	ESWAR COLLEGE OF ENGINEERING: NARASARAOPET Approved by AICTE, New Delhi., Affiliated to JNTUK, Kakinada Kesanupalli Village, Narasaraopet – 522 601, Palnadu Dist. A.P.

Department Of Computer Science and Engineering

Course Outcomes

Year/Sem: II B.Tech I Sem **A.Y: 2020-21**

Course Name: Mathematical Foundations of Computer Science	
Course Code: CSE2101	
CSE2101.1	Demonstrate skills in solving mathematical problems
CSE2101.2	Comprehend mathematical principles and logic
CSE2101.3	Demonstrate knowledge of mathematical modeling .
CSE2101.4	proficiency in using mathematical software
CSE2101.5	Manipulate and analyze data numerically and/or graphically using appropriate Software
CSE2101.6	Communicate effectively mathematical ideas/results verbally or in writing

Course Name: Software Engineering	
Course Code: CSE2102	
CSE2102.1	Ability to transform an Object-Oriented Design into high quality
CSD2102.2	Ability to transform an Object-Oriented Design into executable code
CSD2102.3	Skills to design, implement, and execute test cases at the Unit TEST.
CSD2102.4	Skills to design, implement, and execute test cases at the Integration level
CSD2102.5	Compare conventional
CSD2102.6	agile software methods

Course Name: Python Programming	
Course Code: CSE2103	
CSE2103.1	Develop essential programming skills in computer programming concepts like data types, containers
CSE2103.2	Apply the basics of programming in the Python language
CSE2103.3	Solve coding tasks related conditional execution.
CSE2103.4	Solve coding tasks related loops.
CSE2103.5	Solve coding tasks related to the fundamental notions.
CSE2103.6	Techniques used in object-oriented programming

Course Name: Data Structures	
Course Code: CSE2104	
CSE2104.1	Summarize the properties, interfaces, and behaviors of basic abstract data types
CSE2104.2	Discuss the computational efficiency of the principal algorithms for sorting
CSE2104.3	Discuss the computational efficiency of the principal algorithms for searching
CSE2104.4	Use arrays, records, linked structures, stacks, queues, trees,
CSE2104.5	Graphs in writing programs
CSE2104.6	Demonstrate different methods for traversing trees

Course Name: Object Oriented Programming through C++	
Course Code: CSE2105	
CSE2105.1	Classify object oriented programming and procedural programming
CSE2105.2	Apply C++ features such as composition of objects, operator overloads, dynamic memory allocation,
CSE2105.3	Apply C++ features such as inheritance and polymorphism, file I/O, exception handling
CSE2105.4	Build C++ classes using appropriate encapsulation
CSE2105.5	Build C++ classes using appropriate design principles
CSE2105.6	Apply object oriented or non-object oriented techniques to solve bigger computing problems

Course Name: Computer Organization	
Course Code: CSE2106	
CSE2106.1	Develop a detailed understanding of computer systems
CSE2106.2	Cite different number systems, binary addition and subtraction, standard, floating-point, and micro operations
CSE2106.3	Develop a detailed understanding of architecture
CSE2106.4	Functionality of central processing unit
CSE2106.5	Exemplify in a better way the I/O and memory organization
CSE2106.6	Illustrate concepts of parallel processing, pipelining and inter processor communication

Course Name: Python Programming Lab	
Course Code: CSE2107	
CSE2107.1	Write, Test and Debug Python Programs
CSE2107.2	Use Conditionals
CSE2107.3	Loops for Python Programs
CSE2107.4	Use functions and represent Compound data using Lists,
CSE2107.5	Use functions and represent Compound data using Tuples and Dictionaries
CSE2107.6	Use various applications using python

Course Name: Data Structures through C++ Lab	
Course Code: CSE2108	
CSE2108.1	Use various applications using python .
CSE2108.2	Use basic data structures such as arrays.
CSE2108.3	Use basic data structures such as linked list
CSE2108.4	Programs to demonstrate fundamental algorithmic problems including Tree Traversals.
CSE2108.5	Graph traversals, and shortest paths.
CSE2108.6	Use various searching and sorting algorithms.

