CO-PO-PSO Mapping 2021-22 Term-I BE Computer

CLASS	NAME OF THE SUBJECT	CO	COURSE OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
SE	Mathematics – III	817301.1	Solve field problems in engineering involving Ordinary differential equations using Laplace Transform.	1	2													
		817301.2	Apply concept of Fourier and Z-transform to solve field problems in engineering	1	3													
		817301.3	Formulate and solve problems involving random variables.	2			3											
		817301.4	Apply statistical methods for analyzing experimental data.	2	1		2											
		817301.5	Understand basic concept statistics, probability distribution and test of significance	1	2	3		2	2									
		817301		**1.4**	**2**	**3**	**2.5**	**2**	**2**									
SE	Signals and Systems	817302.1	Demonstrate the ability to represent signals mathematically in continuous time and discrete time, and in frequency domain.	3	2	2		1										
		817302.2	Understand the use of numerical method to analyze digital signal processing.	2	3	2		1										
		817302.3	Understand Discrete Fourier Transform (DFT) and properties.	3	2	2		1										
		817302.4	Analyze discrete time systems using Laplace and Z – transform.	3	2	2												
		817302.5	Basic Understanding of state space analysis of system.	3	2	1		1										
		817302		**2.8**	**2.3**	**1.8**		**1**										
SE	Analog Electronic Circuits	817303.1	To categorize and calculate the DC and AC parameters of BJT / FET.	3		1												
		817303.2	To describe and solve the frequency analysis of BJT.	1														
		817303.3	To decide and formulate the various classes of operation of power amplifier.	2	1	1												
		817303.4	To predict and classify the different configurations of feedback amplifiers.	3		2												
		817303.5	To identify and analyze the different open loop and close loop applications of OP-Amp.	2		1			1									
		817303		**2.2**	**1**	**1.2**			**1**									
SE	Discrete Mathematics	817304.1	Formulate the given logic sentence it in terms of predicates, quantifiers, and logical connectives	2	1	1	1	1	2	1		1		1		2	2	1
		817304.2	Formulate real life problems in terms of set theory concepts.	2	1	1		1		1		1		1		2	1	1
		817304.3	Analyze the solution using deductive logic and prove the solution based on logical inference for given problem	2	2		1			1		1		1	2	1		

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		817304.4	Describe given mathematical problem according to its algebraic structure	3		3				1		1			2	3	1	1
		817304.5	Analyze the given problem as graph networks and solve with techniques of graph theory.															
		817304		**2.3**	**1.3**	**1.7**	**1**	**1**	**2**	**1**	**0**	**1**	**0**	**1**	**2**	**2**	**1.33**	**1**
SE	Organizational Behavior	817305.1	Explain organizationbehaviour			2	2	2	2	2	3		2	3	2	2	2	2
		817305.2	Define individual behavior			2	2	2	2	2	3	3		2	2	2	2	2
		817305.3	Determine group issues			2	2		2	2	3	3		2	2	2		2
		817305.4	Apply leadership styles			2	2	2	2	2	3	3	2	3	2	2		2
		817305.5	Analyze factors causing work stress			2	2			2	3				2	2	2	
		817305				**2**	**2**	**2**	**2**	**2**	**3**	**3**	**2**	**2.5**	**2**	**2**	**2**	**2**
