



Department of IOT
Description of Course Outcome
2021-2025

SL NO	Course Code	Course Name	CO No	CO DESCRIPTION
I	HUMANITIES & SOCIAL SCIENCES			
1	20UC1101	Integrated Professional English	1	Understand the concepts of grammar to improve communication, reading, and writing skills
			2	Demonstrate required knowledge over Dos and Don'ts of speaking in the corporate context. Demonstrate ability to face formal situations / interactions.
			3	Understand the varieties of reading and comprehend the tone and style of the author. Skim and scan effectively and appreciate rhetorical devices
			4	Apply the concepts of writing to draft corporate letters, emails, and memos
2	20UC1202	English Proficiency	1	Demonstrating different interpersonal skills for employability
			2	Distinguishing business essential skills
			3	Classifying social media and corporate communication skills
			4	Applying analytical thinking skills

			1	Able to spot the common grammatical errors related to sentence structure, preposition, concord, relative and conditional clauses and parallel structures. The learner should be efficient to construct a context-determined text in addition to learning Technical Writing Skills.
--	--	--	---	--

3	20UC2103	Professional Communication Skills	2	Able to read, understand, and interpret a text intrinsically as well as extrinsically. The learner can browse a text quickly to come-up with a gist and personal interpretation. Able to create a healthy work-environment and prove to be an asset or one of the most reliable resources to the organization.
			3	Apply the concepts of time and work; men-time-work problems based on wages, pipes and cisterns. Apply the concepts of time and distance and solve the problems related to average speed, relative speed.
			4	Apply Venn diagrams to find out appropriate conclusions from the given statements. Apply the logical implications and also the negations of various connectives to find the solutions. Analyze the data and represent in the form of Venn diagrams to find relations between any given set of elements.
4	20UC2204	Corporate Communication Skills	1	Verbal ability
			2	Soft skills
			3	Quantitative aptitude
			4	Reasoning

5	20UC3005	Aptitude Builder I	2	Analyze the concepts of critical and analytical reading skills. Apply the strategies and techniques learnt in handling interviews in different contexts.
			3	Apply the concepts of Ratio & Proportion, Percentages, Profit & Loss, Simple & Compound Interest
			4	Analyze the series of numbers or letters to predict the next number in the series or to find the analogy. Analyze the data to find the codes in the process of encoding and decoding. Apply the given set of conditions to select a team from a group of members.
6	20UC3006	Aptitude Builder II	1	Apply the strategies and techniques for conversations in different contexts. Analyze the different parameters and formats of written technical communication and apply in everyday work and life.
			2	Analyze the concepts of critical and analytical reading skills. Apply the strategies and techniques learnt in handling interviews in different contexts.
			3	Apply the concepts of Ratio & Proportion, Percentages, Profit & Loss, Simple & Compound Interest
			4	Analyze the series of numbers or letters to predict the next number in the series or to find the analogy. Analyze the data to find the codes in the process of encoding and decoding. Apply the given set of conditions to select a team from a group of members.
7	20UC0007	*Indian Heritage and Culture	1	To familiarize with various aspects of the culture and heritage of India through ages.

			2	To acquaint with the contributions of Indians in the areas of languages and literature, religion and philosophy
			3	To understand the Social structure and the spread of Indian culture abroad
			4	To know the development of Science and Technology in India through ages and to appreciate the contributions of some of the great Indian scientists
8	20UC0008	*Indian Constitution	1	To understand Constitutional development after Independence
			2	To learn the fundamental features of the Indian Constitution
			3	To get a brief idea of the powers and functions of Union and State Governments
			4	To understand the basics of working of Indian Judiciary and the Election Commission
9	20UC0009	*Ecology & Environment	1	Understand the importance of Environmental education and conservation of natural resources.
			2	Understand the importance of ecosystems and biodiversity.
			3	Apply the environmental science knowledge on solid waste management, disaster management and EIA process.
10	20UC0010	*Universal Human Values & Professional Ethics (online)	1	Understand and identify the basic aspiration of human beings
			2	Envisage the roadmap to fulfill the basic aspiration of human beings.