Year/Sem: II B.Tech II Sem

Course Name: Probability and Statistics	
Course Code: CSE2201	
CSE2201.1	Classify the concepts of data science and its importance (L4) or (L2)
CSE2201.2	Interpret the association of characteristics and through correlation and regression tools (L4)
CSE2201.3	Make use of the concepts of probability and their applications (L3)
CSE2201.4	Apply discrete and continuous probability distributions (L3)
CSE2201.5	Design the components of a classical hypothesis test (L6)
CSE2201.6	Infer the statistical inferential methods based on small and large sampling tests (L4)

Course Name: Java Programming	
Course Code: CSE2202	
CSE2202.1	Able to realize the concept of Object Oriented Programming & Java Programming Constructs
CSE2202.2	Able to describe the basic concepts of Java such as operators, classes, objects, inheritance, packages, Enumeration and various keywords
CSE2202.3	Apply the concept of exception handling and Input/ Output operations
CSE2202.4	Able to design the applications of Java & Java applet
CSE2202.5	Able to Analyze & Design the concept of Event Handling
CSE2202.6	Able to Analyze & Design the concept of Abstract Window Toolkit

Course Name: Operating Systems	
Course Code: CSE2203	
CSE2203.1	Describe various generations of Operating System and functions of Operating System
CSE2203.2	Describe the concept of program, process and thread and analyze various CPU Scheduling Algorithms and compare their performance
CSE2203.3	Solve Inter Process Communication problems using Mathematical Equations by various methods
CSE2203.4	Compare various Memory Management Schemes especially paging and Segmentation in Operating System and apply various Page Replacement Techniques
CSE2203.5	Outline File Systems in Operating System like UNIX/Linux .
CSE2203.6	Outline File Systems in Operating System like Windows .

Course Name: Database Management Systems	
Course Code: CSE2204	
CSE2204.1	Describe a relational database and object-oriented database
CSE2204.2	Create, maintain and manipulate a relational database using SQL
CSE2204.3	Describe ER model and normalization for database design
CSE2204.4	Examine issues in data storage and query processing and can formulate appropriate solutions
CSE2204.5	Outline the role and issues in management of data such as efficiency, privacy, security, ethical responsibility
CSE2204.6	Outline the role and issues in management of data such as strategic advantage.

Course Name: Formal Languages and Automata Theory	
Course Code: CSE2205	
CSE2205.1	Classify machines by their power to recognize languages.
CSE 2205.2	Summarize language classes & grammars relationship among them with the help of Chomsky hierarchy
CSE 2205.3	Employ finite state machines to solve problems in computing
CSE2205.4	Illustrate deterministic machines
CSE2205.5	Illustrate non-deterministic machines
CSE2205.6	Quote the hierarchy of problems arising in the computer science

Course Name: Java Programming Lab	
Course Code: CSE2206	
CSE2206.1	Evaluate default value of all primitive data type, Operations, Expressions, Control-flow, Strings
CSE2206.2	Determine Class, Objects, Methods, Inheritance, Exception,
CSE2206.3	Determine Runtime Polymorphism, User defined Exception handling mechanism
CSE2206.4	Illustrating simple inheritance, multi-level inheritance,
CSE2206.5	Illustrating Exception handling mechanism
CSE2206.6	Construct Threads, Event Handling, implement packages, developing applets

Course Name: UNIX Operating System Lab	
Course Code: CSE2207	
CSE2207.1	To use Unix utilities and perform basic shell control of the utilities
CSE2207.2	To use the Unix file system.
CSE2207.3	To use the file access control.
CSE2207.4	To use of an operating system to develop software
CSE2207.5	Students will be able to use Linux environment efficiently
CSE2207.6	Solve problems using bash for shell scripting

Course Name: Database Management Systems Lab	
Course Code: CSE2208	
CSE2208.1	Utilize SQL to execute queries for creating database.
CSE2208.2	Performing data manipulation operations.
CSE2208.3	Examine integrity constraints to build efficient databases
CSE2208.4	Apply Queries using Advanced Concepts of SQL
CSE2208.5	Build PL/SQL programs including stored procedures,
CSE2208.6	Build PL/SQL programs including functions, cursors and triggers

Year/Sem: III B.Tech I Sem

Course Name: Compiler Design	
Course Code :CSE3101	
CSE3101.1	Acquire knowledge in different phases and passes of Compiler, and specifying different types of tokens by lexical analyzer, and also able to use the Compiler tools like LEX, YACC, etc.
CSE3101.2	Parser and its types i.e. Top-down and Bottom-up parsers.
CSE3101.3	Construction of LL, SLR..
CSE3101.4	Construction of LALR parse table.
CSE3101.5	Syntax directed translation, synthesized and inherited attributes
CSE3101.6	Techniques for code optimization