SE	Analog Electronic Circuits Lab	817306.1	To design and formulate the operating point parameters of BJT / FET.	3	3	2												
		817306.2	To measure the effect of bypass capacitor in frequency response.	3		1												
		817306.3	To assess the effect of positive feedback in oscillator.	3	2	1												
		817306.4	To test OP-Amp as an integrator and differentiator.	3	1	2												
		817306.5	To measure the performance of OP-Amp low pass/ high pass filter	3	2	2												
		817306		**3**	**1.6**	**1.6**												
SE	Discrete Mathematics Lab	817307.1	Solve the problem based on set theory and logical connectives.		2		1			2			1	2		1	2	
		817307.2	Identify various number conversion techniques.	1	2	2	2	1		1			2			2	2	1
		817307.3	Apply shortest path techniques in real life.	2	1			2	1				1	1	1	2	2	1
		817307.4	Analyze minimum spanning tree using Prims and Kruskal algorithm															
		817307.5																
		817307		**1.5**	**1.7**	**1**	**1.5**	**1.5**	**1**	**1.5**	**0**	**0**	**1.33**	**1.5**	**1**	**1.66**	**3**	**0.66**
SE	Object Oriented Programming Lab	817308.1	Create class and object for various application.	3	1	3		2	2			2	2		3	3	2	3
		817308.2	Use the concept pointers, constructors, destructors etc. for dynamic memorymanagement techniques.	3	2	3	1	2	2	1	2	1	2		3	3	2	2
		817308.3	Apply the concept of inheritance to avoid data duplication.	3	2	3	1	2	2	1	2	1	2		3	3	2	2

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		817308.4	Create and demonstrate operator overloading.	3	1	3		2			2	2	2		3	2	2	2
		817308.5	Implement class and function template.	3		3	2	2	2		2	2	2		3	2	2	2
		817308		**3**	**1.5**	**3**	**1.3**	**2**	**2**	**1**	**2**	**1.6**	**2**		**3**	**2.6**	**2**	**2.2**
TE	Database Management Systems	517501.1	Explain the basics of Database Management System and develop the entity relationship diagram for any database application.	2		3	2	2		1		1	2		1	3		2
		517501.2	Construct the queries using Formal Relational Query Languages.	2	2	2	1					1	1		1	2		1
		517501.3	Construct the queries using Structured Query Language and explain the working of Function, Procedure and Triggers.	2	2	2	1			2		1	1		1	2	2	3
		517501.4	Identify and apply normalization methods on database, along with understanding of indexing basic concept							2				2			2	
		517501.5	Discuss the concept of transaction, concurrency, recovery and various database system architectures.							2				2			2	
		517501		**2**	**2**	**2.3**	**1.3**	**2**		**1.75**		**1**	**1.33**	**2**	**1**	**2.33**	**2**	**2**
TE	Software Engineering	517502.1	Define basic concepts of software engineering	3	1				1	1			3		1	1		
		517502.2	Describe software requirements	3	2					1	1	1	3			2		
		517502.3	Illustrate the design of software	3		2	1	3	1		2		3			1	2	2
		517502.4	Test developed software for requirements validation	3	1					1	2			1	2	2		3
		517502.5	Outline software project planning activities and schedule them for project execution	3	3		1	1				3		3		2	1	
		517502		**3**	**1.7**	**2**	**1**	**2**	**1**	**1**	**1.6**	**2**	**3**	**2**	**1.5**	**1.6**	**1.5**	**2.5**
TE	Formal Language and Automata Theory	517503.1	Understand the basic of formal languages and automata theory.	3	2	3	2	2	1	1	3	1	2	1	2	2	1	1
