Bharath
INSTITUTE OF HIGHER EDUCATION AND RESEARCH
(Declared as Deemed-to-be University under section 3 of UGC Act, 1956)
(Vide Notification No. F.9-5/2000 - U.3, Ministry of Human Resource Development, Govt. of India, dated 4th July 2002)

SCHOOL OF COMPUTING

DEPARTMENT OF INFORMATION TECHNOLOGY

VISION AND MISSION OF THE DEPARTMENT

VISION

- To be an excellence in education and research in Information Technology producing global scholars for improvement of the society

MISSION

- To provide sound fundamentals, and advances in Information Technology, Software Engineering, data Communications and Computer Applications by offering world class curriculum.
- To create ethically strong leaders and expert for next generation IT.
- To nurture the desire among faculty and students from across the globe to perform outstanding and impactful research for the benefit of humanity and, to achieve meritorious and significant growth.

B.Tech Information Technology

PROGRAM EDUCATIONAL OBJECTIVES (PEO)

The Program Educational Objectives (PEOs) of Information technology are listed below: The graduate after 3-5 years of programme completion will

PEO1: PREPARATION
To provide students with sound fundamental in Mathematical, Scientific and Engineering fundamentals necessary to formulate, analyse, and comprehend the fundamental concepts essential to articulate, solve and assess engineering problems and to prepare them for research & development and higher learning.

PEO2: CORE COMPETENCE
To apply critical reasoning, quantitative, qualitative, designing and programming skills, to identify, solve problems and to analyze the experimental evaluations, and finally making appropriate decisions along with knowledge of computing principles and applications and be able to integrate this knowledge in a variety of industry and inter-disciplinary setting.

PEO3: PROFESSIONALISM
To broaden knowledge to establish themselves as creative practicing professionals, locally and globally, in fields such as design, development, problem solving to production support in software industries and R&D sectors.

PEO4: SKILL
To provide better opportunity to become a future researchers / scientist with good communication skills so that they may be both good team-members and leaders with innovative ideas for a sustainable development.

PEO5: ETHICS
To be ethically and socially responsible solution providers and entrepreneurs in Computer Science and other engineering discipline.

PROGRAMME SPECIFIC OUTCOME

PSO 1	**Programming Design :** Design and develop algorithm for real life problems using latest technologies and solve it by using computer programming languages and database technologies .
PSO 2	**IT Business Scalable Design :** Analyze and recommend computing infrastructures and operations requirements and Simulate and implement information networks using configurations, algorithms, suitable protocol and security for valid and optimal connectivity.

PSO 3	**Intelligent Agents Design :** Design and execute projects for the development of data modeling, data analytics and knowledge representation in various domain.

PROGRAMME OUTCOMES

PO 1	**neering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2	**lem Analysis:** Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.
PO 3	**n/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.
PO 4	**luct 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 for complex problems.
PO 5	**ern Tool Usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
PO 6	**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.
PO 7	**ronment 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.
PO 8	**s:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO 9	**idual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO 10	**munication:** 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.
PO 11	**ct 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.

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DEPARTMENT OF INFORMATION TECHNOLOGY

B.Tech Information Technology – Regulation 2018

COURSE CODE	COs	1	2	3	4	5	6	7	8	9	10	11	12	PS 01	PS 02	PS 03
U18HSEN101.1	The student will be able to comprehend the text with clarity							3	2	2	3		2			
U18HSEN101.2	The capacity to read and listen will improve							3	2	2	3		2			
U18HSEN101.3	Writing technical report will be learnt properly							3	2	2	3		2			
U18HSEN101.4	Speaking skills will be acquired							3	2	2	3		2			
U18HSEN101.5	Overall communication skills will make them employable							3	2	2	3		2			
U18BSMA101.1	To apply both the limit definition and rules of differentiation to differentiate functions. Also they will have a basic understanding of Rolle‘s Theorem that is fundamental to application of analysis to Engineering problems.	3	3	2	2	1				2			2		2	
U18BSMA101.2	To apply definite integrals of algebraic and trigonometric functions using formulas and substitution. Also they will have a basic understanding of Beta and Gama functions.	3	3	2	2	1				3					2	
U18BSMA101.3	To apply differential and integral calculus to notions of curvature. Also apply differentiation to find maxima and minima of functions.	2	3	2	2	2				2					2	
U18BSMA101.4	To apply multiple integrals to compute area and volume over curves, surface and domain in two dimensional and three dimensional spaces.	3	3	2	2	1				1					2	
U18BSMA101.5	Identify Eigenvalue problems from practical areas using transformations; Diagonalising the matrix would render the Eigen values.	2	3	2	2	1				2			2		2	
U18BSPH101.1	Understand the basic concept of waves and lights	3							1	2			2		2	3
U18BSPH101.2	Understand the importance of Ultrasonic waves and Non-Destructive Testing	3							1	2					2	

U18BSPH101.3	Understand the propagation of light and geometrical optics	2							3	2			2		2	
U18BSPH101.4	Understand the optical phenomenon like interference diffraction and superposition of waves	3							1	2			2		2	
U18BSPH101.5	Understand the concept of laser and its applications	3							1	2			2		2	
U18BSCH101.1	To impart knowledge to the Students about the principles, water characterization, conversant with boiler feed water requirements and water treatment techniques.	3	2	2	1					2					2	
U18BSCH101.2	To make them understand the industrial importance of Phase rule and its applications to single and two component systems and appreciate the purpose and significance of alloys	3	2	2	1					2					2	
U18BSCH101.3	To make the students to be well versed with the principles of Conventional and non-conventional energy sources and energy storage devices.	3	2	2	1					2					2	
U18BSCH101.4	To make the students to have a deep knowledge of the Chemistry of Fuels and calorific value, manufacture of solid, liquid and gaseous fuels.	3	2	2	1					2					2	
U18BSCH101.5	To make them understand the Nano chemistry, Types of nanomaterials: Nano particles, Nano chemistry in biology and medicines.	3	2	2	1					2					2	
U18ESEE101.1	To gain knowledge regarding the various laws and principles associated with DC Circuits.	3		2						2		3	1		2	
U18ESEE101.2	To gain knowledge regarding fundamentals of AC circuits.	2		3						2		3			2	
U18ESEE101.3	To gain knowledge regarding electrical machines and transformers.	3		2						1		2			2	
U18ESEE101.4	To gain knowledge regarding various types of semiconductor devices and small signal amplifiers.	3		2						3		3	1		2	
U18ESEE101.5	To gain knowledge on principles of digital electronics systems.	3		2						2		2	2		2	
U18BSBT101.1	To understand the basic concepts of the cell and its structure	3								2						

U18BSBT101.2	To understand about biodiversity and its conservation	3								2						
U18BSBT101.3	To know the fundamentals of genetics and the immune system	3								2						
U18BSBT101.4	To create an awareness about human diseases	2								2						
U18BSBT101.5	To give a basic knowledge of the applications of transgenic	3								2						
U18BSPH2L2.1	To Understand the fundamental concept of optics	3		2						2					2	
U18BSPH2L2.2	To Understand the concept of production of ultrasonic waves	3		2						2			3		2	
U18BSPH2L2.3	To Understand the functions of semiconductor	3		2						2					2	
U18BSCH2L4.1	Students will able to analyze - hardness, Alkalinity, Dissolved oxygen, Chlorides in Water by Argentometric Method, Determination of Water of Crystallization and as well as estimation of Copper by EDTA method using volumetric analysis.	3		2						2						
U18BSCH2L4.2	Students will understand basic principle of spectrophotometric method	3		2						2						
U18BSCH2L4.3	Students will learn Conduct metric Titration of Strong Acid with Strong Base and Conduct metric Precipitation titration.	3		2						2						
U18BSCH2L4.4	Student will be able to analyze Determination of Molecular weight of a polymer by Viscosity Average Method	3		2						2						
U18BSCH2L4.5	Student will understand about pH measurements for Acid - alkali Titrations and rate of corrosion by weight loss method	3		2						2						
U18ESME1L2.1	Students will gain knowledge of the different manufacturing processes.	3		2						2					2	
U18ESME1L2.2	Students will be able to fabricate components with their own hands.	3		2						2					2	
U18ESME1L2.3	Students will gain practical knowledge of the dimensional accuracies and dimensional tolerances.	3		2						2					2	

U18ESME1L2.4	Students will be able to produce small devices of their interest.	3		2						2					2	
U18ESEE1L3.1	To handle basic electrical equipment and verify current and voltage law	3	3	2			1			2		3		3	3	2
U18ESEE1L3.2	To understand the steady-state and transient time-response of R-L, R-C, and R-L-C circuits	3	3	2			1			2		3	1	3	3	2
U18ESEE1L3.3	To understand domestic wiring procedures practically.	3	3	2			1			2		3		3	3	2
U18ESEE1L3.4	To analyze ac signal parameters using cathode ray oscilloscope and function generator	3	3	2			1			2		3	1	3	3	2
U18ESEE1L3.5	To understand all the fundamental concepts semiconductor Diode and Transistor	3	3	2			1			2		3	1	3	3	2
U18ESEE1L3.6	To understand all the fundamental concepts of logic Gates and Flip-Flaps	3	3	2			1			2		3	1	3	3	2
U18HSEN201.1	The student will acquire basic proficiency in English				2			3		2	3					
U18HSEN201.2	Reading and listening ability will improve.				2			3		2	3					
U18HSEN201.3	Comprehension techniques will develop.				2			3		2	3					
U18HSEN201.4	writing and speaking skills will be acquired				2			3		2	3		3			
U18HSEN201.5	Overall communication skills will make them employable.				2			3		2	3		3			
U18BSMA201.1	The mathematical tools for solution of differential equation that model physical process.	3	3			2				2					2	
U18BSMA201.2	To evaluate the line, surface and volume integrals using Green‘s, Stokes and Gauss Theorems and their verification.	3	3			2				2					2	
U18BSMA201.3	To understand the analytic functions, conformal mapping and complex integration and their applications.	3	3			2				2					2	
U18BSMA201.4	To evaluate real and complex integrals using the Cauchy‘s integral formula and Residue theorem.	3	3			2				2					2	
U18BSMA201.5	To apply the concept of Laplace Transformation in analysis and solve differential equations.	3	3			2				2			3		2	

U18BSPH202.1	Understand the difference between metals, semiconductors and insulators	3							1	2					2	
U18BSPH202.2	Understand the importance of doping to charge carrier density	3							1	2					2	
U18BSPH202.3	Understand the electrical transport in semiconductors	3							1	2					2	
U18BSPH202.4	Understand the difference between direct and indirect semiconductors	3							1	2					2	
U18BSPH202.5	Understand the concept of semiconductor optoelectronic devices.	3							1	2			1		2	
U18BSCH201.1	Master core concepts and methods from ecological and physical sciences and their application in environmental problem solving	3			2				2	2			1			
U18BSCH201.2	Appreciate concepts and methods from ecological and physical sciences and their application in environmental problem solving.	3			2				2	2			1			
U18BSCH201.3	Appreciate the ethical, cross-cultural, and historical context of environmental issues and the links between human and natural systems	3			3				2	1			1			
U18BSCH201.4	Understand the transnational character of environmental problems and ways of addressing them, including interactions across local to global scales	3			2				2	2			1			
U18BSCH201.5	Apply systems concepts and methodologies to analyze and understand interactions between social and environmental processes	3			3				2	2			3			
U18ESCS101.1	Develop algorithmic solutions to simple computational problems	3			2		1			2		3	2		3	
U18ESCS101.2	Demonstrate programs using simple Python statements and expressions.	3			2		1			2		3	2		3	
U18ESCS101.3	To gain knowledge regarding control flow and functions associated with python	3			2		1			2		3	2		3	
U18ESCS101.4	Use Python data structures – lists, tuples & dictionaries for representing compound data	3			2		1			2		3	2		3	

