Rishi M.S. Institute of Engineering & Technology for Women
(Approved by A.I.C.T.E., & Affiliated to J.N.T.U.H.)
(In Memory of "BHARAT RATNA" Mrs. M.S. Subbulakshmi)
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Computer Science and Engineering I & II Sem Course Outcomes For The Academic

Year 2024-2025

S.NO.	YEAR/SEM	COURSE NAME	Course Outcomes
1	I/I	ELEMENTS OF COMPUTER SCIENCE AND ENGINEERING	**CO1:** Know the working principles of functional units of a basic Computer
			CO2: Understand program development, the use of data structures and algorithms in problem solving.
			CO3: Know the need and types of operating system, database systems.
			CO4: Understand the significance of networks, internet, WWW and cyber security
2	I/I	PROGRAMMING FOR PROBLEM SOLVING LABORATORY and LAB	**CO1:** formulate the algorithms for simple problems
			CO2: translate given algorithms to a working and correct program
			CO3: correct syntax errors as reported by the compilers
			CO4: identify and correct logical errors encountered during execution
3	II/I	Data Structures	**CO1:** Ability to select the data structures that efficiently model the information in a problem.
			CO2: Abilitytoassessefficiencytrade-offsamongdifferentdatastructureimplementationsorcombinations.
			CO3: Implementandknowtheapplicationofalgorithmsforsortingandpatternmatching.
			CO4: Design programs using a variety of data structures, including hash tables, binary and general tree structures ,search trees, tries ,heaps, graphs, and AVL-trees
			CO1: Understandthebasicsofinstructionssetsandtheirimpactonprocessordesign

4	**II/I**	**COMPUTER ORGANIZATIONANDARCHITECTURE**	**CO2:** Demonstrateanunderstandingofthedesignofthefunctionalunitsofadigitalcomputersystem
			CO3: Evaluatecostperformanceanddesigntrade-offsindesigningandconstructingacomputerprocessorincludingmemory.
			CO4: Designapipelineforconsistentexecutionofinstructionswithminimumhazards.
			CO5: Recognizeandmanipulaterepresentationsofnumbersstoredindigitalcomputers.
5	**II/I**	**OBJECT ORIENTED PROGRAMMING through JAVA**	**CO1:** Able to develop programs with reusability
			CO2: Develop programs for file handling
			CO3: Handle exceptions in programming
			CO4: Develop applications for a range of problems using object-oriented programming techniques
6	**II/I**	**DIGITALELECTRONICS**	**CO1**: Know the characteristics of various components
			CO2: Understand the utilization of components
			CO3: Design and analyze small signal amplifier circuits.
			CO4: LearnPostulatesofBooleanalgebraandtominimizecombinationalfunctions
			CO5: Design and analyze combinational and sequential circuits
		COMPUTER	**CO1:** Apply the concepts of probability and distributions to some case studies

7	**II/I**	**ORIENTED STATISTICAL METHODS**	**CO2:** Correlate the material of one unit to the material in other units
			CO3: Resolve the potential misconceptions and hazards in each topic of study
			CO4: To measure experimental result based on hypothesis using chi square techniques
8	**II/I**	**DATA VISUALIZATION - R PROGRAMMING/ POWER BI**	**Co1:**Understand How to import data into Tableau.
			CO2: Understand Tableau concepts of Dimensions and Measures.
			CO3: Develop Programs and understand how to map Visual Layouts and Graphical Properties.
			CO4: Create a Dashboard that links multiple visualizations.
			CO5: Use graphical user interfaces to create Frames for providing solutions to real world
9	**II/I**	**Data Structure Lab**	**CO1:** Ability to develop C programs for computing and real-life applications using basic elements like control statements, arrays, functions, pointers and strings, and data structures like stacks, queues and linked lists.
			CO2: Ability to Implement searching and sorting algorithms
10	**II/I**	**JAVA LAB**	**CO1:** Ability to develop applications for a range of problems using object-oriented programming techniques
			CO1: To develop students' sensibility with regard to issues of gender in contemporary India.
			CO2: To provide a critical perspective on the socialization of men and women.
			CO3: To introduce students to information about some key biological aspects of genders.
			CO4: To expose the students to debates on the politics and economics of work.