		517503.2	Describe and transform regular expression for computation.	3	2	3	2	2	1	1	3	1	2	1	2	2	1	1
		517503.3	Construct/convert grammars for formal languages.	3	2	3	2	2	1	1	3	1	2	1	2	2	1	1
		517503.4	Interpret PDA for Context free language and regular language.	3	2	3	2	2	1	1	3	1	2	1	2	2	1	1
		517503.5	Design and analyze the Turing machine for formal languages.	3	2	3	2	2	1	1	3	1	2	1	2	2	1	1
		517503		**3**	**2**	**3**	**2**	**2**	**1**	**1**	**3**	**1**	**2**	**1**	**2**	**2**	**1**	**1**
TE	Artificial Intelligence (PEC - I)	517541.1	Use appropriate search algorithms for any AI problem	3	3	3	2	3	2	1		1	2	2	2	2	3	2
		517541.2	Represent a problem using first order and predicate logic	3	3	2	2	1	3	1		1	2	2	2	2	2	2

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		517541.3	Provide the apt agent strategy to solve a given problem	2	2	3	3	2	3	2	1	2	2	2	1	3	2	2
		517541.4	Design software agents to solve a problem	3	3	3	3	3	2	2	2	3	2	3	3	3	3	3
		517541.5	Design applications for NLP that use Artificial Intelligence.	3	3	3	3	2	2	2	1	3	2	2	2	3	3	3
		517541		**2.8**	**2.8**	**2.8**	**2.6**	**2.2**	**2.4**	**1.6**	**0.8**	**2**	**2**	**2.2**	**2**	**2.6**	**2.6**	**2.4**
TE	Cyber Law and Ethics (OEC - I)	517553.1	To able to understand the objective and scope of IT act 2000	2	1	1	-	-	2	1	2	-	1	1	2	2	-	-
		517553.2	To get acquainted with the Intellectual Property issues for obtaining the copyright, patents, trademark	1	2	1	2	1	1	1	2	2	1	2	2	2	-	2
		517553.3	To able to get familiar with the procedure of handling the process of Physical security breach	1	1	2	-	1	2	2	2	1	1	-	-	2	2	2
		517553.4	To able to understand the characteristics of Cybercrime and its classification	-	1	1	3	1	2	1	2	1	1	1	-	1	2	2
		517553.5	To be able to classify and understand information security system with respect to threats and attacks.	2	-	1	2	2	1	-	2	1	1	1	1	2	2	2
		517553		**0.4**	**0.2**	**0.6**	**1**	**0.6**	**1.2**	**0.6**	**1.6**	**0**	**0**	**0**	**0.6**	**1.8**	**1.2**	**1.6**
TE	Management Systems Lab	817506.1	Develop a database with various constraints using SQL Data Definition Language.	1	2	2		2		2		1		2		3	2	1
		817506.2	Use DML queries to retrieve, insert, delete and update the database.	1	2	2		2	1	2		1	1	2		2	2	1
		817506.3	Apply various SQL features such as Aggregate functions, Set Operations and Views to resolve the queries.	1	2	2		2	1	2		1	1	2		2	2	1
		817506.4	Demonstrate Stored Procedure, Stored function and Trigger on a Sample Databases.	1	2	2		2	1	2		1	1	2		2	2	1
		817506.5	Develop database application using ODBC/JDBC interface to store and retrieve data from the database.	1	2	2		2	1	1		1	1	2		2	2	1
		817506		**1**	**2**	**2**		**2**	**0.8**	**1.8**		**1**	**0.8**	**2**		**2.2**	**2**	**1**
TE	Software Engineering Lab	817507.1	Analyze the type of UML diagrams required for proposed software system	1	1										2	2		
		817507.2	Decide contents of the UML diagrams				1	1							1	1		
		817507.3	Design basic and advanced structural UML modeling diagrams			3	1	2	1	1			3			2	3	1
		817507.4	Design basic and advanced behavioral UML modeling diagrams			3	1	2	1	1			3			2	3	1