Course Name: Unix Programming	
Course Code: CSE3102	
CSE3102.1	Documentation will demonstrate good organization and readability.
CSE3102.2	File processing projects will require data organization, problem solving and research.
CSE3102.3	Scripts and programs will demonstrate simple effective user interfaces.
CSE3102.4	Scripts and programs will demonstrate effective use of structured programming.
CSE3102.5	Scripts and programs will be accompanied by printed output demonstrating completion of a test plan.
CSE3102.6	Testing will demonstrate both black and glass box testing strategies

Course Name: Object Oriented Analysis and Design using UML	
Course Code: CSE3103	
CSE3103.1	Ability to find solutions to the complex problems using object oriented approach
CSE3103.2	Represent classes, responsibilities.
CSE3103.3	Represent states using UML notation
CSE3103.4	Identify classes and responsibilities of the problem domain
CSE3103.5	Analyze and design solutions to problems using object oriented approach
CSE3103.6	Study the notations of Unified Modeling Language

Course Name: Database Management Systems	
Course Code: CSE3104	
CSE3104.1	Describe a relational database and object-oriented database
CSE3104.2	Create, maintain and manipulate a relational database using SQL
CSE3104.3	Describe ER model and normalization f or database design
CSE3104.4	Examine issues in data storage and query processing and can formulate appropriate solutions.
CSE3104.5	Understand the role and issues in management of data such as efficiency, privacy,security, ethical responsibility, and strategic advantage.
CSE3104.6	Design and build database system for a given real world problem

Course Name: Operating Systems	
Course Code: CSE3105	
CSE3105.1	Design various Scheduling algorithms
CSE3105.2	Apply the principles of concurrency
CSE3105.3	Design deadlock, prevention and avoidance algorithms
CSE3105.4	Compare and contrast various memory management schemes
CSE3105.5	Design and Implement a prototype file systems.
CSE3105.6	Perform administrative tasks on Linux Servers

Course Name: Unified Modeling Lab	
Course Code: CSE3106	
CSE3106.1	Understand the Case studies and design the Model.
CSE3106.2	Understand how design patterns solve design problems.
CSE3106.3	Develop design solutions using creational patterns.
CSE3106.4	Construct UML diagrams for static view and dynamic view of the system.
CSE3106.5	Generate creational patterns by applicable patterns for given context.
CSE3106.6	Create refined model for given Scenario using structural patterns.

Course Name: Operating System & Linux Programming Lab	
Course Code: CSE3107	
CSE3107.1	To use Unix utilities and perform basic shell control of the utilities
CSE3107.2	To use the Unix file system and file access control.
CSE3107.3	To use of an operating system to develop software
CSE3107.4	Students will be able to use Linux environment efficiently
CSE3107.5	Solve problems using bash for shell scripting
CSE3107.6	Will be able to implement algorithms to solve data mining problems using weka tool

Course Name: Database Management System Lab	
Course Code: CSE3108	
CSE3108.1	Understand, appreciate and effectively explain the underlying concepts of database technologies
CSE3108.2	Design and implement a database schema for a given problem-domain
CSE3108.3	Normalize a database. Design and build a GUI application using a 4GL
CSE3108.4	Populate and query a database using SQL DML/DDL commands.
CSE3108.5	Declare and enforce integrity constraints on a database using a state-of-the-artRDBMS
CSE3108.6	Programming PL/SQL including stored procedures, stored functions, cursors, packages

Year/Sem: III B.Tech II Sem **R16**

Course Name: Computer Networks	
Course Code: CSE3201	
CSE3201.1	Understand OSI and TCP/IP models
CSE3201.2	Analyze MAC layer protocols and LAN technologies
CSE3201.3	Design applications using internet protocols
CSE3201.4	Understand routing
CSE3201.5	congestion control algorithms
CSE3201.6	Understand how internet works

Course Name: Data Warehousing and Mining	
Course Code: CSE3202	
SE3202.1	Understand stages in building a Data Warehouse
CSE3202.2	Understand the need and importance of preprocessing techniques
CSE3202.3	Understand the need and importance of Similarity.
CSE3202.4	Understand the need and importance of dissimilarity techniques.
CSE3202.5	Analyze and evaluate performance of algorithms for Association Rules.
CSE3202.6	Analyze Classification and Clustering algorithms

Course Name: Design and Analysis of Algorithms	
Course Code: CSE3203	
CSE3203.1	Argue the correctness of algorithms using inductive proofs and invariants.
CSE3203.2	Analyze worst-case running times of algorithms using asymptotic analysis.
CSE3203.3	Describe the divide-and-conquer paradigm and explain when an algorithmic design situation calls for it.
CSE3203.4	Recite algorithms that employ this paradigm. Synthesize divide-and conquer algorithms. Derive and solve recurrences describing the performance of divide and- conquer algorithms.
CSE3203.5	Describe the dynamic-programming paradigm and explain when an algorithmic design situation calls for it. Recite algorithms that employ this paradigm. Synthesize dynamic programming algorithms, and analyze them.
CSE3203.6	Describe the greedy paradigm and explain when an algorithmic design situation calls for it. Recite algorithms that employ this paradigm. Synthesize greedy algorithms, and analyze them.