11	**II/I**	**Gender Sensitization Lab**	**CO5:** To help students reflect critically on gender violence
			CO6: To expose students to more egalitarian interactions between men and women
12	**III/I**	**COMPUTER NETWORKS**	**CO1:** Gain the knowledge of the basic computer network technology
			CO2: Gain the knowledge of the functions of each layer in the OSI and TCP/IP reference model
			CO3: Obtain the skills of sub netting and routing mechanisms
			CO4: Familiarity with the essential protocols of computer networks, and how they can be applied in network design and implementation.
13	**III/I**	**DEVOPS**	**CO1:** Understand the various components of DevOps environment.
			CO2: Identify Software development models and architectures of Devop's
			CO3: Use different project management and integration tools.
14	**III/I**	**DESIGN AND ANALYSIS OF ALGORITHMS**	**CO1**: Analyze the performance of algorithms
			CO2: Choose appropriate data structures and algorithm design methods for a specified application
			CO3: Understand the choice of data structures and the algorithm design methods
			CO1: Acquire the skills for expressing syntax and semantics informal notation
			CO2: Identify andapplyasuitableprogrammingparadigmforagivencomputingapplica

15	III/I	**PRINCIPLES OFPROGRAMMINGLANGUAGES**	tion
			CO3: Gain knowledge of and able to compare the features of various programming languages
			CO4: Combine the constructs of programming structures with efficiently using oops, concurrency management and event handling
			CO5: Demonstrate the working of functional and logic programming language
16	III/I	ADVANCED ENGLISH COMMUNICATION SKILLS LAB	**CO1:** Gathering ideas and information to organise ideas relevantly and coherently
			CO2: Transferring information from non-verbal to verbal texts and vice-versa.
			CO3: Making oral presentations.
			CO4: Writing project/research reports/technical reports.
			CO5: Taking part in social and professional communication.
17	III/I	**INFORMATIONRETRIEVAL SYSTEMS**	**CO1:**AbilitytoapplyIRprinciplestolocaterelevantinformationlarge collections of data
			CO2: Ability to design different document clustering algorithms
			CO3: Implement retrieval systems for web search tasks**.**
			CO4: Design an Information Retrieval System for web search tasks
18	III/I	DEVOPS LAB	**CO1:** Understand the need of DevOps tools
			CO2: Understand the environment for a software application development
			CO3: Apply different project management, integration and development tools

19	**III/I**	**CN LAB**	**CO1**: Implement data link layer farming methods
			CO2: Analyze error detection and error correction codes
			CO3: Implement and analyze routing and congestion issues in network design.
			CO4: Implement Encoding and Decoding techniques used in presentation layer
			CO5: To be able to work with different network tools
20	**III/I**	INTELLECTUAL PROPERTY RIGHTS	**CO1:** Distinguish and Explain various forms of IPRs.
			CO2: Identify criteria to fit one's own intellectual work in particular form of IPRs.
			CO3: Apply statutory provisions to protect particular form of IPRs.
			CO4: Appraise new developments in IPR laws at national and international levee
21	**III/I**	UI DESIGN-FLUTTER	**CO1:**Implements Flutter Widgets and Layouts
			CO2: Responsive UI Design and with Navigation in Flutter
			CO3: Create custom widgets for specific UI elements and also Apply styling using themes and custom styles.
			CO4: Design a form with various input fields, along with validation and error handling
22	**IV/I**	CRYPTOGRAPHY AND NETWORK SECURITY	**CO1:** Student will be able to understand basic cryptographic algorithms, message and web authentication and security issues
			CO2: Ability to identify information system requirements for both of them such as client and server..
			CO3: Ability to understand the current legal issues towards information security..
			CO1: Abilityto understand various service delivery mode so fa cloud computing architecture