		817507.5	Develop various UML models for proposed software								1	2		1		1	1	3
		817507		**1**	**1**	**3**	**1**	**1.6**	**1**	**1**	**1**	**2**	**3**	**1**	**1.5**	**1.6**	**2.3**	**1.6**
TE	Web Programming Language Lab	817508.1	Able to learn new web languages (PHP, JavaScript)	1	2	1	2	3	1	2	2	2	3	-	2	3	3	2

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		817508.2	Make use of appropriate web scripting language for different applications	1	2	2	2	2	2	2	2	2	2	-	2	1	2	3
		817508.3	Install and configure web server	1	-	1	2	3	2	2	1	1	-	-	1	1	2	3
		817508.4	Design interactive website	1	2	3	`1	2	2	2	2	2	2	-	2	3	2	2
		817508.5	Design and develop database web application	1	2	3	2	2	2	2	2	2	2	-	2	3	2	2
		817508		**1**	**2**	**2**	**1.8**	**2.4**	**1.8**	**2**	**1.8**	**1.8**	**1.6**	**-**	**1.8**	**2.2**	**2.2**	**2.4**
TE	Minor Project (Stage – I)	817509.1	Demonstrate a sound technical knowledge of their selected project topic.	3	3	3	3	3	2	1		2	3			3		
		817509.2	Undertake problem identification, formulation and solution.	3	3	3	3	3	1	1	2	2				3		
		817509.3	Design engineering solutions to complex problems utilizing a systems approach.	3	3	3	3	3	2	2	2	2				3	3	3
		817509.4	Conduct an engineering project	3	3	3	3	3	1	1	2	3	3	3	3	3	3	3
		817509.5	Demonstrate the knowledge, skills and attitudes of a professional engineer.						3	3	3	3	3	3	3			3
		817509		**3**	**3**	**3**	**3**	**3**	**1.8**	**1.6**	**2.25**	**2.4**	**3**	**3**	**3**	**3**	**3**	**3**
BE	Compiler Design	717701.1	Design Lexical Analyzer	3	3	3	3	3							2	3	3	3
		717701.2	Design Syntax Analyzer	3	3	3	3	3							2	3	3	3
		717701.3	Generate Intermediate Code	3	3	3	3									2		
		717701.4	Illustrate different storage management schemes	3	3	3	3		2	2	2				2	2		
		717701.5	Design Code Generator	3	3	3	3									3		3
		717701		**3**	**3**	**3**	**3**	**3**	**2**	**2**	**2**				**2**	**2.6**	**3**	**3**
BE	Machine Learning	717721.1	Recognize the characteristics of machine learning that make it useful to real-world problems.	3	3	3	2	3	3			2	1		1	3	3	3
		717721.2	Able to use regularized regression and Classification algorithms.	3	3	2		2	2	1				1		3	2	3
		717721.3	Evalute machine learning algorithms and model selection.	3	3	3	3	2	3		3	2	2	2	2	3		
		717721.4	Understand scalable machine learning and machine learning for IoT.	3	3	2	2		2	2		2	2	2	2			3
		717721.5	Understand Deep leaning and Expert system.	3	3		2	2	1		2	1	1	1		2	3	
		717721		**3**	**3**	**2.5**	**2.3**	**2.3**	**2.2**	**1.5**	**2.5**	**1.8**	**1.5**	**2**	**2**	**2.66**	**2.5**	**3**
BE	Data Mining	717731.1	To introduce students to the basic concepts and techniques of Data Mining.	2	2		1	1	1	1					2	1	2	3
		717731.2	To develop skills of using recent data mining software for solving practical problems.	2	1	2	1	2	1	1	2	2		1	2	1	2	3

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		717731.3	To gain experience of doing independent study and research.	2	1	1	1	1	1	1		1			2	1		
		717731.4	To study the methodology of engineering legacy databases for data warehousing and data mining to derive business rules for decision	2	3	1	1	1	1	1		1			2	1		
		717731.5	Develop and apply critical thinking, problem-solving, and decision-making skills.	2	1	2	1	2	1	1	2	2		1	2	1	2	3