Course Name: Software Testing Methodologies	
Course Code: CSE3204	
CSE3204.1	Understand the basic testing procedures.
CSE3204.2	Able to support in generating test cases and test suites.
CSE3204.3	Able to test the applications manually by applying different testing methods
CSE3204.4	Able to test the applications manually by applying automation tools
CSE3204.5	Apply tools to resolve the problems in Real time environment.
CSE3204.6	Acts as the reference for software testing techniques and strategies.

Course Name: Cyber Security	
Course Code: CSE3205	
CSE3205.1	Cyber Security architecture principles
CSE3205.2	Identifying System and application security threats and vulnerabilities
CSE3205.3	Identifying different classes of attacks
CSE3205.4	Cyber Security incidents to apply appropriate response
CSE3205.5	Describing risk management processes and practices
CSE3205.6	Evaluation of decision making outcomes of Cyber Security scenarios

Course Name: Network Programming Lab	
Course Code: CSE3206	
CSE3206.1	Understand and explain the basic concepts of Grid Computing;
CSE3206.2	Explain the advantages of using Grid Computing within a given environment;
CSE3206.3	Prepare for any upcoming Grid deployments and be able to get started with a potentially available Grid setup.
CSE3206.4	Discuss some of the enabling technologies e.g. high-speed links and storage area networks.
CSE3206.5	Build computer grids
CSE3206.6	To Design reliable servers using both TCP and UDP sockets

Course Name: Software Testing Lab	
Course Code: CSE3207	
CSE3207.1	Find practical solutions to the problems
CSE3207.2	Solve specific problems alone or in teams
CSE3207.3	Manage a project from beginning to end
CSE3207.4	Work independently as well as in teams
CSE3207.5	Define, formulate and analyze a problem
CSE3207.6	Demonstrate the working of software testing tools with c language.

Course Name: DATA WARE HOUSING AND DATA MINING LAB	
Course Code: CSE3208	
CSE3208.1	The data mining process and important issues around data cleaning,.
CSE3208.2	pre-processing and integration
CSE3208.3	The principle algorithms and techniques used in data mining, such as clustering
CSE3208.4	association mining, classification and prediction..
CSE3208.5	Exposure to real life data sets for analysis and prediction.
CSE3208.6	Learning performance evaluation of data mining algorithms in a supervised and an unsupervised setting.

Year/Sem: IV B.Tech I Sem

Course Name: Cryptography and Network Security	
Course Code:CSE4101	
CSE4101.1	To be familiarity with information security awareness and a clear understanding of its importance.
CSE4101.2	To master fundamentals of secret and public cryptography
CSE4101.3	To master protocols for security services
CSE4101.4	To be familiar with network security threats and countermeasures
CSE4101.5	To be familiar with network security designs using available secure solutions (such as PGP)
CSE4101.6	To be familiar with network security designs using available secure solutions(SSL, IPSec, etc)

Course Name: Software Architecture & Design Patterns	
Course Code: CSE4102	
CSE4102.1	To understand interrelationships, principles and guidelines governing architecture and evolution over time.
CSE4102.2	To understand various architectural styles of software systems.
CSE4102.3	To understand design patterns.
CSE4102.4	To understand object oriented concepts.
CSE4102.5	To understand implementation of design patterns and providing solutions to real world software design problems.
CSE4102.6	To understand patterns with each other and understanding the consequences of combining patterns on the overall quality of a system.

Course Name: Web Technologies	
Course Code: CSE4103	
CSE4103.1	Analyze a web page and identify its elements and attributes.
CSE4103.2	Create web pages using XHTML and Cascading Styles sheets.
CSE4103.3	Build dynamic web pages.
CSE4103.4	Build web applications using PHP.
CSE4103.5	Programming through PERL and Ruby
CSE4103.6	Write simple client-side scripts using AJAX

Course Name: Managerial Economics and Financial Analysis	
Course Code: CSE4104	
CSE4104.1	The Learner is equipped with the knowledge of estimating the Demand and demand elasticities for a product.
CSE4104.2	knowledge of understanding of the Input-Output-Cost relationships and estimation of the least cost combination of inputs.
CSE4104.3	One is also ready to understand the nature of different markets and Price Output determination
CSE4104.4	under various market conditions and also to have the knowledge of different Business Units
CSE4104.5	The Learner is able to prepare Financial Statements and the usage of various Accounting tools for Analysis and to evaluate various investment project proposals
CSE4104.6	Capital budgeting techniques for decision making.