23	**IV-1**	**CLOUDCOMPUTING**	**CO2**: Ability to understand the ways in which the cloud can be programmed and deployed**.**
			CO3: Understanding cloud service providers.
24	**IV-I**	**SOFTWAREPROCESS &PROJECT MANAGEMENT**	**CO1:** Gainknowledgeofsoftwareeconomics,phasesinthelifecycleofsoftwaredevelopment,projectorganization,projectcontrolandprocessinstrumentation
			CO2: Analyzethemajorandminormilestones,artifactsandmetricsfrommanagementandtechnicalperspective
			CO3: Designanddevelopsoftwareproductusingconventionalandmodern principlesofsoftwareprojectmanagement
25	**IV-I**	ELECTRONIC SENSORS	**CO1:** Learn about sensor Principle, Classification and Characterization.
			CO2: Explore the working of Electromechanical, Thermal, Magnetic radiation and Electro analytic sensors.
			CO3: Understand the basic concepts of Smart Sensors.
26	**IV-I**	CRYPTOGRAPHY AND NETWORK SECURITY lab	**CO1:** Understand basic cryptographic algorithms, message and web authentication and security issues.
			CO2: Identify information system requirements for both of them such as client and server.
			CO3: Understand the current legal issues towards information security.
27	**IV-I**	COMPILER DESIGN LAB	**CO1:** Design, develop, and implement a compiler for any language.
			CO2: Use lex and yacc tools for developing a scanner and a parser.
			CO3: Design and implement LL and LR parsers.

28	**IV/I**	COMPILER DESIGN	**CO1:** Demonstrate the ability to design a compiler given a set of language features.
			CO2: Demonstrate the knowledge of patterns, tokens & regular expressions for lexical analysis.
			CO3: Acquire skills in using lex tool & yacc tool for developing a scanner and parser.
			CO4: Design and implement LL and LR parsers
			CO5: Design algorithms to do code optimization in order to improve the performance of a program in terms of space and time complexity.
29	**IV/I**	**Project Stage-I**	**CO1:** Student will able to learn about project.
30	**I/II**	**PYTHON PROGRAMMING LABORATORY**	**CO1:** Develop the application specific codes using python.
			CO2: Understand Strings, Lists, Tuples and Dictionaries in Python
			Co3: Verify programs using modular approach, file I/O, Python standard library
			CO4: Implement Digital Systems using Python
31	**II/II**	**DISCRETEMATHEMATICS**	**CO1**: Ability to understand and construct precise mathematical proofs
			CO2: Ability use logic and set theory to formula to precise statements
			CO3: Ability to analyze and solve counting problems on finite and discrete structures
			CO4: Ability to describe and manipulates equences
			CO5: Ability to apply graph theory in solving computing problems
		OPERATING SYSTEMS	**CO1:** Will be able to control access to computer and the files that may be shared
			CO2: Demonstratetheknowledgeofthecomponentsofcomputerandtheirrespectiverolesincomputing.
			CO3: Ability to recognize and resolve user problems with standard

32	**II/II**		operating environments
			CO5: Understanding files system structure and directory structure.
33	**II/II**	**BUSINESSECONOMICSANDFINANCIALANALYSIS**	**CO1:** The students will understand the various Forms of Business and the impact of economic variables on the Business
			CO2: The Demand ,Supply, Production ,Cost, Market Structure, Pricingaspects are learnt.
			CO3: The Students can study the firm's financial position by analyzing the Financial Statements of a Company.
34	**II/II**	**DATABASE MANAGEMENT SYSTEMS**	**CO1:** Gain knowledge of fundamental sof DBMS, database design and normal forms
			CO2: Master the basics of SQL for retrieval and management of data.
			CO3: Be acquainted with the basics of transaction processing and concurrency control.
			CO4: Familiarity with database storage structures and access techniques
35	**II/II**	SOFTWARE ENGINEERING	**CO1:** 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).
			CO2: 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.
			CO3: Will have experience and/or awareness of testing problems and will be able to develop a simple testing report
36	**II/II**	**OS LAB**	**CO1:**Simulate and implement operating system concepts s
			CO2: Able to implement C programs using Unix system calls
37	**II/II**	**DBMS LAB**	**CO1:**Design database schema for a given application and apply normalization
			CO2: Acquire skills in using SQL commands for data definition and data manipulation.