U18ESCS101.5	To gain knowledge on files, exception, modules and packages in Python for solving problems	3			2		1			2		3	2		3	
U18ESME101.1	Students will gain Exposure to engineering communication.	3			2					2						
U18ESME101.2	Students will learn standards of engineering graphics.	3			2					3						
U18ESME101.3	Students will get Exposure to basics of building construction	3			1					2						
U18ESME101.4	Students will get Exposure to computer-aided geometric design	3			2					1						
U18ESME101.5	Student will gain basic knowledge and Exposure to the visual aspects of Engineering Design.	3			2					2						
U18ESCS1L1.1	Write, test, and debug simple Python programs.	3		2						2			2		3	
U18ESCS1L1.2	Implement Python programs with conditionals and loops	3		2						2			2		3	
U18ESCS1L1.3	Develop Python programs step-wise by defining functions and calling them	3		2						2			2		3	
U18ESCS1L1.4	Use Python lists, tuples, dictionaries for representing compound data	3		2						2			2		3	
U18ESCS1L1.5	Read and write data from/to files in Python and to simulate using the packages Scilab, NumPy and Matplotlib	3		2						2			2		3	
U18BSMA304.1	Understand the notations various types of random variables and probability distributions.	3	2							2				3		
U18BSMA304.2	Apply the concepts of two dimensional random variables.		3				1						1	3		
U18BSMA304.3	Explain the concepts of random processes.	3				1					2		2	3		
U18BSMA304.4	Describe the basic concepts of queuing models				1					3	2		2	3		
U18BSMA304.5	Analyze the extended models in advanced queuing models.	3	2				1						3	3		
U18BSMA304.6	Apply probabilistic theory for real time problems.	3	2		1	1	1			3	2		3	3		
U18ESIT302.1	Understand the basic working of communication systems	3	2							2					2	

U18ESIT302.2	Apply Analog modulation techniques and their comparative analysis and applications suitability		3				1						1		2	
U18ESIT302.3	Evaluate process of modulation and demodulation, characterization and performance parameters of transmission channels	3				1					2		2		2	
U18ESIT302.4	Understand Analog to digital conversion and Digital data transmission, Multiplexing Techniques.				1					3	2		2		2	
U18ESIT302.5	Summarize the multiple access techniques used in satellite communication	3	2		3	3	2						3		2	
U18ESIT302.6	Outline the fibre optical system used in communication	3	2		3	3	2								2	
U18PCIT303.1	Analyze the modern and futuristic database applications based on size and complexity	3	2		3	1	3			3	3	2		3		
U18PCIT303.2	Apply queries using normalization criteria and optimize queries	3	1		3	1	3			3	3	2		3		
U18PCIT303.3	Understand the transactions concepts and concurrency	2	1		3	1	3			3	3	2		3		
U18PCIT303.4	Explain the indexing strategies in different database systems	2	2		3	1	3			3	3	2		3		
U18PCIT303.5	Discuss the key challenges of advanced database systems	2	2		3	3	3			3	3	2		3		
U18PCIT303.6	Evaluate how advanced databases differ from traditional databases	2	2		3	3	3			3	3	2		3		
U18PCIT304.1	Understand linear data structures linked list and their applications.	3	2		3		2				3				3	
U18PCIT304.2	Demonstrate the linear data structures such as stacks, queues and their applications.	2	2		3		2				3				3	
U18PCIT304.3	Apply the non-linear data structures such as trees, graphs in real time applications.	3	2		3		2				3		3		3	
U18PCIT304.4	Analyze the various searching techniques	3	2		3		2				3		3		3	
U18PCIT304.5	Evaluate the various sorting algorithms and hashing technique	2	2		3		2				3		3		3	

U18PCIT304.6	Describe the overview of hashing techniques	2	2		3		2				3		3		3	
U18PCIT305.1	Explain OOAD concepts and various UML diagrams	1	3		3	3	2			3					3	
U18PCIT305.2	Understand the object-oriented approach to analyze and select the appropriate design patterns	1	3		3	3	2			3					3	
U18PCIT305.3	Illustrate about domain models and conceptual classes	1	3		3	3	2			3					3	
U18PCIT305.4	Use Unified modeling Language notations to apply effective and efficient system design patterns.	1	3		3	3	2			3					3	
U18PCIT305.5	Formulate the problem and designing solutions for real time projects	1	3		3	3	2			3	3	3	3		3	
U18PCIT305.6	Compare and contrast the various testing techniques	1	3		3	3	2			3					3	
U18PCIT306.1	Understand the fundamental organization of computer system, operations and instructions.	3		3	3	2	3	1	3			3	1	3		
U18PCIT306.2	Design arithmetic and logic unit in computer architecture.	3		3	3	2	3	1	3			3	1	3		
U18PCIT306.3	Explain the concepts of pipelined execution and design control unit.	3		2	3	2	3	1	3			3	1	3		
U18PCIT306.4	Understand parallel processing architectures and GPU.	3		3	3	2	3	1	3			3	1	3		
U18PCIT306.5	Describe the various memory systems and its hierarchies.	2		3	3	2	3	1	3			3	3	3		
U18PCIT306.6	Demonstrate the different ways of communication with I/O devices	3		3	3	2	3	1	3			3	3	3		
U18PCIT3L1.1	Construct data definitions and manipulation commands.	2	3		3		1	1		3	3	3	3		3	
U18PCIT3L1.2	Design applications to test Nested and Join Queries	2	3		3		2	3		3	3	3	3		3	
U18PCIT3L1.3	Implement simple applications that use the concept of Views	2	3		3		3	3		3	3	3	3		3	

U18PCIT3L1.4	Design applications that require a Front-end Tool, ER Modelling	2	3		3		3	3		3	3	3	3		3	
U18PCIT3L1.5	Analyze the use of Tables, Cursors, Views, Functions, Procedures and Triggers	3	3		3		3	3		3	3	3	3		3	
U18PCIT3L1.6	Design and implement typical real time database applications	3	3		3		3	3		3	3	3	3		3	
U18PCIT3L2.1	Construct Java programs for simple applications that make use of classes	1	3		3	3	2			3	3	3	3		3	
U18PCIT3L2.2	Develop and implement Java programs for simple applications that make use of packages and interfaces.	1	3		3	3	2			3	3	3	3		3	
U18PCIT3L2.3	Implement array list using Java	1	3		3	3	2			3	3	3	3		3	
U18PCIT3L2.4	Design Java applications using generic programming, exception handling and multithreading	1	3		3	3	2			3	3	3	3		3	
U18PCIT3L2.5	Implement the concept of file processing in Java	1	3		3	3	2			3	3	3	3		3	
U18PCIT3L2.6	Develop real time applications using Java concepts	1	3		3	3	2			3	3	3	3		3	
U18PCIT3L3.1	Apply the concepts of linear data structures such as list, stacks, queues and linked list.	3	2		3		2				3				3	
U18PCIT3L3.2	Implement non-linear data structure operations	2	2		3		2				3				3	
U18PCIT3L3.3	Construct functions to implement Graph and Tree Traversal algorithms	3	2		3		2				3		3		3	
U18PCIT3L3.4	Design programs based on the concept of sorting and searching techniques	3	2		3		2				3		3		3	
U18PCIT3L3.5	Design and apply structures with Hashing techniques	2	2		3		2				3		3		3	
U18PCIT3L3.6	Identify the appropriate data structure for any given problem	2	3		3		2				3		3		3	
U18BSMA401.1	Define and analyze the fundamental Mathematical Concepts such as sets relations, and functions.	3	2	3	1		3	1	1	1	3	1		3		
U18BSMA401.2	Learn the steps in proportional and Predicate logic.	3	3		2	3	2		3	2		2	1	3		
U18BSMA401.3	Expose to the concept of recurrence relations, generating functions, group, and cyclic groups, subgroups.	3	2	1		2	2		2	2		2	1	3		

U18BSMA401.4	Define the terminologies of graph and develop the given problems as graph networks and solve with techniques of graph theory.	3	2	2		2	1	2		1	2	1		3		
U18BSMA401.5	Understand the terminologies of Boolean algebra and mathematical induction,	3	2		2		2	2	1	2	1	2	1	3		
U18BSMA401.6	Evaluate Boolean functions and simplify expressions using the properties of Boolean algebra.	3	2	2	2	2	2	2	1	2	1	2	1	3		
U18PCIT401.1	Acquire knowledge about functionalities of world wide web	1		3	2	2	2				2					3
U18PCIT401.2	Explore markup languages features and design interactive web pages using them	1		3	2	2	2				2					3
U18PCIT401.3	Experiment Client side validation using scripting languages	1		3	2	2	2				2		2			3
U18PCIT401.4	Implement Open source JavaScript library functions	1		3	2	2	2						2			3
U18PCIT401.5	Design front end web page and connect to the back end databases	1		3	2	2	2						2			3
U18PCIT401.6	Explain the functions of client and servers on Web.	1		3	2	2	2						2			3
U18PCIT402.1	Recall the fundamental components of a computer operating system, Basics of operating system principles and System calls. Define process state and scheduler. List mass storage devices. Recall the concepts of storage allocation strategies, files system and Linux System.	3	3	2	2						2			1		1
U18PCIT402.2	Describe, discuss, and explain the policies for scheduling, deadlocks, memory management, synchronization, system calls, file systems and virtualization concepts.		3	2	2						2			2		2
U18PCIT402.3	Demonstrate and execute basic system calls, Schedulers, Memory management systems, Virtual Memory and Paging systems.		3	2	2						2			2		2
U18PCIT402.4	Examine and Experiment the performance of scheduling algorithm, memory		3	2	2						2			2	2	2

	management strategies and disk storage structures															
U18PCIT402.5	Design and develop Linux multifunction server and Local network services	3				2							2	2		2
U18PCIT402.6	Develop Virtualization Concept in OS by setting Up Xen, VMware on Linux Host and Adding Guest OS	3		3		2	3		2				2	2		2
U18PCIT403.1	Explain the basic concept of Software engineering and Estimation models.	3	1							2	2	2	2	3		
U18PCIT403.2	Understand the concepts of software requirements, analysis and specification.	3	1							2	2	2	2	3		
U18PCIT403.3	Design various software models	3	1							2	2	2	2	3		
U18PCIT403.4	Understand the basic concepts of testing and its implementation.	3	1							2	2	2	2	3		
U18PCIT403.5	Implement and deploy the software.	3	1							2	2	2	2	3		
U18PCIT403.6	Apply the project management in software engineering tasks.	3	1							2	2	2	2	3		
U18ESIT404.1	Understand the basic concepts of Boolean algebra and to simplify the Boolean expression using K-Map and Tabulation techniques.		3	3						2	2					2
U18ESIT404.2	Demonstrate Boolean simplification techniques and to design a combinational hardware circuit.		3	3						2	2					2
U18ESIT404.3	Design and analyze given digital circuit – Synchronous sequential.	2	3	3						2	2					2
U18ESIT404.4	Experiment and analyze given digital circuit – Asynchronous sequential.	2	3	3						2	2					2
U18ESIT404.5	Describe memory and programmable logics.	2	2	2						2	2					2
U18ESIT404.6	Implement Application Specific Integrated Circuits	2	2	2						2	2					2
U18PCIT405.1	Understand basic concepts of computer network technology.	2			3	2					2			3		
U18PCIT405.2	Explain Data Communications System and its components.		1		2						2			1		
U18PCIT405.3	Classify the different types of network topologies and protocols.	2				3	3				2			3		