		717731		**2**	**1.6**	**1.5**	**1**	**1.4**	**1**	**1**	**2**	**1.5**		**2**	**2**	**1**	**2**	**3**
BE	Quantitative Reasoning and Problem Solving	717743.1	Perform arithmetic calculations on number system, HCF and LCM and age	3	1													
		717743.2	Solve application problems involving Time, Distance, Speed.	3	1													
		717743.3	Calculate Time Taken at varies case.	3	1													
		717743.4	Calculate percentage, average and simple interest.	3	1													
		717743.5	Classify data as categorical or quantitative.	3	1		1											
		717743		**3**	**1**		**1**											
BE	Compiler Design Lab	717705.1	Demonstrate LEX and YACC tools.	2	1		1	2							1		2	2
		717705.2	Design Lexical Analyzer.	3	2	1	2	2	1		1		2	1	1	1	2	2
		717705.3	Design Syntax Analyzer.	3	2	1	2	2	1		1		2	1	1	1	2	2
		717705.4	Design Code Optimization.	3	2	1	2	2	1		1		2	1	1	1	2	2
		717705.5	Design Code Generator	3	2	1	2	2	1		1		2	1	1	1	2	2
		717705		**2.8**	**1.8**	**1**	**1.8**	**2**	**1**		**1**		**2**	**1**	**1**	**1**	**2**	**2**
BE	Advanced Technology Lab -I	717706.1	Break down real world problems / application.	2	1	2		2	1	2	2		1	1	3	3	2	3
		717706.2	Demonstrate Full Stack development.	2		3		2	1	2	2			1	3	3	2	3
		717706.3	Design Full Stack based applications.	2		3		2	1	2	2			1	3	3	2	3
		717706.4	Decide tools for Full Stack development.	2		3		2	1	2	2			1	3	3	2	3
		717706.5	Develop Full Stack based applications.	2	1	3		2	1	2	2			1	3	3	2	3
		717706		**2**	**1**	**2.8**		**2**	**1**	**2**	**2**		**1**	**1**	**3**	**3**	**2**	**3**
BE	Project (Stage – I)	717707.1	Demonstrate a sound technical knowledge of their selected project topic.	3	3	3	3	3	2	1		2	3			3		
		717707.2	Undertake problem identification, formulation and solution.	3	3	3	3	3	1	1	2	2				3		
		717707.3	Design engineering solutions to complex problems utilizing a systems approach.	3	3	3	3	3	2	2	2	2				3	3	3

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		717707.4	Conduct an engineering project	3	3	3	3	3	1	1	2	3	3	3	3	3	3	3
		717707.5	Demonstrate the knowledge, skills and attitudes of a professional engineer.						3	3	3	3	3	3	3			3
		717707		**3**	**3**	**3**	**3**	**3**	**1.8**	**1.6**	**2.25**	**2.4**	**3**	**3**	**3**	**3**	**3**	**3**

CO-PO Mapping 2021-22 Term-II

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SE	Biology	817401.1	Describe the concepts of modern cell theories and identify the differences in eukaryotic and	3	3	0	2	0	1	2	0	0	0	0	1	1	0	0
		817401.2	Explain the major groups of animal and plant kingdom.	3	3	0		0		2	2	0	0	0	1	1	0	0
		817401.3	Demonstrate the advanced techniques in plant and animal tissue culturing, and able to	3	3	2	2	0	1	2	0	0	0	0	1	1	0	0
		817401.4	Classify the microorganisms through different isolation techniques and illustrate microbial culture techniques.	3	3	0	2	0	1	2	0	0	0	0	1	1	0	0
		817401.5	Illustrate mechanism involved rDNA technology and apply the different aspects of Biotechnology.	3	3	0	2	0	1	2	0	0	0	0	1	1	0	0
		817401		**3**	**3**	**2**	**2**	**0**	**1**	**2**	**2**	**0**	**0**	**0**	**1**	**1**	**0**	**0**
