	Student will be able,
CO1	Design data structures and algorithms to solve computing problems

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CO2	Design algorithms using graph structure and various string matching algorithms to solve real-life problems
CO3	Apply suitable design strategy for problem solving
SUBJECT CODE & NAME:	CP5152 - ADVANCED COMPUTER ARCHITECTURE
CO'S	**COURSE OUTCOMES**
	Student will be able,
CO1	Identify the limitations of ILP.
CO2	Discuss the issues related to multiprocessing and suggest solutions
CO3	Point out the salient features of different multicore architectures and how they exploit parallelism
CO4	Discuss the various techniques used for optimising the cache performance
CO5	Design hierarchal memory system
CO6	Point out how data level parallelism is exploited in architectures
SUBJECT CODE & NAME:	CP5153 - OPERATING SYSTEM INTERNALS
CO'S	**COURSE OUTCOMES**
	Student will be able,
CO1	To explain the functionality of a large software system by reading its source.
CO2	To revise any algorithm present in a system
CO3	To design a new algorithm to replace an existing one
CO4	To appropriately modify and use the data structures of the linux kernel for a different software system.
SUBJECT CODE & NAME:	CP5154 - ADVANCED SOFTWARE ENGINEERING
CO'S	**COURSE OUTCOMES**
	Student will be able,
CO1	Understand the advantages of various Software Development Lifecycle Models
CO2	Gain knowledge on project management approaches as well as cost and schedule estimation strategies
CO3	Perform formal analysis on specifications
CO4	Use UML diagrams for analysis and design
CO5	Architect and design using architectural styles and design patterns
CO6	Understand software testing approaches
CO7	Understand the advantages of DevOps practices
SUBJECT CODE & NAME:	CP5191 - MACHINE LEARNING TECHNIQUES
CO'S	**COURSE OUTCOMES**

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	Student will be able to,
CO1	Distinguish between, supervised, unsupervised and semi-supervised learning
CO2	Apply the appropriate machine learning strategy for any given problem
CO3	Suggest supervised, unsupervised or semi-supervised learning algorithms for any given problem
CO4	Design systems that uses the appropriate graph models of machine learning
CO5	Modify existing machine learning algorithms to improve classification efficiency
SUBJECT CODE & NAME:	CP5161 - DATA STRUCTURES LABORATORY
CO'S	**COURSE OUTCOMES**
	Student will be able to,
CO1	Design and implement basic and advanced data structures extensively.
CO2	Design algorithms using graph structures
CO3	Design and develop efficient algorithms with minimum complexity using design techniques.
REGULATION & SEMESTER:	**2017 - II**
SUBJECT CODE & NAME:	CP5201 - NETWORK DESIGN AND TECHNOLOGIES
CO'S	**COURSE OUTCOMES**
	Student will be able to,
CO1	Identify the components required for designing a network
CO2	Design a network at a high-level using different networking technologies
CO3	Analyze the various protocols of wireless and cellular networks
CO4	Discuss the features of 4G and 5G networks
CO5	Experiment with software defined networks
SUBJECT CODE & NAME:	CP5291 - SECURITY PRACTICES
CO'S	**COURSE OUTCOMES**
	Student will be able to,
CO1	Understand the core fundamentals of system security
CO2	Apply the security concepts related to networks in wired and wireless scenario