U18PCIT405.4	Discuss the layers of the OSI model and TCP/IP and to explain the function(s) of each layer.	1	1	2	2						2			1		
U18PCIT405.5	Understand the different types of network devices and their functions.	1		3		1					2			2		
U18PCIT405.6	Apply signal Encoding techniques		1								2			1		
U18PCIT4L1.1	Use knowledge to implement client server applications.			2	2					2	2				1	1
U18PCIT4L1.2	Develop skills in UNIX socket programming.			2	2					2	2				1	
U18PCIT4L1.3	Develop skills to use simulation tools.			2	2					2	2				2	L
U18PCIT4L1.4	Analyse the performance of network protocols and network traffic.			2	2						2				1	
U18PCIT4L1.5	Analyse the performance of various network tools and network programming			2	2						2				2	
U18PCIT4L1.6	Implement encryption and decryption techniques			2	2						2				1	
U18PCIT4L2.1	Understand the basic concepts of the internet and insights of internet programming.		1	3	2	2					2					3
U18PCIT4L2.2	Demonstrate the important HTML tags for designing static pages.		1	3	2	2					2					3
U18PCIT4L2.3	Design web pages using Cascading Style Sheets.		1	3	2	2				2	2					3
U18PCIT4L2.4	Demonstrate HTML web pages accessing database using JDBC.		1	3	2	2				2	2					3
U18PCIT4L2.5	Select web application development software tools i.e. Ajax, PHP and XML etc.		1	3	2	2				2	2		2			3
U18PCIT4L2.6	Identify the environments currently available on the market to design web sites.		1	3	2	2				2	2		2			3
U18PCIT4L3.1	Demonstrate the basics of operating systems like kernel, shell, types and views of operating systems.	2	2	2						2			2		2	
U18PCIT4L3.2	Implement the various CPU scheduling algorithms and remove deadlocks.	2	3	3						2			2		2	
U18PCIT4L3.3	Analyse various memory management techniques and concept of thrashing	2	3	3						2			2		2	
U18PCIT4L3.4	Explain disk management and disk scheduling algorithms for better utilization of external memory.	2	3	3									2		2	

U18PCIT4L3.5	Evaluate file system interface	2	3	3		2						2	2		2	
U18PCIT4L3.6	Evaluate protection and security Mechanisms	2	3	3		2						2	2		2	
U18PCIT501.1	Explain the basic concepts of data warehouse, business analysis and OLAP system	1	1	2	3	3	2			3	3		2	3		
U18PCIT501.2	Implement suitable pre-processing and visualization techniques for data analysis	1	1	2	3	3	2			3	3		2	3		
U18PCIT501.3	Demonstrate the frequent pattern and association rule mining techniques for data analysis	1	1	2	3	3	2			3	3		2	3		
U18PCIT501.4	Interpret appropriate classification and clustering techniques for data analysis	1	1	2	3	3	2			3	3		2	3		
U18PCIT501.5	Understand the roles that data mining plays in various fields and manipulate different data mining techniques	1	1	2	3	3	2			3	3		2	3		
U18PCIT501.6	Apply data mining algorithms to build analytical applications	1	1	2	3	3	2			3	3		2	3		
U18PCIT502.1	Explain the basics concepts of mobile telecommunication systems.	2	2		3	3	1			3	1		2		2	
U18PCIT502.2	Describe generations of telecommunication systems in wireless network.	2	2		3	3	1			3	1		2		2	
U18PCIT502.3	Examine the functionality of MAC, network layer and to Identify a routing protocol for a given Ad hoc network	2	2		3	3	1			3	1		2		2	
U18PCIT502.4	Classify the functionality of Transport and Application layers	2	2		3	3	1			3	1		2		2	
U18PCIT502.5	Sketch a mobile application using android/blackberry/ios/Windows SDK	2	2		3	3	1			3	1		2		2	
U18PCIT502.6	Identify the limitations of 2G and 2.5G wireless mobile communication and use design of 3G and beyond mobile communication systems	2	2		3	3	1			3	1		2		2	
U18PCIT503.1	Classify the basic concepts of AI and Problem Solving Approach to Typical AI problems	3	2		3	3			2	3	2	1	2		3	

U18PCIT503.2	Operate the apt agent strategy to solve a given problem	3	2		3	3			2	3	2	1	2		3		
U18PCIT503.3	Design software agents to solve a problem	3	2		3	3			2	3	2	1	2		3		
U18PCIT503.4	Explain applications for NLP that use Artificial Intelligence	3	2		3	3			2	3	2	1	2		3		
U18PCIT503.5	Describe the architecture for Intelligent Agents and agent communication	3	2		3	3			2	3	2	1	2		3		
U18PCIT503.6	Demonstrate fundamental understanding of the history of artificial intelligence (AI) and its foundations.	3	2		3	3			2	3	2	1	2		3		
U18PCIT504.1	Create automata, regular expression for any pattern.	3	3	2	1	1			1	3	2	2	2	3			
U18PCIT504.2	Design Context free grammar for any construct.	3	3	2	1	1			1	3	2	2	2	3			
U18PCIT504.3	Construct Turing machines for regular language and non regular languages.	3	3	2	1	1			1	3	2	2	2	3			
U18PCIT504.4	Select the decidable problems NP Hard Problems	3	3	2	1	1			1	3	2	2	2	3			
U18PCIT504.5	Identify the concepts of normal forms and Programming Techniques for TM	3	3	2	1	1			1	3	2	2	2	3			
U18PCIT504.6	Demonstrate advanced knowledge of formal computation and its relationship to languages	3	3	2	1	1			1	3	2	2	2	3			
U18PCIT5L1.1	Demonstrate data mining techniques and methods to large data sets.	1	1	2	3	3	2			3	3		2		3		
U18PCIT5L1.2	Compare and contrast the various classifiers use Data Mining Tools	1	1	2	3	3	2			3	3		2		3		
U18PCIT5L1.3	Select association rules, Classification algorithms	1	1	2	3	3	2			3	3		2		3		
U18PCIT5L1.4	Implement K-Means Clustering, one hierarchical clustering algorithm	1	1	2	3	3	2			3	3		2		3		
U18PCIT5L1.5	Operate case Study on text mining or any commercial application	1	1	2	3	3	2			3	3		2		3		
U18PCIT5L1.6	Execute the knowledge retrieved through solving problems	1	1	2	3	3	2			3	3		2		3		
U18PCIT5L2.1	Implement data handling in MATLAB environment and to solve simple matrix problems.	2	2	1	3	3			1	3	1	1	2		3		

U18PCIT5L2.2	Operate built-in toolboxes and be familiar with arithmetic, logical and relational operations on matrix	2	2	1	3	3			1	3	1	1	2		3	
U18PCIT5L2.3	Design to vector and matrix operations and be familiar with the MATLAB GUI and basic tool boxes	2	2	1	3	3			1	3	1	1	2		3	
U18PCIT5L2.4	Recognize Knowledge in Data visualization and plotting	2	2	1	3	3			1	3	1	1	2		3	
U18PCIT5L2.5	Report with Random number generation – Monte carlo methods	2	2	1	3	3			1	3	1	1	2		3	
U18PCIT5L2.6	Formulate and control simple plot and user-interface graphics objects in MATLAB.	2	2	1	3	3			1	3	1	1	2		3	
U18PCIT601.1	Implement grid computing techniques to solve large scale scientific problems.			1	3	3	1				1		2			2
U18PCIT601.2	Understand and apply the concept of virtualization.			1	3	3	1				1		2			2
U18PCIT601.3	Use the grid and cloud tool kits.			1	3	3	1				1		2			2
U18PCIT601.4	Apply the security models in the grid and the cloud environment.			1	3	3	1				1					2
U18PCIT601.5	Discuss about the basic concepts of Trust models for Grid security environment.			1	3	3	1				1					2
U18PCIT601.6	Describe the basic concepts of Trust models for Cloud Infrastructure security.			1	3	3	1				1					2
U18PCIT602.1	Apply effective dialog For Human Computer Interaction.	1	2	2										2		
U18PCIT602.2	Implement HCI for common individuals and persons with disabilities.	1	2	2							3		3	2		
U18PCIT602.3	Describe the importance of user feedback.	1	2	2							3		3	2		
U18PCIT602.4	Explain the HCI implications for designing multimedia/ ecommerce/ e-learning web sites.	1	2	2										2		
U18PCIT602.5	Design and develop appropriate user interface.	1	2	2										2		
U18PCIT602.6	Develop context based user experience models.	1	2	2										2		
U18PCIT603.1	Understand the concepts of Big Data framework.		2	2	3	3					2			3		2
U18PCIT603.2	Apply different ways of Data Analysis.		2	2	3	3					2			3		2
U18PCIT603.3	Apply stream data model.		2	2	3	3					2			3		2

U18PCIT603.4	Implement different data mining techniques.		2	2	3	3							2	3		2
U18PCIT603.5	Understand the technologies Map Reduce-Hadoop, MapR, Hive,NoSQL for big data analytics		2	2	3	3							2	3		2
U18PCIT603.6	Demonstrate visualization techniques.		2	2	3	3							2	3		2
U18PCIT6L1.1	Understand single node and multi-node Hadoop Clusters	2		2	3	3					2			3		
U18PCIT6L1.2	Develop Map Reduce programs.	2		2	3	3					2			3		
U18PCIT6L1.3	Implement different data modeling techniques.	2		2	3	3					2			3		
U18PCIT6L1.4	Implement different data mining techniques.	2		2	3	3							2	3		
U18PCIT6L1.5	Experiment the data using plotting framework.	2		2	3	3							2	3		
U18PCIT6L1.6	Demonstrate and execute application tools-Hbase, Mongodb, PIG.	2		2	3	3							2	3		
U18PCIT6L2.1	Develop a new Web Service for Calculator.		2	1	3										1	2
U18PCIT6L2.2	Execute New OGSA-Compliant Web Service.		2	1	3										2	1
U18PCIT6L2.3	Use Apache Axis and develop a Grid Service.		2	1	3										1	2
U18PCIT6L2.4	Demonstrate Applications using Java Or C/C++ Grid APIs		2	1	3										1	1
U18PCIT6L2.5	Develop Secured Applications using Basic Security Mechanisms available In Globus Toolkit.		2	1	3										2	2
U18PCIT6L2.6	Implement a Grid Portal, where user can submit a job and get the result. Implement it with and without GRAM Concept.		2	1	3										1	2
U18EEIT6L3.1	Develop inter personal skills and be an effective goal oriented team player.						1		2	3	3	1	3		2	
U18EEIT6L3.2	Communicate effectively through verbal/oral communication, creative thinking and improve the listening skills.						1		2	3	3	1	3		2	
U18EEIT6L3.3	Write precise briefs or reports and technical documents.						1		2	3	3	1	3		2	
U18EEIT6L3.4	Participate in group discussion / meetings / interviews and prepare & deliver presentations						1		2	3	3	1	3		2	
U18EEIT6L3.5	Set goals to become an effective individual, self-motivation.						1		2	3	3	1	3		2	