SE	Digital Electronics	817402.1	Develop a digital logic and apply it to solve real life problems.	3	2	3	1	1	2	0	0	2	3	2	2	1	1	1
		817402.2	Understand and use of K-Map and Tabular method for simplification of logical expression.	3	2	2	1	2	2	0	0	2	3	1	2	1	1	1
		817402.3	Analyze, design and implement combinational logic circuits	3	2	3	1	1	2	0	0	1	2	1	2	1	1	1
		817402.4	Analyze and implement the sequential logic circuits using flip-flops.	3	3	2	1	1	2	0	0	1	2	1	2	1	1	1
		817402.5	Classify registers and design of the counters.	3	3	3	1	1	2	0	0	1	2	1	2	1	1	1
		817402		**3**	**2.4**	**2.6**	**1**	**1.2**	**2**	**0**	**0**	**1.4**	**2.4**	**1.2**	**2**	**1**	**1**	**1**
SE	Data Structure & Algorithms	817403.1	Enumerate the concepts of data and data structure	3	2	1	1	1	0	0	0	2	3	3	3	1	1	1
		817403.2	Analyze linear data structures	3	2	1	1	1	0	0	0	2	3	3	3	1	1	1
		817403.3	Analyze nonlinear data structure	3	2	1	1	1	0	0	0	2	3	3	3	1	1	1
		817403.4	Enumerate sorting and searching algorithms	3	2	1	1	1	0	0	0	2	3	3	3	1	1	1
		817403.5	Analyze space and time complexity	3	2	1	1	1	0	0	0	2	3	3	3	1	1	1

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		817403		**3**	**2**	**1**	**1**	**1**	**0**	**0**	**0**	**2**	**3**	**3**	**3**	**1**	**1**	**1**
SE	Computer Organization & Architecture	817404.1	To draw and explain internal architecture of 8086 with its register organization.	3	2	1	1	1	0	0	0	2	3	3	3	1	1	1
		817404.2	Explain various arithmetic and logical 8086 instructions and assembler directives.	3	2	1	1	1	0	0	0	2	3	3	3	1	1	1
		817404.3	Explain single bus architecture within the processor with complete execution cycle.	3	2	1	1	1	0	0	0	2	3	3	3	1	1	1
		817404.4	Explain various types of memories and solve numerical on cache memory design.	3	2	1	1	1	0	0	0	2	3	3	3	1	1	1
		817404.5	Explain and solve arithmetic operations like multiplication using booths algorithm and bit pairing method.	3	2	1	1	1	0	0	0	2	3	3	3	1	1	1
		817404		**3**	**2**	**1**	**1**	**1**	**0**	**0**	**0**	**2**	**3**	**3**	**3**	**1**	**1**	**1**
SE	Finance & Accounting	817405.1	Understand the meaning, scope, significance, legal aspects and applications of accounting in Engineering field .	1	2	2	2	1	2	2	2	1	2	2	1	1	1	1
		817405.2	Understanding and use of book-keeping and the distinction of accounting with bookkeeping	1	0	1	2	2	2	2	2	2	2	2	1	1	1	1
		817405.3	Understand and apply Concept Double Entry System, Journal, Ledger for accounting purpose.	1	0	1	2	1	2	2	2	2	2	2	1	1	1	1
		817405.4	Understand both the theoretical and practical role of financial management in business corporations.	1	1	1	3	1	2	2	2	2	2	2	1	1	1	1
		817405.5	Exposure to primary and secondary markets.	1	1	1	2	2	1	2	2	2	2	2	1	1	1	1
		817405		**1**	**1**	**1.2**	**2.2**	**1.4**	**1.8**	**2**	**2**	**1.8**	**2**	**2**	**1**	**1**	**1**	**1**
SE	Digital Electronics Lab	817406.1	Generate a logic circuit for Boolean expression using basic gates.	3	2	2	2	3	0	1	0	2	3	2	2	1	1	1
		817406.2	Design a simplified logic circuit using K-Map/ QM method	3	2	2	2	3	0	1	0	3	3	3	3	1	1	1
		817406.3	Create a higher order combinational circuit from lower order combinational circuit	3	3	2	2	3	0	1	0	2	2	2	2	1	1	1
		817406.4	Modify any logic circuit of any type register.	3	2	2	2	3	0	1	0	3	3	3	3	1	1	1