			CO3: Develop solutions for database applications using procedures, cursors and triggers
38	**II/II**	NODE JS/ REACT JS/ DJANGO	**CO1:** Build a custom website with HTML, CSS, and Bootstrap and little JavaScript.
			CO2: Demonstrate Advanced features of JavaScript and learn about JDBC
			CO3: Develop Server – side implementation using Java technologies like
39	**II/II**	**CONSTITUTIONOFINDIA**	**CO1:** Able to understand the concept of abstract machines and GUI based applications.
			CO2: Able to employ finite state machines for modelling and solving computing problems.
			CO3: Able to design context free grammars for formal languages.
			CO4: Able to distinguish between decidability and undecidability.
			CO5: Able to gain proficiency with mathematical tools and formal methods.
40	**III/II**	**Formal languages & Automate theory**	**CO1:** Able to understand the concept of abstract machines and their power to recognize the languages
			CO2: Able to employ finite state machines for modeling and solving computing problems
			CO3: Able to design context free grammars for formal languages
			CO4: Able to distinguish between decidability and un decidability.
			CO5: Able to gain proficiency with mathematical tools and formal methods.
41	**III/II**	**MACHINELEARNING**	CO1: Understandtheconceptsofcomputationalintelligencelikemachinelearning
			CO2: Ability to getther skill to apply machine learning techniques to address there al time problems in differentareas
			CO3: UnderstandtheNeuralNetworksanditsusageinmachinelearningapplica

			tion.
42	**III/II**	ARTIFICIAL INTELLIGENCE	CO1: Understand search strategies and intelligent agents
			CO2: Understand different adversarial search techniques
			CO3: Apply propositional logic, predicate logic for knowledge representation
			CO4: Apply AI techniques to solve problems of game playing, and machine learning.
43	**III/II**	**SOFTWARE TESTING METHODOLOGIES**	CO1: Ability to apply the process of testing and various methodologies in testing for developed software.
			CO2: Ability to write test cases for given software to test it before delivery to the customer.
44	**III/II**	FUNDAMENTALS OF INTERNET OF THINGS	CO1: Know basic protocols in sensor networks.
			CO2: Program and configure Arduino boards for various designs.
			CO3: Python programming and interfacing for Raspberry Pi.
45	**III/II**	**ML LAB**	CO1: understand complexity of Machine Learning algorithms and their limitations;
			CO2: understand modern notions in data analysis-oriented computing;
			CO3:be capable of confidently applying common Machine Learning algorithms in practice and implementing their own;
			CO4:Be capable of performing experiments in Machine Learning using real-world data.
46	**III/II**	**SOFTWARE TESTING METHODOLOGIES LAB**	CO1: Ability to apply the process of testing and various methodologies in testing for developed software.
			CO2: Ability to write test cases for given software to test it before

			delivery to the customer.
47	**III/II**	**BIG DATA-SPARK**	CO1: Develop MapReduce Programs to analyze large dataset Using Hadoop and Spark
			CO2: Write Hive queries to analyze large dataset Outline the Spark Ecosystem and its components
			CO3: Perform the filter, count, distinct, map, flatMap RDD Operations in Spark.
			CO4: Build Queries using Spark SQL
48	**III/II**	**ES**	CO1: : Based on this course, the Engineering graduate will understand /evaluate / develop technologies on the basis of ecological principles and environmental regulations which in turn helps in sustainable development
49	**IV/II**	**ORGANIZATIONAL BEHAVIOUR**	CO1: Analysis the behaviour of individuals and groups in organizations in terms of the key factors that influence organizational behaviour.
			CO2: Access the potential effects of organizational level factors on organizational behaviour
			CO3: Critically evaluate the potential effects of important developments in the external environment on organizational behaviour.
			CO4: Analyze organizational behaviour issues in the context of organizational behaviour theories, models and concepts.
50	**IV/II**	**HUMAN COMPUTER INTERACTION**	CO1: Apply HCI and principles to interaction design. .
			CO2: Design certain tools for blind or PH people
			CO3**:** Understand the social implications of technology and ethical responsibilities as engineers
			CO4: Understand the importance of a design and evaluation methodology.
51	**IV/II**	**Measuring Instruments**	CO1: After Completion of the course the student is able to
			CO2: Able to identify suitable sensors and transducers for real time applications.

			CO3: Able to translate theoretical concepts into working models.
52	**IV/II**	**PROJECT WORK including Seminar**	CO1: Student will be able to analyze a problem, identify and define the computing requirements appropriate to its solutions.
			CO2: Students will be able to function effectively on teams to accomplish a common goal.
			CO3: Students will be able to use current techniques, skill and tools necessary for computing practices.
			CO4: Students will be able to design and development principles in the construction of software systems of varying complexity.
			CO5: Students will be able to get an eye opener to bridge gap between Academic and real time industry issues on technological front