U18EEIT6L3.6	Gain the knowledge of team work; develop Inter-personal relationships, conflict management and leadership quality.						1		2	3	3	1	3		2	
U18PCIT70 1.1	Understand the various protocols and standards of wireless communications.	2	1	1	1	1					2				3	2
U18PCIT70 1.2	Describe about the different wireless WAN architectures.	3	2	2	2	1					2				3	3
U18PCIT70 1.3	Describe the protocols for mobile network layer and routing in mobile ad-hoc network.	2	1	1	1	1					2				3	2
U18PCIT70 1.4	Illustrate the TCP enhancements in mobile transport layer for wireless protocols.	2	1	1	1	1					2				3	2
U18PCIT70 1.5	Demonstrate the latest 3G/4G And Wi-MAX networks and its architecture.	3	2	2	2	1					2				3	3
U18PCIT70 1.6	Explain the 4G technologies and its applications.	2	1	1	1	1					2				3	2
U18PEIT011.1	Implement fundamental image processing techniques required for computer vision	3	2	1	1	2	3						3	3		
U18PEIT011.2	Perform shape analysis, Implement boundary tracking techniques, Apply chain codes and other region descriptors	1	2	1	1	1							3	3		
U18PEIT011.3	Apply Hough Transform for line, circle, and ellipse detections	3	2	2	3	3				2			2	3		
U18PEIT011.4	Apply 3D vision techniques	3	2	2	3	3				2		2	2	3		
U18PEIT011.5	Implement motion related techniques	3	2	3	3	3	3			2		2	3	3		
U18PEIT011.6	Develop applications using computer vision techniques	3	2	3	3	3	3			2		2	3	3		
U18PEIT012.1	Describe the concept of network architectures and applications of adhoc and wireless sensor networks.	3	2											3		
U18PEIT012.2	Learn the different types of MAC protocols for adhoc wireless networks.	3	3	2	1									3		
U18PEIT012.3	Design routing protocols for adhoc wireless networks considering protocol design issues.	3	3	2	1									3		
U18PEIT012.4	Explain the architecture and routing concepts in Wireless Sensor Networks.	3	2											3		

U18PEIT012.5	Understand about MAC protocols for Wireless Sensor Networks.	3	3	2	1	1	3	1					2	3		
U18PEIT012.6	Illustrate the issues of routing in Wireless Sensor Networks and evaluate the QoS related performance measurements.	3	3	1	1	1	1	1					1	3		
U18PEIT013.1	Understand the basic concepts of linear programming	3	2	2	2					2			2		3	
U18PEIT013.2	Learn the advancements in linear programming techniques	3	2	2	2					2			1		3	
U18PEIT013.3	Describe the different non-linear programming techniques	3	2	2	2					2			2		3	
U18PEIT013.4	Apply interior point methods to solve linear and non-linear convex optimization problems	3	2	2	2					2			2		3	
U18PEIT013.5	Formulate multistage decision problem and dynamic programming.	3	2	2	2					2			3		3	
U18PEIT013.6	Apply optimization techniques for real time problems..	3	2	2	2					2			2		3	
U18PEIT014.1	Understand the purpose of visualization in general and visual analytics in particular			1	2		1			2		1	3	2		2
U18PEIT014.2	Describe the collection of visualization and analysis techniques	2	3	1	2		1			2	1		3	2		2
U18PEIT014.3	Explain the concepts and techniques for visualizing data process	2	3	1	2		1			2	1		3	2		2
U18PEIT014.4	Develop applications using interactive data visualization tools	2	3	1	2		1			2	1		3	2		2
U18PEIT014.5	The Students will be able to understand the techniques for Attacking and defending visualization systems	2	3	1	2		1			2	2	1	3	2		2
U18PEIT014.6	Identifying the vulnerabilities and attacks and thus create security visualization system.	2	3	1	2		1			2	2	1		2		2
U18PEIT015.1	Gain Knowledge about the historical highlights of health care and biomedical information system.	2		1	2		1			2	2	2	3	3		

U18PEIT015.2	Describe the overview of computer hardware used in the health care Information system	2		1	2		1			2	2	2	3	3		
U18PEIT015.3	Learn about the concept of hospital Information system and automating the medical records.	2		1	2		1			2	2	2	3	3		
U18PEIT015.4	Develop skills in the concepts of visual programming.	2	3	1	2		1			2	2	2	3	3		
U18PEIT015.5	Design and test the web based multimedia based health care information system	2	3	1	2		1			2	2	2	3	3		
U18PEIT015.6	Acquire the skills for integrating inter and intra hospital information system.	2		1	2		1			2	2	2	3	3		
U18PEIT016.1	Design test cases suitable for a software development for different domains.	3		2						3		1		3		
U18PEIT016.2	Apply different test case design strategies.	3		2			1			3		1	1	3		
U18PEIT016.3	Execute various levels of testing.	3		2		1				3	2	1	2	3		
U18PEIT016.4	Document the test design, test plan, test reports and project management.	3		2	1					3	2	1	2	3		
U18PEIT016.5	Acquire the skills required for a test specialist.	3		2			1			3	2	1	3	3		
U18PEIT016.6	Describe the concepts of software test automation, test metrics and measurements.	3		2	1	1	1			3	2	1	3	3		
U18PEIT021.1	Understand the basic concepts of asynchronous transfer mode and wireless LAN	2	3	1	2		1			2		1	3	3		
U18PEIT021.2	Analyze the concept of congestion control and traffic management.	2	3	1	2		1			2	1		3	3		
U18PEIT021.3	Study about TCP and ATM congestion control	2	3	1	2		1			2	1		3	3		
U18PEIT021.4	Understand techniques involved to support real-time traffic and congestion control.	2	3	1	2		1			2	1		3	3		
U18PEIT021.5	Understand different levels of Quality of Service (QoS) to different applications.	2	3	1	2		1			2		1	3	3		
U18PEIT021.6	Implement protocols for QoS Support RSVP	2	3	1	2		1			2	1	1	3	3		
U18PEIT022.1	Outline Natural Language Processing tasks in syntax, semantics, and pragmatics.			1	2		1			2		1	2	2		
U18PEIT022.2	Explain Morphology and Part of Speech Tagging.	2	3	1	2		1			2	1		2	2		

U18PEIT022.3	Describe how syntax parsing techniques can be used.	2	3	1	2		1			2	1		2	2		1
U18PEIT022.4	Explain the use of semantic analysis methods.	2		1	2		1			2	1		2	2		1
U18PEIT022.5	Relate a few applications of Natural Language Processing.	2		1	2		1			2		1	2	2		1
U18PEIT022.6	Simulate elementary case studies of NLP in Syntactical and Semantical Aspects	2	1	1	2		1			2	1	1	2	2		1
U18PEIT023.1	Develop semantic web related applications.	2	3	2	2		1		2		1	1		3		
U18PEIT023.2	Represent knowledge using ontology.	2	3	2	2		1		2		1			3		
U18PEIT023.3	Extract and mine communities in web social networks	2	3	2	2		1		2	2	1			3		
U18PEIT023.4	Predict human behavior in social web and related communities	2	3	2	2		1		2	2	1		3	3		
U18PEIT023.5	Analyze the security issues and privacy policies in Social networks	2	3	2	2		1		2	2	1	1	3	3		
U18PEIT023.6	Visualize social networks in real time applications	2	3	2	2		1		2	2	1	1	3	3		
U18PEIT024.1	Understand the concept and role of analytics in business.	2	3	2	2		1			2		1	3	3		2
U18PEIT024.2	Use business intelligence to formulate and solve business problems and to support managerial decision making.	2	3	2	2					2	1		3	3		2
U18PEIT024.3	Describe the data integration and data modeling techniques.	2	3	2	2					2	1		3	3		2
U18PEIT024.4	Learn the concept of enterprise reporting, statistical techniques and data mining algorithms in analytics,	2	3	2	2					2	1		3	3		2
U18PEIT024.5	Implement analytics in real time applications-bank management, general management, marketing, finance, operations and supply chain management.	2	3	2	2		1			2	1	2	3	3		2
U18PEIT024.6	Apply analytic principles and techniques to a business problem	2	3	2	2		1			2	1	2	3	3		2
U18PEIT025.1	Explain the features and challenges of mobile devices, native app development frameworks, hybrid app development frameworks	2	2	1		1	2			3				3		

U18PEIT025.2.	Learn the intricacies of user interfaces and implement the user interfaces for mobile applications.	2	2	1		1	2			3	2			3		
U18PEIT025.3	Design the mobile applications considering the resource constraints in mobile devices.	2	2	1		1	2			3	2	3	3	3		
U18PEIT025.4	Design a secure mobile application based on user requirements	2	2	1		1	2			3	2	3	3	3		
U18PEIT025.5	Select appropriate framework and tool for developing mobile applications based on the problem requirements	2	2	1		1	2			3	2	3	3	3		
U18PEIT025.6	Design and develop mobile applications for societal and environmental problems	2	2	1		1	2			3	2	3	3	3		
U18PEIT026.1	Understand the basic concepts of wavelet and its types			1	2		1			2		1	3	3		
U18PEIT026.2	Analyze multi resolution concepts and discrete wavelet transform.	2	3							2	1		3	3		
U18PEIT026.3	Design the different wavelet system.	2	3							2	1		3	3		
U18PEIT026.4	Describe the properties and applications of wavelet families.	2	3	1	2					2	1		3	3		
U18PEIT026.5	Analysis of phonocardiogram signals, EEG signals, Speech enhancement for hearing aids and de-noising technique.	2	3	1	2		1			2		1	3	3		
U18PEIT026.6	Implement wavelet applications in real time.	2	3	1	2		1			2	1	1	3	3		
U18PEIT031.1	Explain computer forensics and its techniques	2		1		2				2				2		
U18PEIT031.2	Learn about evidence collection and applying forensic tools for crime investigations.	2	2	1	2	2	2		2	2			3	2		
U18PEIT031.3	Analyze and validate forensics data.	2	2	1	2	2	2		2	2			3	2		
U18PEIT031.4	Explore the fundamentals of ethical hacking	2		1		2				2				2		
U18PEIT031.5	Execute penetration technique using standard hacking tools in an ethical manner	2	2	1	2	2	2		2	2			3	2		
U18PEIT031.6	Learn about reconnaissance, protocols, windows hacking, hacking web technologies, wireless networks and mobile platforms	2	2	1	2	2	2			2			3	2		

