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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Information Technology and Engineering I & II Sem Course Outcomes For The Academic Year 2024-2025

S. NO.	YEAR/SEM	COURSE NAME	Course Outcomes
1	I/I	IT Workshop	**CO1:** Perform Hardware troubleshooting
			CO2: Understand Hardware components and inter dependencies
			CO3: Safeguard computer systems from viruses/worms
			CO4: Document/ Presentation preparation
2	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
3	II/I	COMPUTER ORGANIZATION AND MICROPROCESSOR	**CO1:** Understandthebasicsofinstructionssetsandtheirimpactonprocessordesign
			CO2: Demonstrateanunderstandingofthedesignofthefunctionalunitsofadigitalcomputersystem
			CO3: Evaluatecostperformanceanddesigntrade-offsindesigningandconstructingacomputerprocessorincludingmemory.
			CO4: Designapipelineforconsistentexecutionofinstructionswithminimumhazard

			s.
			CO5: Recognizeandmanipulaterepresentationsofnumbersstoredindigitalcomputers.
4	**II/I**	**INTRODUCTION TO IOT**	**CO1:** Known basic protocols in sensor networks.
			CO2: Program and configure Arduino boards for various designs.
			CO3: Python programming and interfacing for Raspberry Pi.
			CO4: Explore IoT applications in different domains.
5	**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
6	**II/I**	**COMPUTER ORIENTED STATISTICALMETHODS**	**CO1:** Apply the concepts of probability and distributions to some case studies
			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
7	**II/I**	**DATA VISUALIZATION - R PROGRAMMING/ POWER**	**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.

		BI	**CO4**: Create a Dashboard that links multiple visualizations.
			CO5: Use graphical user interfaces to create Frames for providing solutions to real world
8	**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
9	**II/I**	**Internet of Things Lab**	**CO1:** Ability to introduce the concept of M2M (machine to machine) with necessary protocols and get awareness in implementation of distance sensor
			Co2: Get the skill to program using python scripting language which is used in many IoT devices
10	**II/I**	**Digital Electronics LAB**	**CO1:** Acquire the knowledge on numerical information in different forms and Boolean Algebra Theorems.
			CO2: Define Postulates of Boolean algebra and to minimize combinational functions, and design the combinational circuits.
			CO3: Design and Analyze Sequential Circuits for various cyclic functions.
11	**II/I**	**Gender Sensitization Lab**	**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.
			CO5: To help students reflect critically on gender violence
			CO6: To expose students to more egalitarian interactions between men and women
		DATA	**CO1:** Gain the knowledge of the basic computer network technology
			CO2: Gain the knowledge of the functions of each layer in the OSI and

12	**III/I**	**COMMUNICATIONS AND COMPUTER NETWORKS**	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**	**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 designof 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 simpletesting report
14	**III/I**	**MACHINE LEARNING**	**CO1:** Distinguish between, supervised, unsupervised and semi-supervised learning
			CO2: Understand algorithms for building classifiers applied on datasets of non-linearly separable classes
			CO3: Understand the principles of evolutionary computing algorithms
15	**III/I**	**PRINCIPLES OF PROGRAMMING LANGUAGES**	**CO1:** Acquire the skills for expressing syntax and semantics informal notation
			CO2: Identify andapplyasuitableprogrammingparadigmforagivencomputingapplication
			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
			CO1: Gathering ideas and information to organise ideas

16	**III/I**	**ADVANCED ENGLISH COMMUNICATION SKILLS LAB**	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**	**COMPUTER GRAPHICS**	**CO1:** Explore applications of computer graphics
			CO2: Understand 2D, 3D geometric transformations and clipping algorithms
			CO3: Understand 3D object representations, curves, surfaces, polygon rendering methods, color models
			CO4: Analyze animation sequence and visible surface detection methods
18	**III/I**	**Machine Learning LAB**	**CO1:** Understand modern notions in predictive data analysis
			CO2: Select data, model selection, model complexity and identify the trends
			CO3 Understand a range of machine learning algorithms along with their strengths and weaknesses
19	**III/I**	**Software engineering and 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**	**INFORMATION SECURITY**	**CO1:** Demonstrate the knowledge of cryptography, network security concepts and applications.
			CO2: Ability to apply security principles in system design.
			CO3: Ability to identify and investigate vulnerabilities and security threats and mechanisms to counter them.
23	**IV-1**	**CLOUDCOMPUTING**	**CO1:**Abilityto understand various service delivery models of a cloud computing architecture
			CO2: Ability to understand the ways in which the cloud can be programmed and deployed**.**
			CO3: Understanding cloud service providers.
24	**IV-I**	**SOFTWARE PROCESS &PROJECTMANAGEMENT**	**CO1:** Gainknowledgeofsoftwareeconomics,phasesinthelifecycleofsoftware development,projectorganization,projectcontrolandprocessinstrumentation
			CO2: Analyzethemajorandminormilestones,artifactsandmetricsfrommanagementandtechnicalperspective
			CO3: Designanddevelopsoftwareproductusingconventionalandmodernprinciplesofsoftwareprojectmanagement