Course Name: Mobile Computing	
Course Code: CSE4105	
CSE4105.1	Able to think and develop new mobile application.
CSE4105.2	Able to take any new technical issue related to this new paradigm.
CSE4105.3	come up with a solution(s).
CSE4105.4	Able to develop new ad hoc network applications algorithms/protocols.
CSE4105.5	Able to develop new ad hoc algorithms/protocols
CSE4105.6	Able to understand & develop any existing or new protocol related to mobile environment

Course Name: Software Project Management	
Course Code: CSE4106	
CSE4106.1	To match organizational needs to the most effective software development model
CSE4106.2	To understand the basic concepts and issues of software project management
CSE4106.3	To effectively Planning the software projects
CSE4106.4	To implement the project plans through managing people, communications and change
CSE4106.5	To select and employ mechanisms for tracking the software projects
CSE4106.6	To conduct activities necessary to successfully complete and close the Software projects

Course Name: Software Architecture& Design Patterns Lab	
Course Code: CSE4107	
CSE4107.1	Design of the Use Case View. Risk Analysis.
CSE4107.2	Implementation of the software architecture of a Weather Mapping System (WMS).
CSE4107.3	Implementation will take place in Java.
CSE4107.4	Implementation will take place C++
CSE4107.5	Each lab assignment consists of a theoretical part and a practical part, which are defined in specific lab assignment statements
CSE4107.6	Using UML design Iterator Design pattern

Course Name: Web Technologies Lab	
Course Code: CSE4108	
CSE4108.1	Students will be able to develop static web sites using XHTML and Java Scripts
CSE4108.2	To implement XML and XSLT for web applications
CSE4108.3	Develop Dynamic web content using Java Servlets
CSE4108.4	Develop Dynamic web content using JSP
CSE4108.5	To develop JDBC connections.
CSE4108.6	implement a complete Dynamic web application

Year/Sem: IV B.Tech II Sem

Course Name: Distributed Systems	
Course Code: CS4201	
CS4201.1	Develop a familiarity with distributed file systems.
CS4201.2	Describe important characteristics of distributed systems
CS4201.3	The salient architectural features of such systems.
CS4201.4	Describe the features and applications of important standard protocols which are used in distributed systems.
CS4201.5	Gaining practical experience of inter-process communication in a distributed environment
CS4201.6	Gaining practical experience of inter-process communication

Course Name: Management Science	
Course Code: CS4202	
CSE4202.1	After completion of the Course the student will acquire the knowledge on management functions,
CSE4202.2	Global leadership.
CSE4202.3	After completion of the Course the student will acquire the knowledge on organizational behaviour.
CSE4202.4	Will familiarize with the concepts of project management.
CSE4202.5	Will familiarize with the concepts of strategic management.
CSE4202.6	Will familiarize with the concepts of functional management.

Course Name: Machine Learning	
Course Code: CS4203	
CSE4203.1	Recognize the characteristics of machine learning that make it useful to real-world □Problems.
CSE4203.2	Characterize machine learning algorithms as supervised, semi-supervised, and Unsupervised.
CSE4203.3	Have heard of a few machine learning toolboxes.
CSE4203.4	Be able to use support vector machines.
CSE4203.5	Be able to use regularized regression algorithms.
CSE4203.6	Understand the concept behind neural networks for learning non-linear functions.

Course Name: Artificial Neural Networks	
Course Code: CS4204	
CSE4204.1	This course has been designed to offer as a graduate-level/ final year undergraduate level elective subject to the students of any branch of engineering/ science, having basic foundations of matrix algebra,
CSE4204.2	calculus and preferably (not essential) with a basic knowledge of optimization
CSE4204.3	Students and researchers desirous of working on pattern recognition and classification, regression and interpolation from sparse observations;
CSE4204.4	control and optimization are expected to find this course useful. The course covers theories and usage of artificial neural networks (ANN) for problems pertaining to classification (supervised/ unsupervised) and regression.
CSE4204.5	The course starts with some mathematical foundations and the structures of artificial neurons, which mimics biological neurons in a grossly scaled down version.
CSE4204.6	The course introduces perceptrons, discusses its capabilities and limitations as a pattern classifier and later develops concepts of multilayer perceptrons with back propagation learning.