U18PEIT033.1	Understand different data mining tasks and the functionalities of Weka/R tools.	3	3	3	3	2					2	2	2		3	
U18PEIT033.2	Explain knowledge representation and metrics.	3		2	3	3					2		2		3	
U18PEIT033.3	Understand and implement the different Classification techniques.		1	3				`			2	2	2		3	
U18PEIT033.4	Demonstrate and implement unsupervised learning techniques.	3	2		2	3					2	2	2		3	
U18PEIT033.5	Understand ensemble models.	2	2	2		2					2		2		3	
U18PEIT033.6	Demonstrate case studies for analyzing the performance of the data models.		1	2	3	3					2	2	2		3	
U18PEIT032.1	Understand the basic concept and framework of virtual reality.			1	2		1			2		1	3		3	
U18PEIT032.2	Describe the multiple modals of input and output interface in virtual reality.	2	3	1	2		1			2	1		3		3	
U18PEIT032.3	Explain the fundamentals of computer graphics.	2	3	1	2		1			2	1		3		3	
U18PEIT032.4	Apply display advanced techniques in computer graphics.	2		1	2		1			2	1		3		3	
U18PEIT032.5	Explore about the environment modeling in virtual reality.	2		1	2		1			2		1	3		3	
U18PEIT032.6	Learn about the fundamentals of Augmented Reality and implement software development tools in Virtual Reality	2	3	1	2		1			2	1	1	3		3	
U18PEIT034.1	Understand the fundamentals and concept of Machine learning.			1	2		1			2		1	3	3		2
U18PEIT034.2	Apply probabilistic techniques for real time application in uncertain environment.	2	3	1	2		1			2	1		3	3		2
U18PEIT034.3	Explain the concepts of supervised and unsupervised learning techniques.	2	3	1	2		1			2	1		3	3		2
U18PEIT034.4	Design and implement probabilistic graphical models in real time applications.	2	3	1	2		1			2	1	2	3	3		2
U18PEIT034.5	Use machine learning tools to implement typical clustering algorithms for different types of applications.	2	3	1	2		1			2	1	2	3	3		2

U18PEIT034.6	Explore the different advanced learning techniques.	2	3	1	2		1			2	1	2	3	3		2
U18PEIT035.1	Implement and apply evolutionary algorithms.			1	2		1			2		1	3	2		
U18PEIT035.2	Explain cellular automata and artificial life.	2	3	1	2		1			2	1		3	2		
U18PEIT035.3	Implement and apply neural systems.	2	3	1	2		1			2	1		3	2		
U18PEIT035.4	Explain developmental and artificial immune systems.	2		1	2		1			2	1		3	2		
U18PEIT035.5	Describe behavioral systems and to implement in collective intelligence systems.	2		1	2		1			2	1	1	3	2		
U18PEIT035.6	Design bio inspired solutions for real world problems.	2	3	1	2		1			2	1	1	3	2		
U18PEIT036.1	Understand the concepts and principles of software configuration management.	3		2						3		1		3		
U18PEIT036.2	Explain about configuration Management and planning.	3		2			1			3		1	1	3		
U18PEIT036.3	Define the relation between software configuration management and the software development.	3		2		1				3	2	1	2	3		
U18PEIT036.4	Select configuration items at appropriate levels of the product structure	3		2	1					3	2	1	2	3		
U18PEIT036.5	Describe the configuration management activities like control, status accounting, auditing and verification.	3		2	1		1			3		1	3	3		
U18PEIT036.6	Implement technical Software Configuration Management System in real time.	3		2	1	1	1			3	2	1	3	3		
U18PEIT041.1	Articulate the main concepts, key technologies, strengths and limitations of cloud computing.			1	2		1			2		1	3	2		
U18PEIT041.2	Learn the key and enabling technologies that help in the development of cloud.	2	3	1	2		1			2	1		3	2		
U18PEIT041.3	Develop the ability to understand and use the architecture of compute and storage cloud, service and delivery models.	2	3	1	2		1			2	1		3	2		

U18PEIT041.4	Explain the core issues of cloud computing such as resource management and security.	2		1	2		1			2	1		3	2		
U18PEIT041.5	Be able to install and use current cloud technologies.	2		1	2		1			2	1	1	3	2		
U18PEIT041.6	Evaluate and choose the appropriate technologies,algorithms and approaches for implementation and use of cloud.	2	3	1	2		1			2	1	1	3	2		
U18PEIT042.1	Understand the notions of the intelligent agent and multi			1	2		1			2		1	3	3	1	1
U18PEIT042.2	Describe Reactive and Hybrid Agents	2	3	1	2		1			2	1		3	3	1	1
U18PEIT042.3	Identify the basic application areas of intelligent agents	2	3	1	2		1			2	1		3	3	1	1
U18PEIT042.4	Apply bargaining and augmentative techniques.	2		1	2		1			2	1		3	3	1	1
U18PEIT042.5	Explore the basics of the agent oriented languages.	2		1	2		1			2		1	3	3	1	1
U18PEIT042.6	Design multi agent systems for real time problems.	2		1	2		1			2	1	1	3	3		
U18PEIT043.1	Utilize various Application Programming Interface (API) services to collect data from different social media sources such as YouTube, Twitter, and Flickr.	3		2					2	3		1		3		
U18PEIT043.2	Process the collected data, primarily structured using methods involving correlation, regression, and classification to derive insights about the sources and people who generated that data.	3		2			1		2	3		1	1	3		
U18PEIT043.3	Perform social network analysis to identify important social actors, subgroups (i.e., clusters), and network properties in social media sites such as Twitter, Facebook, and YouTube.	3		2		1			2	3	2	1	2	3		
U18PEIT043.4	Apply best practices in Search Engine.	3		2	1				2	3	2	1	2	3		
U18PEIT043.5	Design ethical principles to the use of web and social media data.	3		2			1		2	3		1	3	3		
U18PEIT043.6	Build social networks	3		2	1	1	1		2	3	2	1	3			
U18PEIT044.1	Acquire a fundamental knowledge of digital image processing with Fourier transforms.			1	2		1			2		1	3	3		

U18PEIT044.2	Learn about the image sampling, Modeling and quantization techniques.	2	3	1	2		1			2	1		3	3		
U18PEIT044.3	Explain the image enhancement, its process and types of filters used in image processing.	2	3	1	2		1			2	1		3	3		
U18PEIT044.4	Apply image analysis, classification and reconstruction techniques in images.	2		1	2		1			2	1		3	3		
U18PEIT044.5	Acquire the skills in the transmission of medical images.	2		1	2		1			2		1	3	3		
U18PEIT044.6	Design real time applications for processing medical images.	2	3	1	2		1			2	1	1	3	3		
U18PEIT045.1	Explore the basic components of multimedia.			1	2		1			2		1	3	2		
U18PEIT045.2	Analyze audio and video compression techniques.	2	3	1	2		1			2	1		3	2		
U18PEIT045.3	Apply text and image compression techniques.	2	3	1	2		1			2	1		3	2		
U18PEIT045.4.	Evaluate the basic concepts of Voice Over Internet Protocol.	2		1	2		1			2	1		3	2		
U18PEIT045.5	Understand the concepts of multimedia networking and its applications.	2		1	2		1			2		1	3	2		
U18PEIT045.6	Design interactive real time multimedia applications.	2	3	1	2		1			2	1	1	3	2		
U18PEIT046.1	Understand the fundamentals of agile methodology.	3		2					2	3		1				2
U18PEIT046.2	Explore the various agile processes for software development.	3		2			1		2	3		1	1			2
U18PEIT046.3	Demonstrate knowledge management in Agile methodology.	3		2		1			2	3	2	1	2			2
U18PEIT046.4	Describe the benefits and pitfalls of working in an Agile team and to understand Agile development, deployment and testing.	3		2	1				2	3	2	1	2			2
U18PEIT046.5	Apply agile approach to quality assurance.	3		2			1		2	3		1	3			2
U18PEIT046.6	Design applications using Agile approach in Global Software Development	3		2	1	1	1		2	3	2	1	3			2
U18PEIT051.1	Explain the concept of IoT.			1	2		1			2		1	3	3	1	1
U18PEIT051.2	Analyze various protocols for IoT.	2	3	1	2		1			2	1		3	3	1	1

U18PEIT051.3	Design a PoC of an IoT system using Rasperry Pi/Arduino	2	3	1	2		1			2	1		3	3	1	1
U18PEIT051.4	Apply data analytics and use cloud offerings related to IoT.	2		1	2		1			2	1		3	3	1	1
U18PEIT051.5	Analyze applications of IoT in real time scenario	2		1	2		1			2		1	3	3	1	1
U18PEIT051.6	Implement Industrial IoT applications	2	3	1	2		1			2	1	1	3	3		
U18PEIT052.1	Identify problems that are amenable to solution by Artificial Intelligence methods.			1	2		1			2		1	3	3		2
U18PEIT052.2	Select appropriate Artificial Intelligence methods to solve a given problem.	2	3	1	2		1			2	1		3	3		2
U18PEIT052.3	Formalize a given problem in the language/framework of different Artificial Intelligence methods.	2	3	1	2		1			2	1		3	3		2
U18PEIT052.4	Represent knowledge, design intelligent agents and apply the suitable Artificial Intelligence algorithms for problem solving and reasoning.	2		1	2		1			2	1		3	3		2
U18PEIT052.5	Design and carry out an empirical evaluation of different Artificial Intelligence algorithms	2		1	2		1			2		1	3	3		2
U18PEIT052.6	Learn the concepts of problem solving, reasoning, planning, natural language understanding, computer vision and machine learning and design real time Artificial Intelligence applications	2	3	1	2		1			2	1	1	3	3		2
U18PEIT053.1	Understand the analysis of Variance (ANOVA) or Analysis of Covariance (ANCOVA)	3	2	2						3		1			2	2
U18PEIT053.2	Analyze and interpret data collected from factorial designs.	3	2	2			1			3		1	1		2	2
U18PEIT053.3	Use the multiple linear regression (MLR) procedures to compute partial and semi- partial correlation analyses and interpret the results	3	2	2		1				3	2	1	2		2	2
U18PEIT053.4	Infer data from a prediction study using one criterion variable and multiple predictor variables.	3	2	2	1					3	2	1	2		2	2