			3	Analyze the profession and his role in this existence.
11	20UC0011	*Entrepreneurship	1	Learn critical elements of entrepreneurship and its development from institution's perspective
			2	Understand the process of entrepreneurship and its eco system in an educational institute to fit in entrepreneurship zone
			3	Understand & Learn Design Thinking skills towards product innovation & prototype design
			4	Learn the essential component of planning a new startup, including a. Recognizing viable market opportunities & Market assessment via secondary market research and customer discovery via primary market research b. Creating a profitable business model and an executable business plan c. Protecting the intellectual property at the heart of their technology company d. Developing financial projections that are aligned with the proposed business plan
			5	Study the practices of working with Co-students in other discipline, integrating creative business strategies with solid engineering and effectively working in multi disciplinary teams
			6	Recognize the methods of making decisions in highly uncertain and unstructured environments to take feedback from a large variety of sources that use it to improve their business plans, or help them to 'pivot' and find alternative ideas or approaches

Note: * marked course are audit courses

II BASIC SCIENCES				
1	20MT1101	Mathematics for Computing	1	Model a system of equations for real world applications in engineering, physical and biological sciences, computer science, finance, economics and solve them through matrix algebra
			2	Model basic and computational techniques on discrete structures like relations, orders, functions & FSM, Lattices, and propositional & predicate logic
			3	Model real world structures and their related applications using advanced discrete structures like graphs and trees.
			4	Model the given Statistical data for real world applications in Engineering science, Economics and Management.
			5	Demonstrate the Aptitude and Reasoning skills (Tests in skilling hours)
2	19MT2102	Mathematics for Engineers	1	Apply differential and integral calculus to find maxima & minima of functions and evaluate the integrals
			2	Model and solve the relevant phenomena as a differential equation .
			3	Demonstrate Fourier series and Analytic functions
			4	Describe probability , Random Variables and Algebraic structures
3	19BT1001	Biolog for Engineers	1	Acquire the Knowledge of basic biology
			2	Acquire the Knowledge of Human Biological Systems
			3	Acquire Knowledge on Microorganisms and Biosensors

4	20UC1102	Design Thinking and Innovation I	1	Understand the basics of design thinking and its implications in product or service development
			2	Understand and Analyse the requirements of a typical problem
			3	Plan the necessary activities towards solving the problem through ideation and prototyping
			4	evaluate the solution and refine them based on the customer feedback
5	20UC1203	Design Thinking and Innovation Ii	1	Understand the basics of design thinking and its implications in product or service development
			2	Understand and Analyse the requirements of a typical problem
			3	Plan the necessary activities towards solving the problem through ideation and prototyping
SCIENCE ELECTIVE-1				
1	19PH1008	Physics for Electronic Engineers	1	Ability to understand classification of solids based on their Energy Bands.
			2	Ability to understand the conducting and semiconducting properties of solids at the microscopic level.
			3	Ability to understand the dielectric properties of materials at the microscopic level and their applications.
			4	Ability to understand the magnetic interactions in materials and the applications.
			5	Apply the knowledge on structure and properties of materials while executing related experiments and develop some inter disciplinary projects

2	19 PH1004	Solid State Physics	1	Understands spin and orbital motion of electrons in determining magnetic properties of materials and identifies their role in classification soft & hard magnetic materials having specific engineering applications.
			2	Understands role of molecular level vibrations in determining thermal properties of materials, heat treatment methods for changing the microstructure of materials and micro and macro level responses of materials subjected to load, for identification of materials having specific engineering applications.
			3	Understands the role of electronic energy band structures of solids in governing various electrical and optical properties of materials.
			4	Understands the role of electronic energy band structures of solids using various models, classification of materials based on their band structures and their properties
			5	Apply the knowledge on structure and properties of materials while executing related experiments and develop some inter disciplinary projects.
3	19PH2101	Quantum Mechanics Engineers	1	Understand the need of Quantum Mechanics and mathematical formulations of equations.
			2	Understand properties.
			3	Understand the applications of Quantum Mechanics for some semiconducting components.
			4	Understand some simple Quantum Systems
SCIENCE ELECTIVE-2				

1	19CY1101	Engineering Chemistry	1	Demonstrate materials
			2	Illustrate photophysical basis of light absorption and emission by materials
			3	Sketch the underlying principles of organic light emitting diodes
			4	Explain the concepts of solar cells modules and memory devices
			5	An ability to apply and generate experimental skills
2	19CY1002	Chemistry and Bio-Informatics for Engineers	1	Develop the current knowledge of materials and apply the characteristics, theories of materials in biomedical applications.
			2	Interpret the interaction of biomolecules with various bioelectrodes and host responses to implants, including toxicity and health implications
			3	Relate genetics and modern DNA technology for disease diagnostics, therapy and drug design.
			4	Illustrate the application of chemistry, organic electronics in diagnostic and therapeutic area.
			5	Analyse the properties of the samples using analytical instruments which are useful for clinical analysis in health care, drugs and pharmaceutical laboratories.
3	19CY1004	Organic Electronics	1	Demonstrate different types of semiconducting materials
			2	Illustrate photophysical basis of light absorption and emission by materials
			3	Sketch the underlying principles of organic light emitting diodes
			4	Explain the concepts of solar cells modules and memory devices