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**	**INFORMATION SECURITY LAB**	**CO1:** Demonstrate the knowledge of cryptography, network security concepts and applications.
			CO2: Ability to apply security principles in system design.
			CO3: Ability to identify and investigate vulnerabilities and security threats and mechanisms to counter them.
27	**IV-I**	**CLOUD COMPUTING LAB**	**CO1:** Understand various service types, delivery models and technologies of a cloud computing environment.
			CO2: Understand the ways in which the cloud can be programmed and deployed.
			CO3: Understand cloud service providers like Cloud sim, Globus Toolkit etc.
			CO4: Examine various programming paradigms suitable to solve real world and scientific problems using cloud services.
28	**IV/I**	**INFORMATION RETRIEVAL SYSTEMS**	**CO1:**Ability to apply IR principles to locate relevant information large 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
29	**IV/I**	**Project Stage-I**	**CO1:** Student will able to learn about project.
30	**I/II**	**PYTHON PROGRAMMING LABORATOR**	**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

		Y	library
			CO4: Implement Digital Systems using Python
31	**II/II**	**DISCRETEMATHEMATICS**	**CO1**: Ability to understand and construct precise mathematical proofs
			CO2: Ability to use logic and set theory to formulate precise statements
			CO3: Ability to analyze and solve counting problems on finite and discrete structures
			CO4: Ability to describe and manipulate sequences
			CO5: Ability to apply graph theory in solving computing problems
32	**II/II**	**OPERATING SYSTEMS**	**CO1:** Will be able to control access to a computer and the files that may be shared
			CO2: Demonstratetheknowledgeofthecomponentsofcomputerandtheirrespective rolesincomputing.
			CO3: Ability to recognize and resolve user problems with standard operating environments
			CO5: Understanding files system structure and directory structure.
33	**II/II**	**BUSINESS ECONOMICS AND FINANCIAL ANALYSIS**	**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, Pricing aspects are learnt.
			CO3: The Students can study the firm's financial position by analyzing the Financial Statements of a Company.
34	**II/II**	**DATABASEMANAGEMENT SYSTEMS**	**CO1:** Gain knowledge of fundamentals of 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**	**JAVA PROGRAMMING**	**CO1:** Able to solve real world problems using OOP techniques
			CO2: Able to understand the use of abstract classes.
			CO3: Able to solve problems using java collection framework and I/o classes.
			CO4: Able to develop multithreaded applications with synchronization.
			CO5: Able to develop applets for web applications.
			CO6: Able to design GUI based applications
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**	**JAVA LAB**	**CO1:**Able to write programs for solving real world problems using java collection frame work
			CO2: Able to write programs using abstract classes.
			CO3: Able to write multithreaded programs
			CO4: Able to write GUI programs using swing controls in Java.
39	**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
40	**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 undesirability.
			CO5: Able to gain proficiency with mathematical tools and formal methods.
41	**III/II**	**AUTOMATA THEORY AND COMPILER DESIGN**	**CO1:** Able to employ finite state machines for modelling and solving computing problems.
			CO2: Able to design context free grammars for formal languages.
			CO3: Able to distinguish between decidability and undesirability.
			CO4: Demonstrate the knowledge of patterns, tokens & regular expressions for lexical analysis.
			CO5: Acquire skills in using lex tool and design LR parsers
42	**III/II**	**ALGORITHMS DESIGN AND ANALYSIS**	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
43	**III/II**	**EMBEDDED SYSTEMS**	CO1: Expected to understand the selection procedure of processors in the embedded domain.
			CO2: Design procedure of embedded firm ware.
			CO3: Expected to visualize the role of realtime operating systems in embedded systems.

			CO4: Expected to evaluate the correlation between task synchronization and latency issues.
44	**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.
45	**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.
46	**III/II**	**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.
47	**III/II**	**Embedded Systems Lab**	CO1: Expected to understand the selection procedure of processors in the embedded domain.
			CO2: Design procedure of embedded firm ware.
			CO3: Expected to visualize the role of real time operating systems in embedded systems.
			CO4: Expected to evaluate the correlation between task synchronization and latency issues.
48	**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.
49	**III/II**	**BIG DATA-SPARK**	CO1: Develop Map Reduce 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
50	**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
51	**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.
52	**IV/II**	**WEB SECURITY**	CO1: Understand the Web architecture and applications.
			CO2: Understand client side and service side programming
			CO3**:** Understand how common mistakes can be bypassed and exploit the application
			CO4: Identify common application vulnerabilities