U18PEIT053.5	Interpret ANOVA, ANCOVA, and MLR results reported in published reports of research.	3	2	2			1			3		1	3		2	2
U18PEIT053.6	Evaluate the reliability and validity of a measuring (or survey) instrument.	3	2	2			1			3		1	3		2	2
U18PEIT054.1	Explain the mathematical, statistical and computational challenges of building neural networks			1	2		1			2		1	3	3		2
U18PEIT054.2	Understand the concepts of Machine Learning	2	3	1	2		1			2	1		3	3		2
U18PEIT054.3	Explore the concepts of deep learning	2	3	1	2		1			2	1		3	3		2
U18PEIT054.4	Apply dimensionality reduction techniques in deep learning applications	2		1	2		1			2	1		3	3		2
U18PEIT054.5	Describe the optimization and generalization for deep networks	2		1	2		1			2		1	3	3		2
U18PEIT054.6	Design real time applications using deep learning techniques	2		1	2		1			2		1	3	3		2
U18PEIT055.1	Understand the quality management processes			1	2		1			2		1	3	3	3	3
U18PEIT055.2	Describe the various activities of quality assurance, quality planning and quality control	2	3	1	2		1			2	1		3	3	3	3
U18PEIT055.3	Define the importance of standards in the quality	2	3	1	2		1			2	1		3	3	3	3
U18PEIT055.4	Discuss the needs for software process assessment and improvement	2		1	2		1			2	1		3	3	3	3
U18PEIT055.5	Explore the different software quality factors models	2		1	2		1			2		1	3	3	3	3
U18PEIT055.6	Apply tools, techniques and methodologies to ensure software quality	2		1	2		1			2		1	3	3	3	3
U18PEIT056.1	Understand the Software Architectural perspective and how it differs from lower- level design.	3		2						3		1		3		
U18PEIT056.2	Describe the integration in Software Development process.	3		2			1			3		1	1	3		
U18PEIT056.3	Apply the architectural structures for shared information systems.	3		2		1				3	2	1	2	3		
U18PEIT056.4	Develop architectural approaches from basic requirements.	3		2	1					3	2	1	2	3		

U18PEIT056.5	Define the architectural frameworks within product line development.	3		2			1			3		1	3	3		
U18PEIT056.6	Apply tools for software architectural designs.	3		2			1			3		1	3	3		
U18PEIT061.1	Translate fluently between the major mathematical representations.	3	3		2		3			1				2		
U18PEIT061.2	Implement basic quantum algorithms.					3		2	3	2	3		2	2		
U18PEIT061.3	Understand quantum decoherence in systems for computation.	1	1		1		2					3		2		
U18PEIT061.4	Apply eigenvalue estimation approach to order finding.	3	3		2	2	3	2	2	2			1	2		
U18PEIT061.5	Describe the quantum error correction techniques.	3			2	2	2	2	1		2	2		2		
U18PEIT061.6	Designing fault tolerant quantum computing systems	3			2	2	2	2	1		2	2		2		
U18PEIT062.1	Understand the basics concepts of real-time systems.	3	3		2		1						3	2		
U18PEIT062.2	Generate a high-level analysis document based on requirements specifications.	3	3			3		1	3	2	3			2		
U18PEIT062.3	Describe the basic multi-task scheduling algorithms for periodic, aperiodic.	3	3	1			2					3		2		
U18PEIT062.4	Apply fault tolerant routing for the real time communication and communications media.	3	3		2	2	3	1	2	2			2	2		
U18PEIT062.5	Implement reliability evaluation techniques to identify software error models.	3	3		2	2	2	2			2	2		2		
U18PEIT062.6	Design real time systems by interacting with the environment.	3	3		2	2	2	2			2	2		2		
U18PEIT063.1	Equip with the practical skills necessary to build computer vision applications.	3	3		2								2	3		
U18PEIT063.2	Describe the object, scene recognition and categorization from images.					3		2		2	3			3		
U18PEIT063.3	Describe basic methods of computer vision related to multi-scale representation, edge detection and detection of other primitives, stereo, motion and object recognition.						2					3	2	3		

U18PEIT063.4	Explore the different illumination and color models.	3	2		2	2	3	2		2				3			
U18PEIT063.5	Implement motion related techniques.	3			2	2	2	2			2	2	3	3			
U18PEIT063.6	Develop applications using computer vision techniques.	3			2	2	2	2			2	2	3	3			
U18PEIT064.1	Understand the basics Business Intelligence.	3	3		2	3	3						1	2		2	
U18PEIT064.2	Learn Standard Reports, Interactive Analysis and Ad Hoc Querying.							2	3	2	3			2		2	
U18PEIT064.3	Understand Efficiency Measures and CCR Model.						2					3	2	2		2	
U18PEIT064.4	Understand business Intelligence applications.	3	2		2	2		2	2	2				2		2	
U18PEIT064.5	Design Business Intelligence Applications for real time cases.	3			2	2	2	2			2	2	3	2		2	
U18PEIT064.6	Predict the future of Business Intelligence and explore the emerging technologies	3	2		2	2	2	2			2	2	3	2		2	
U18PEIT065.1	Understand the fundamentals of Information Entropy and channel capacity for various channels	3	2	1	1								2	2	2		
U18PEIT065.2	Compare various data and voice source coding techniques	3	1	1	1							2		2	2		
U18PEIT065.3	Inspect error detection and describe the different error control coding techniques	3	2	2	2									2	2		
U18PEIT065.4	Apply the different compression techniques for real time applications.	3	2	2	2					2		2	2	2	2		
U18PEIT065.5	Describe the concepts of Audio and video coding techniques.	3	2	2	2					2			2	2	2		
U18PEIT065.6	Implement the different coding techniques to design applications in multimedia communication systems.	3	2	2	2					2			2				
U18PEIT066.1	Describe the modern view of AI as the study of agents that receive percepts from the Environment and perform actions.	3	3	2	2					3	2		2	3			
U18PEIT066.2	Demonstrate awareness of informed search and exploration Methods.	2	3	2	2					2	2		2	3			

U18PEIT066.3	Explain about AI techniques for knowledge representation and planning.	2	3	2	2				2	2	2			3		
U18PEIT066.4	Apply probabilistic/statistical approaches to act in uncertain environment.	3	3	2	2					2	2		2	3		
U18PEIT066.5	Understand the different learning approaches and make the machine to perform human-like tasks.	2	3	2	2				2	2	2	2	2	3	2	
U18PEIT066.6	Prepare for future by integrating Artificial Intelligence in real time.	3	3	2	2					2	2	2	2	3	2	

COURSECODE	STATEMENT	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	Pso 3
U20PYBJ01.1	Identify the effect of charge dynamics	2	3			3			1			3	3		3	
U20PYBJ01.2	Analyze the electromagnetic induction	2	3			3			1			3	3		3	
U20PYBJ01.3	Applyand demonstrate quantum mechanicsto basic physical problems	2	3			3			1			3	3		3	
U20PYBJ01.4	Apply ray propagation and optical effects	2	3			3			1			3	3		3	
U20PYBJ01.5	Identify the applications of lasers and optical fiber	2	3			3			1			3	3		3	
U20PYBJ01.6	Apply the concepts ofelectromagnetic theory and mechanics in real timeapplications	2	3			3			1			3	3		3	
U20PYBJ02.1	Identify the principle of Mechanics	2	3			3			1			3	3		3	
U20PYBJ02.2	Determine the resultants of force systems acting on rigid bodies	3			1						2		3	2	2	

U20PYBJ02.3	Establish and demonstrate the equations of equilibrium for a rigid body	3			1						2		3	2	2	
U20PYBJ02.4	Analyze the internal forces in engineering structures composed of simple trusses	3			1						2		3	2	2	
U20PYBJ02.5	Apply the concepts of stress and strain in different bodies	3			1						2		3	2	2	
U20PYBJ02.6	Apply the concepts of mechanics and mechanics of solids in real timeapplications	3			1						2		3	2	2	
U20CYBJ01.1	Analyze atomic, molecular orbitals of organic, inorganicmolecules to identifystructure, bonding, molecular energy levels	3			1						2		3	2	2	
U20CYBJ01.2	Utilize the principles of Spectroscopic technique in analysingand explaining thestructure and properties of molecules	3		3							2					
U20CYBJ01.3	Rationalize bulk properties usingthermodynamic consideration and periodic properties of elements	3		3							2					
U20CYBJ01.4	Utilize the concept of thermodynamics inunderstanding andexecuting thermodynamically driven chemicalreactions	3		3							2					
U20CYBJ01.5	Perceive the importance of stereochemistry molecules applied in pharmaceutical industries in synthesizingorganic	3		3							2					
U20CYBJ01.6	Utilize the concepts in chemistry for technological and apply inquantitative analyses and estimations for physical and chemical characteristics	3		3							2					

U20MABT01.1	Apply the Knowledge of Matrices , EigenValues and Eigen Vectors Reduce to Quadratics form in problems involving science and Engineering	3				3			1					3	2	

U20MABT01.2	Gain familiarity in the knowledge ofmaxima and minima , Jacobian and Taylor series and apply them to the problems involving Science and Engineering	3				3			1					3	2	
U20MABT01.3	GainKnowledge in solution of Differential Equations and its applications inEngineering problems	3				3			1					3	2	
U20MABT01.4	Gain the knowledge of Radius, Center, Envelope and Circle of curvature and apply them in the problems involving inScience and Engineering	3				3			1					3	2	
U20MABT01.5	Gain the knowledge of convergence anddivergence of series using different test and apply sequences and series in the problem involving in science and Engineering	3				3			1					3	2	
U20MABT02.1	Gain familiarity in evaluation of multiple integrals using Change of variables	3		2							2				3	
U20MABT02.2	Gain knowledge in applying the techniques of vector calculus in problemsinvolving science and Engineering in solving ODE	3		2							2				3	

U20MABT02.3	Many Engineering problems can be transformed in to problems involving ODE, PDE and Integrals. Laplace transform method and Complex methodscan be used for solving them .		2		1		3			3			3		2	
U20MABT02.4	Gain knowledge in fundamentals ofcomplex analytic functions and its properties		2		1		3			3			3		2	
U20MABT02.5	Gain knowledge in evaluating improperintegrals using Residue Theorem involving problems in science and Engineering		2		1		3			3			3		2	