ENGINEERING SCIENCE:

1	20EC1101	Computer Organization and Architecture	1	Understand the functionality of CPU functional units - control unit, registers, the arithmetic and logic unit, instruction execution unit
			2	Understand the concepts of CPU and the operation of main, cache and virtual memory organizations.
			3	Understand the concepts of the different types of I/O modules and I/O transfer techniques in computer modules
			4	Apply the concept of pipelining in instruction execution and design issues of RISC, CISC and parallel computing architectures
2	21EC1101:	Digital Logic & Processors	1	Understand numerical and character representations in digital logic, number system, data codes and the corresponding design of arithmetic circuitry. Understanding Logic gates, Logic theorems, Boolean algebra and SOP/POS'S expressions.
			2	Combinational systems design using standard gates and minimization methods
			3	Sequential systems: Design of counters using flip flops.
			4	Understanding PLA's, PAL's, FPGA's, and processors
3	21EC1203:	Design of Basic Electronic Circuits	1	Understand the basic electronic components.
			2	Understand the basic circuit analysis techniques
			3	Understand the active circuit elements and working.
			4	Analyse the applications of semiconductor devices
PROFESSIONAL CORE				
1	21EC2104:	Electronic Devices and Circuit Design	1	Understand the BJT operations and a circuit function.
			2	Understand the FET operations and circuit functions
			3	Understand the Op.-Amp operations and circuit functions
			4	Understand the Op-Amp filters and Oscillator circuit functions

2	21IN2101	Processors and Controllers	1	Understand the architecture and programming concepts of 8086 Microprocessor
			2	Understand the architecture and programming concepts of 8052 microcontroller
			3	Apply the Programming concepts of the 8051 and Interfacing of Peripherals.
			4	Understand the basic architectures of PIC and ARM 7 microcontrollers and design the systems.
3	21IN2102	Sensors and Actuators	1	Understand fundamental principles of sensing technology
			2	Understand the various sensors and implementation and interfacing communication technologies
			3	Understand actuator principles, working, and various types of actuators.
			4	Apply Practical experience with sensor and actuator Interfacing with Microprocessor/controller to build electronic system.
4	21IN2103	Data Science and Data Analytics	1	Ability to find and transmit data emanated from different embedded and IOT devices
			2	Ability to use HADOOP and MAP reduce tools in the process of undertaking Analytics
			3	Ability to develop data Modelling, Structuring and Analytics using R Language
			4	Ability to conduct various kinds of analytics on the big data especially using text.
5	21EC2107	: AI, ANN Tools, and Applications	1	Understand the basics of Probability, statistics and its applications.
			2	To understand the applications and tools of AI
			3	To understand the concepts of AI searching techniques and ANN models
			4	To Implement AI and ANN Models for real time problems
6	21EC2208	Analog and Digital Communication	1	Analyze the linear and nonlinear modulation techniques
			2	Explore the basic digital communication systems and principles
			3	Analyzing various line coding procedures and signaling schemes to facilitate data communications.
			4	Applying the concepts of multiple access and various types of networks.
7	21EC2210	Data Networks and protocols	1	Introduction to Computer networks and Data Link Layer
			2	Network layer and Internetworking

			3	Transport layer, Session Layer, Presentation Layer and Application Layer
			4	Advanced Topics: Cryptography, Advancements in Application layer, Wireless LANs, Network Security
8	21IN2201	: Embedded Systems Design	1	Understand embedded systems components, design challenges and applications, application of program on chip peripherals for single purpose controller.
			2	Apply the different sensors, actuators (off chip peripherals) and communication protocols for developing embedded systems.
			3	Understand the software architectures, task communication, and identify tasks related issues in RTOS.
			4	Identify an architectural design of available technologies and solve the societal challenge using IoT.
9	21IN2202	: IoT Principles & Architecture	1	Understand the concepts of IoT Architecture, Reference model and IoT enabling technologies.
			2	Understand the logical design of IoT system and communication technologies.
			3	Understand IoT networking protocols and Authentication Protocols for IoT Application layer.
			4	Apply IoT protocols and programming concepts for real-world problems.
10	21IN3101:	Cloud Computing for IoT	1	Understand the process involved in sensing and moving data across the network to be stored in the clouds and extract the same for conducting the analytics.
			2	Understand the fundamentals related to cloud computing especially relating to data storage into cloud and retrieval of the same from the clouds.
			3	Ability to develop application for storing the sensed data on to the clouds
			4	Ability to deploy IoT device into cloud, Able to implement the communication between IoT device and cloud (Thingspeak, Azure and AWS)