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CO3	Implement and Manage the security essentials in IT Sector
CO4	Able to explain the concepts of Cyber Security and encryption Concepts
CO5	Able to attain a thorough knowledge in the area of Privacy and Storage security and related Issues.
SUBJECT CODE & NAME:	CP5292 - INTERNET OF THINGS
CO'S	**COURSE OUTCOMES**
	Student will be able to,
CO1	Analyze various protocols for IoT
CO2	Develop web services to access/control IoT devices.
CO3	Design a portable IoT using Rasperry Pi
CO4	Deploy an IoT application and connect to the cloud.
CO5	Analyze applications of IoT in real time scenario
SUBJECT CODE & NAME:	CP5293 - BIG DATA ANALYTICS
CO'S	**COURSE OUTCOMES**
	Student will be able to,
CO1	Understand how to leverage the insights from big data analytics
CO2	Analyze data by utilizing various statistical and data mining approaches
CO3	Perform analytics on real-time streaming data
CO4	Understand the various NoSql alternative database models
SUBJECT CODE & NAME:	CP5092 - CLOUD COMPUTING TECHNOLOGIES
CO'S	**COURSE OUTCOMES**
	Student will be able to,
CO1	Employ the concepts of storage virtualization, network virtualization and its management
CO2	Apply the concept of virtualization in the cloud computing
CO3	Identify the architecture, infrastructure and delivery models of cloud computing
CO4	Develop services using Cloud computing
CO5	Apply the security models in the cloud environment
SUBJECT CODE & NAME:	CP5094 - INFORMATION RETRIEVAL TECHNIQUES
CO'S	**COURSE OUTCOMES**

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	Student will be able to,
CO1	Build an Information Retrieval system using the available tools.
CO2	Identify and design the various components of an Information Retrieval system.
CO3	Apply machine learning techniques to text classification and clustering which is used for efficient Information Retrieval.
CO4	Design an efficient search engine and analyze the Web content structure
SUBJECT CODE & NAME:	CP5261 - DATA ANALYTICS LABORATORY
CO'S	**COURSE OUTCOMES**
	Student will be able to,
CO1	Process big data using Hadoop framework
CO2	Build and apply linear and logistic regression models
CO3	Perform data analysis with machine learning methods
CO4	Perform graphical data analysis
SUBJECT CODE & NAME:	CP5281 - TERM PAPER WRITING AND SEMINAR
CO'S	**COURSE OUTCOMES**
	Student will be able to,
CO1	Selecting a subject, narrowing the subject into a topic
CO2	Stating an objective.
CO3	Collecting the relevant bibliography (atleast 15 journal papers)
CO4	Preparing a working outline.
CO5	Studying the papers and understanding the authors contributions and critically analysing each paper.
CO6	Preparing a working outline
CO7	Linking the papers and preparing a draft of the paper.
CO8	Preparing conclusions based on the reading of all the papers
CO9	Writing the Final Paper and giving final Presentation
REGULATION & SEMESTER:	**2017 - III**
SUBJECT CODE & NAME:	CP5074 - SOCIAL NETWORK ANALYSIS
CO'S	**COURSE OUTCOMES**
	Student will be able to,
CO1	Work on the internals components of the social network
CO2	Model and visualize the social network
CO3	Mine the behaviour of the users in the social network
CO4	Predict the possible next outcome of the social network
CO5	Apply social network in real time applications
SUBJECT CODE &	CP5097 - MOBILE APPLICATION DEVELOPMENT

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NAME:	
CO'S	**COURSE OUTCOMES**
	Student will be able to,
CO1	Describe the requirements for mobile applications.
CO2	Explain the challenges in mobile application design and development.
CO3	Develop design for mobile applications for specific requirements.
CO4	Implement the design using Android SDK.
CO5	Implement the design using Objective C and iOS.
CO6	Deploy mobile applications in Android and iPhone marketplace for distribution.
SUBJECT CODE & NAME:	CP5005 - SOFTWARE QUALITY ASSURANCE AND TESTING
CO'S	**COURSE OUTCOMES**
	Student will be able to,
CO1	Perform functional and non-functional tests in the life cycle of the software product.
CO2	Understand system testing and test execution process.
CO3	Identify defect prevention techniques and software quality assurance metrics.
CO4	Apply techniques of quality assurance for typical applications.
SUBJECT CODE & NAME:	CP5311 - Project Work Phase – I
CO'S	**COURSE OUTCOMES**
	Student will be able to,
CO1	On Completion of the project work students will be in a position to take up any challenging practical problems and find problem statement.

REGULATION & SEMESTER:	**2017 - IV**
COURSE CODE & NAME:	CP5411 - Project Work Phase – II
COS	**COURSE OUTCOMES**
	Student will be able to,
CO1	On Completion of the project work students will be in a position to take up any challenging practical problems and find solution by formulating proper methodology.