U20LEHJ01.1	Identify types, modes, channels and barriers of communication. Distinguish different speech sounds, pronounce correctly.	3				3			1					3	2
U20LEHJ01.2	Identify, rectify the errors in the use ofgrammar and vocabulary. Improve Listening and writing skills.	3				3			1					3	2
U20LEHJ01.3	Develop a topic idea into a cohesive paragraph with examples. Improvethefluency of speaking skills.	3				3			1					3	2
U20LEHJ01.4	Develop ideas into logical and coherent essays. Understand better the Workplace culture.	3				3			1					3	2
U20LEHJ01.5	Identify the steps involved in writing an academic project report. List and practiceskills need for making a presentation.	3				3			1					3	2
U20LEHJ01.6	Build listening, speaking, reading, and writing abilities in English, to interact with English speaking.	3				3			1					3	2
U20MBHT01.1	Observe and evaluate the variousinfluencing factors on the currentpractices of the organization and management	3		2				2			2		1		3
U20MBHT01.2	Use the techniques and tools of planning and make prudent decisions	3		2				2			2		1		3
U20MBHT01.3	Identify how organizations adapt to uncertain environment, identify techniques managers use to influence andcontrol the internal environment	3		2				2			2		1		3
U20MBHT01.4	Apply and execute management goals	3		2				2			2		1		3
U20MBHT01.5	Manage people and deal with cultural and ethnical issues	3		2				2			2		1		3
U20MBHT01.6	Utilize the basic fundamentals of managing organizations and utilize	3		2				2			2		1		3

	optimum resources														
U20CYHJ01			2		3				2				2		2
U20CYHT01.1	To Study the nature and facts about environment		2			3			1		3			2	3
U20CYHT01.2	To find and implementing scientific, economic and political solutions to environmental problems		2			3			1		3			2	3
U20CYHT01.3	To study the interrelationship between living organism and environment		2			3			1		3			2	3
U20CYHT01.4	To appreciate the importance of environment by assessing its impact on the human world; envision the surrounding environment, its functions and its value		2			3			1		3			2	3
U20CYHT01.5	To study the dynamic processes and understand the features of the earth's interior and surface (Understand)		2			3			1		3			2	3
U20CYHT01.6	To Study the integrated themes and biodiversity, natural resources, pollution control and waste management		2			3			1		3			2	3
U20MEEJ01.1	Identify engineering graphics. Draw objects like lines, planes and solids in perspective & orthographic projections	3		2			1				2			2	3
U20MEEJ01.2	Draw projection of solid like prism, cylinder, pyramid and cone inclined in general positions, obtain auxiliary views	3		2			1				2			2	3
U20MEEJ01.3	Draw projection of combination of solids made out of primitives, draw the sectionof solids, create building plans	3		2			1				2			2	3
U20MEEJ01.4	Create 3D part models. Develop its surfaces with solid modelling software for assembly of parts	3		2			1				2			2	3

U20MEEJ01.5	Evaluate the assembly of parts including interference of parts. Create 2D drawingsof assembly of parts	3		2			1				2			2	3
U20MEEJ01.6	Draw graphics of engineering problems of point, line, plane, solids, in perspective and orthographic projections	3		2			1				2			2	3
U20EEEJ01.1	Analyse basic theory utilized in electrical circuits	2	3			3			1			3	3		3
U20EEEJ01.2	Outline the working principle of direct current and alternative current machinesuch as transformers, motors and generators.	2	3			3			1			3	3		3
U20EEEJ01.3	Experimentwith basic electronics devices. Compare and contrast their uses and constructional features.	2	3			3			1			3	3		3
U20EEEJ01.4	Identify the different types of transducers used in measurement of various physicalparameters	2	3			3			1			3	3		3
U20EEEJ01.5	Apply binary logic and Boolean expressions for digital circuit design, list the elements in a communication systems.	2	3			3			1			3	3		3
U20EEEJ01.6	Implementation of basic electrical circuits, theorem and draw the characteristics of semiconductor devices and transducers.	2	3			3			1			3	3		3
U20MEEJ02.1	Characterize building materials and its applications	3			1						2		3	2	2
U20MEEJ02.2	Understand the building components and its applications	3			1						2		3	2	2

U20MEEJ02.3	a) Identify different transportation systems, water and waste water treatmentand its applications b)Identify the working of IC engines and understand the need of various auxiliary systems	3			1						2		3	2	2

U20MEEJ02.4	List the basic components and analyze the working of major power plants	3			1						2		3	2	2
U20MEEJ02.5	Identify manufacturing process of welding	3			1						2		3	2	2
U20MEEJ02.6	Apply the basic knowledge of Civil and Mechanical Engineering	3			1						2		3	2	2
U20MEET01.1	Apply knowledge of mathematics, science for engineering applications and Identify, formulate, solve engineering problems	3				3			1					3	2
U20MEET01.2	Determine the resultant force and moment for a given system of forces	3				3			1					3	2
U20MEET01.3	Analyze planar and spatial systems to determine the forces in members of trusses, frames and problems related to friction	3				3			1					3	2
U20MEET01.4	Determine the equilibrium of a particle in space using principle of laws of mechanics. Compute the equilibrium of rigid bodies in two dimensions and in three dimensions	3				3			1					3	2
U20MEET01.5	Calculate the motion characteristics of a body subjected to a given force system	3				3			1					3	2
U20MEET01.6	Solve the problems using equation of motions and analyze impact of elastic bodies on collision	3				3			1					3	2
U20CSEJ01.1	Identify methods to solve a problem through computer programming. List the basic data types and variables in C	3				3			1					3	2
U20CSEJ01.2	Apply the logic operators and expressions. Use loop constructs and recursion. Use array to store and retrieve data.	3				3			1					3	2
U20CSEJ01.3	Analyze programs that need storage and form single and multidimensional arrays. Use pre-processor constructor in C	3				3			1					3	2

U20CSEJ01.4	Create user defined functions for mathematical and other logical operations.Use pointer to address memory and data.	3				3			1					3	2
U20CSEJ01.5	Create Structures and unions to representdata constructs. Use files to store and retrieve data	3				3			1					3	2
U20CSEJ01.6	Apply programming concepts to solve problem. Learn about how C programming can be effectively used forsolutions	3				3			1					3	2

U20ITCJ01.1	Demonstrate the basics of data structures and various algorithms	1	3	-	3	1				1	1		3	3	2	2
U20ITCJ01.2	Experiment with Various Linear ADTs - Lists, stacks, queues and its applications.	2	3	1	2	1				2	1		3	3	2	2
U20ITCJ01.3	Construct the trees with its representations and methods.	2	3	2	3	1				2	1		3	3	2	2
U20ITCJ01.4	Compare various sorting algorithms, properties, and its methods	2	3	2	3	1				2	1		3	3	2	2
U20ITCJ01.5	Interpret hashing concepts and its techniques	1	3	-	3	1				1	1		3	3	2	2
U20ITCJ01.6	Justify the non-linear data structures graph with its various methods.	3	3	2	3					2	1		3	3	2	2
U20ITCT01.1	Identify and select suitable Process Model for the given problem and have a thorough understanding of various Software Life Cycle models.	3	1	-	-	-	2	1	-	2	-	-	1	-	-	3
U20ITCT01.2	Explain the requirements of the given software project and produce requirement specifications.	3	1	-	-	-	2	1	-	2	-	-	1	-	-	3
U20ITCT01.3	Discover the knowledge of object-oriented modeling concepts and design methods with a clear emphasis on Unified Modeling Language for a moderately realistic object-oriented system.	3	1	-	-	-	2	1	-	2	-	-	1	-	-	3
U20ITCT01.4	Manipulate various software architectures, including frameworks and design patterns, when developing software projects.	3	3	3	-	1	1	1	1	1	2	-	1	2	3	-
U20ITCT01.5	Summarize the software project using various Testing techniques.	3	3	3	2	3	1	1	3	1	3	3	1	2	3	-
U20ITCT02.1	Write precise and accurate mathematical definitions of objects in graph theory.	3	3	2										2		

U20ITCT02.2	Use mathematical definitions to identify and construct examples and to distinguish examples from non-examples.	3	3	3										2		
U20ITCT02.3	Validate and critically assess a mathematical proof.	3	3	2										2		
U20ITCT02.4	Use a combination of theoretical knowledge and independent mathematical thinking in creative investigation of questions in graph theory.	3	3	3										3		
U20ITCT02.5	Reason from definitions to construct mathematical proofs.		3	3										3		
U20ITCJ02.1	Design simple web pages using markup languages like HTML and XHTML.	3	-	-	-	-	-	-	-	-	-	-	-	3	-	-
U20ITCJ02.2	Gain knowledge of client-side scripting, validation of forms and AJAX programming.	3	2	-	-	-	-	-		-	-	-	-	3	-	-
U20ITCJ02.3	Understand server-side scripting with PHP language.	3	2	-	2	-	-	-	-	-	-	-	-	3	-	-
U20ITCJ02.4	Understand what XML is and how to parse and use XML Data with Java.	-	2	3	-	-	-	-	-	-	-	-	-	3	-	-
U20ITCJ02.5	To introduce Server-side programming with Java Servlets and JSP.	-	2	2	2	-	-	-	-	-	-	-	-	3	-	-
U20ITCJ02.6	Represent web data using XML and develop web pages using JSP.	-	2	3	-	-	-	-	-	-	-	-	-	3	-	-
U20ITCJ07.1	Illustrate the basic concepts, functionalities and structure of Operating System	3	3	-	-	3								3		
U20ITCJ07.2	Describe the concepts of process, threads, process scheduling and to clarify interprocess communication, memory management, file and disk management Methods.	3	3	-	-	2								3	3	

U20ITCJ07.3	Solve the process synchronization, mutual exclusion, deadlock and memory management problems	3	3	-	-	2								3		
U20ITCJ07.4	Implement the algorithms for process and disk scheduling and memory management.	3	3	-	-	2								3		
U20ITCJ07.5	Analyze algorithms of process and disk scheduling and memory management.	-	3	-	-	2								3		
U20ITCJ07.6	Evaluate process synchronization, process scheduling, memory management and disk scheduling algorithms.	-	-	-	3	2								3		
U20ITCJ03.1	Explain data communication system, components and the purpose of layered architecture.	3	3	2										3	3	
U20ITCJ03.2	Illustrate the functionality of each layer of OSI and TCP/IP reference model.	3	3	3										3	3	
U20ITCJ03.3	Explain the data link layer and network layer protocols.	3	3	2	3									3	3	
U20ITCJ03.4	Outline the functions of transport layer protocols.	3	3	3	3									3	3	
U20ITCJ03.5	To Summarize application layer protocols.		3	3										3	3	
U20ITCJ03.6	To Understand various application Protocols.		1	2	3									2	2	
U20ITCT08.1	Describe various layers of IoT protocol stack and describe protocol functionalities.	3	3	2										3	3	
U20ITCT08.2	Evaluate efficiency trade-offs among alternative communication models for an efficient IoT application design.	3	3	3										3	3	
U20ITCT08.3	Comprehend advanced IoT applications and technologies from basic of IoT.	3	3	2	3									3	3	
U20ITCT08.4	Understanding working principles of various sensor for different IoT platforms.	3	3	3	3									3	3	

U20ITCT08.5	Estimate the cost of hardware and software for low cost design IoT applications.	-	3	3										3	3	
U20ITCT08.6	Compare various applications business models of different domains.	-	1	2	3									2	2	
U20ITCT06.1	Apply the good programming skills to formulate the solutions for computational problems.	3	3	2	-	-	-	-	-	-	-	-	-	3	3	-
U20ITCT06.2	Design and develop solutions for informed and uninformed search problems in AI.	3	3	3	-	-	-	-	-	-	-	-	-	3	3	-
U20ITCT06.3	Utilize advanced package like NLP for implementing artificial intelligence.	3	3	2	3	-	-	-	-	-	-	-	-	3	3	-
U20ITCT06.4	Understand the concepts of deep learning algorithms	3	3	3	3	-	-	-	-	-	-	-	-	3	3	-
U20ITCT06.5	Apply the advanced deep learning techniques in real world application	-	3	3	-	-	-	-	-	-	-	-	-	3	3	-
U20ITCT03.1	Develop model for ERP for large projects	3	3	2												3
U20ITCT03.2	Develop model for E-commerce architecture for any application.	3	3	3												3
U20ITCT03.3	Describe the advantages, strategic value, and organizational impact of utilizing an ERP system for the management of information	3	3	2	3											3
U20ITCT03.4	Demonstrate a working knowledge of how data and transactions are integrated in an ERP system to manage the sales order process, production process, and procurement process.	3	3	3	3											3
U20ITCT03.5	Summarize organizational opportunities and challenges in the design system within a business scenario.		3	3												3
U20ITCT04.1	Enumerate the basic concepts of human, computer interactions	3	3											3		

U20ITCT04.2	Illustrate the processes of human computer interaction life cycle	2	2											2		
U20ITCT04.3	Explain design the various interaction design models	3	2											3		
U20ITCT04.4	Illustrate the interface design standards/guidelines for evaluating the developed interactions	2	2											2		
U20ITCT04.5	Classify product usability evaluations and testing methods	2	2											2		
U20ITCT05.1	Discuss the necessity of quantum computing to real time solutions	2	3	2	2									1	2	
U20ITCT05.2	Describe the mathematical foundation of quantum information processing	2	3	2	2									1	2	
U20ITCT05.3	Identify the building blocks of the quantum programs	2	3	2	2									1	2	
U20ITCT05.4	Understand the algorithms of quantum applications	2	3	2	2									1	2	
U20ITCT05.5	Apply the major quantum toolkits to the real time applications	2	3	2	2									2	2	
U20ITST01.1	Demonstrate intermediate and advanced web development practices.	3	2	2		3								3		
U20ITST01.2	Prepare a fully functioning website and deploy on a web server.	3	2	2		3								3		
U20ITST01.3	Produce JavaScript applications that transition between states.	3	2	3		3								3		
U20ITST01.4	Identify mobile strategies and design for multiple operating systems.	3	2	2		3								3		
U20ITST01.5	Differentiate trends in multi-device implementation.	3	2	2		3								3		
U20ITST02.1	Build and maintain reliable, scalable, distributed systems with Apache Hadoop.	3	2	2		3								3		

U20ITST02.2	Understand Spark framework and explore various ML tools for data processing.	3	2	2		3								3		
U20ITST02.3	Apply HIVEQL, PIG techniques to solve big data queries.	3	2	3		3								3		
U20ITST02.4	Understand conventional SQL query language and NoSQL, query MongoDB.	3	2	2		3								3		
U20ITST02.5	Visualize big data to perform decision making in real world problems.	3	2	2		3								3		
U20ITST03.1	Analyze and evaluate the cyber security needs of an organization.								3	2	2					
U20ITST03.2	Determine and analyze software vulnerabilities and security solutions to reduce the risk of exploitation.								3	2	2					
U20ITST03.3	Measure the performance and troubleshoot cyber security systems.								3	2	3					
U20ITST03.4	Implement cyber security solutions and use of cyber security, information assurance, and cyber/computer forensics software/tools.								3	2	2					
U20ITST03.5	Comprehend and execute risk management processes, risk treatment methods, and key risk and performance indicators								3	2	2					
U20ITST05.1	Recognize the characteristics of Machine Learning techniques that enable to solve real world problems	2	1	-	-	2	2	3	2							2
U20ITST05.2	Recognize the characteristics of machine learning strategies	2	1	-	-	2	2		2							2
U20ITST05.3	Apply various supervised learning methods to appropriate problems	3	2	1	1			3	3							3
U20ITST05.4	Identify and integrate more than one technique to enhance the performance of learning		2	1	1		3		3							3

U20ITST05.5	Create probabilistic and unsupervised learning models for handling unknown pattern	3	2	1	1	3	3	3								3
U20ITST06.1	Understand the basic concepts of Block Chain Technologies.	2	1	-	-	2	2	3	2							2
U20ITST06.2	Explain the functional /operational aspects of Cryptocurrency Ecosystem.	2	1	-	-	2	2		2							2
U20ITST06.3	Develop application using Ethereum.	3	2	1	1			3	3							3
U20ITST06.4	Compute models for Block Chain Technology.		2	1	1		3		3							3
U20ITST06.5	Illustrate Blockchain with IoT and track the emerging trends in Blockchain.	3	2	1	1	3	3	3								3
U20ITCJ04.1	Gain knowledge about the concepts of Data Mining.	3				2									3	
U20ITCJ04.2	Illustrate Association rule mining technique.	3	2												3	
U20ITCJ04.3	Use various Classification algorithms.	3	2												3	
U20ITCJ04.4	Summarize knowledge on the concepts of Cluster Analysis.		3												3	
U20ITCJ04.5	Identify Outlier analysis techniques.	3	2		2										3	
U20ITCJ04.6	Perform the Data mining concepts in different domains.		3			2									3	
U20ITCT05.1	Discuss the necessity of quantum computing to real time solutions	2	3	2	2									1	2	
U20ITCT05.2	Describe the mathematical foundation of quantum information processing	2	3	2	2									1	2	
U20ITCT05.3	Identify the building blocks of the quantum programs	2	3	2	2									1	2	
U20ITCT05.4	Understand the algorithms of quantum applications	2	3	2	2									1	2	

U20ITCT05.5	Apply the major quantum toolkits to the real time applications	2	3	2	2									2	2	
U20ITCJ05.1	Explain the basic concept and role of DBMS in an organization	3												3		
U20ITCJ05.2	Illustrate the design principles for database design, ER model and normalization	3	2											3		
U20ITCJ05.3	Demonstrate the basics of query evaluation and heuristic query optimization techniques	3	2		2									3		
U20ITCJ05.4	Apply Concurrency control and recovery mechanisms for the desirable database problem		2	3										3		
U20ITCJ05.5	Compare the basic database storage structure and access techniques		3	2	2									3		
U20ITCJ05.6	Implement the database system with the fundamental concepts of DBMS		2	3		2								3		
U20ITST07.1	Understand Structure and execution of Scripting Languages.	2	1	-	-	2	2	3	2	2	2	2	2	2	3	2
U20ITST07.2	Identify and apply suitable programming paradigm for a given computing web application.	2	1	-	-	2	2	3	2	2	2	2	2	2	3	2
U20ITST07.3	Comprehend the differences between typical scripting languages and typical system and application programming languages.	3	2	1	1	3	3	3	3	3	3	3	3	3	3	3
U20ITST07.4	Gain knowledge of the strengths and weakness of Perl, TCL and Ruby; and select an appropriate language for solving a given problem.	3	2	1	1	3	3	3	3	3	3	3	3	3	3	3
U20ITST07.5	Gain knowledge of the strengths and weakness of Perl, TCL and Ruby; and select an appropriate language for solving a given problem.	3	2	1	1	3	3	3	3	3	3	3	3	3	3	3

U20ITST04.1	To understand the concept of cloud computing.	3	2	2		3								3		
U20ITST04.2	To appreciate the evolution of cloud from the existing technologies.	3	2	2		3								3		
U20ITST04.3	To have knowledge on the various issues in cloud computing.	3	2	3		3								3		
U20ITST04.4	To be familiar about storages and services.	3	2	2		3								3		
U20ITST04.5	To appreciate the emergence of cloud as the next generation computing paradigm.	3	2	2		3								3		
U20ITST08.1	Understanding geometric modelling and Virtual environment	-	1	2	3									2	2	
U20ITST08.2	Study about Virtual Hardware and Software	3	3	2	-	-	-	-	-	-	-	-	-	3	3	-
U20ITST08.3	Develop Virtual Reality applications	3	3	3	-	-	-	-	-	-	-	-	-	3	3	-
U20ITCT07.1	To understand encoding and decoding of digital data streams.	3	2	2		3								3		
U20ITCT07.2	To introduce methods for the generation of these codes and their decoding techniques.	3	2	2		3								3		
U20ITCT07.3	To have a detailed knowledge of compression and decompression techniques.	3	2	3		3								3		
U20ITCT07.4	To introduce the concepts of multimedia communication.	3	2	2		3								3		
U20ITCJ06.1	Recall the Digital Image Fundamentals and Explain Image Transform K1 and K2	2	1	-	-	2	2	3	2	2	2	2	2	2	3	2
U20ITCJ06.2	Implement the basic image processing algorithm or techniques	2	1	-	-	2	2	3	2	2	2	2	2	2	3	2
U20ITCJ06.3	Summarize the image Restoration using Degradation Model,Algebric Approach,Inverse Filtering,Least Mean	3	2	1	1	3	3	3	3	3	3	3	3	3	3	3

	Square Filters, and Constrained Least Squares Filters-K2															
U20ITCJ06.4	Illustrate wavelets multi-resolution processing and different image compression techniques-k4	3	2	1	1	3	3	3	3	3	3	3	3	3	3	3
U20ITCJ06.5	Demonstarte the Image segmentation and Morphological Image processing – k3	3	2	1	1	3	3	3	3	3	3	3	3	3	3	3
U20ITPI02.1	develop capability to acquire and apply fundamental principles of engineering	3	3	3	3	3	-	3	3	3	3	3	3	-	-	-
U20ITPI02.2	become updated with all the latest changes in technological world	3	3	3	3	3	-	3	3	3	3	3	3	-	-	-
U20ITPI02.3	make deep connections between ideas	3	3	3	3	3	-	3	3	3	3	3	3	-	-	-
U20ITPI02.4	learn to take creative risks	3	3	3	3	3	-	3	3	3	3	3	3	-	-	-
U20ITPI02.5	be ready for the creative economy also engage in iterative thinking and divergent thinkin	3	3	3	3	3	-	3	3	3	3	3	3	-	-	-
U20ITPR01.1	understand problem pertaining to various industry relevant issues	3	3	3	3	3	3	-	3	3	3	3	3	-	-	-
U20ITPR01.2	apply their expertise to provide a suitable long-term solution to industry problems	3	3	3	3	3	3	-	3	3	3	3	3	-	-	-
U20ITPR01.3	impart his/her specialization knowledge in addressing issues pertaining to the society	3	3	3	3	3	3	-	3	3	3	3	3	-	-	-
U20ITPR01.4	recommend with suitable justification, by comparing with various standards and regulations	3	3	3	3	3	3	-	3	3	3	3	3	-	-	-
U20ITPR01.5	compile the output in a scientific way and present it to scientific community	3	3	3	3	3	3	-	3	3	3	3	3	-	-	-
U20ITPR02.1	develop capability to acquire and apply fundamental principles of engineering	3	3	3	3	3	-	3	3	3	3	3	3	-	-	-
U20ITPR02.2	become updated with all the latest changes in technological world	3	3	3	3	3	-	3	3	3	3	3	3	-	-	-

U20ITPR02.3	make deep connections between ideas	3	3	3	3	3	-	3	3	3	3	3	3	-	-	-
U20ITPR02.4	learn to take creative risks	3	3	3	3	3	-	3	3	3	3	3	3	-	-	-
U20ITPR02.5	be ready for the creative economy also engage in iterative thinking and divergent thinking	3	3	3	3	3	-	3	3	3	3	3	3	-	-	-