		817406.5	Deploy a counter of any modulus using flip-flops.	1	1	2	1	1	0	1	0	1	1	1	1	0	0	0
		817406		**2.6**	**2**	**2**	**1.8**	**2.6**	**0**	**1**	**0**	**2.2**	**2.4**	**2.2**	**2.2**	**1**	**1**	**1**
SE	Data Structure & Algorithms Lab	817407.1	Evaluate linear data structure	1	3	2	1	3	0	1	0	3	3	3	3	1	1	1
		817407.2	Evaluate inter conversions of mathematical notations	1	3	2	1	3	0	1	0	3	3	3	3	1	1	1
		817407.3	Evaluate Tree traversals	1	3	2	1	3	0	1	0	3	3	3	3	1	1	1

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		817407.4	Evaluate nonlinear data structure	1	3	2	1	3	0	1	0	3	3	3	3	1	1	1
		817407.5	Evaluate searching and sorting techniques.	1	3	2	1	3	0	1	0	3	3	3	3	1	1	1
		817407		**1**	**3**	**2**	**1**	**3**	**0**	**1**	**0**	**3**	**3**	**3**	**3**	**1**	**1**	**1**
SE	Computer Organization & Architecture Lab	817408.1	Apply DOS/BIOS interrupts and its functions for input and output operations.	1	3	2	1	3	0	1	0	3	3	3	3	1	1	1
		817408.2	Identify and apply 8086 assembly language macro.	1	3	2	1	3	0	1	0	3	3	3	3	1	1	1
		817408.3	Understand and apply 8086 assembly language NEAR and FAR procedure	1	3	2	1	3	0	1	0	3	3	3	3	1	1	1
		817408.4	Apply various string matching operations.	1	3	2	1	3	0	1	0	3	3	3	3	1	1	1
		817408.5	Write program for BCD to HEX conversion and BCD addition	1	3	2	1	3	0	1	0	3	3	3	3	1	1	1
		817408		**1**	**3**	**2**	**1**	**3**	**0**	**1**	**0**	**3**	**3**	**3**	**3**	**1**	**1**	**1**
SE	IT Workshop	817409.1	Discuss basics of MATLAB/Scilab open source simulation software	1	2	1	1	2	0	1	0	2	1	1	2	1	1	1
		817409.2	Demonstrate Mathematical operations in MATLAB /Scilab	1	2	1	1	3	0	1	0	2	1	1	2	1	1	1
		817409.3	Illustrate plotting operations on linear expression	1	2	1	1	2	0	1	0	2	1	1	2	1	1	1
		817409.4	Demonstrate relational and logical operations on matrix	1	2	1	1	2	0	1	0	2	1	1	2	1	1	1
		817409.5	Use of matrix manipulation operations	1	2	1	1	2		1		2	1	1	1	1	1	1
		817409		**1**	**2**	**1**	**1**	**2.2**	**0**	**1**	**0**	**2**	**1**	1	**1.8**	**1**	**1**	**1**
SE	Environmental Studies	55555.1	Illustrate Natural Resources and associated problems	0	0	2	0	0	3	3	3	0	0	0	3	1	0	0
		55555.2	Outline Ecosystem	0	0	2	0	0	3	3	3	0	0	0	3	1	0	0
		55555.3	Describe Biodiversity	0	0	2	0	0	3	3	3	0	0	0	3	1	0	0
		55555.4	Illustrate Environmental pollution	0	0	2	0	0	3	3	3	0	0	0	3	1	0	0
		55555.5	Illustrate social issues that effect Environment	0	0	2	0	0	3	3	3	0	0	0	3	1	0	0
		55555		**0**	**0**	**2**	**0**	**0**	**3**	**3**	**3**	**0**	**0**	**0**	**3**	**1**	**0**	**0**
TE	Operating Systems	617601.1	Discuss fundamental of OS	3	1	2	2	1	3	2	2	2	2	1	3	3	3	3
		617601.2	Solve process scheduling, critical section, concurrency problems.	3	3	3	3	1	3	1	2	3	2	2	3	3	2	2
		617601.3	Explain deadlock & memory management concept.	3	3	3	3	2	3	2	2	2	2	1	3	3	2	1
		617601.4	Describe file management system.	3	3	3	3	1	2	1	2	1	1	2	3	3	2	2
		617601.5	Identify efficient disk scheduling algorithm.	3	3	3	3	1	3	1	2	2	2	1	2	3	2	1
		617601		**3**	**2.6**	**2.8**	**2.8**	**1.2**	**2.8**	**1.4**	**2**	**2**	**1.8**	**1.4**	**2.8**	**3**	**2.2**	**1.8**

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TE	Computer Networks	617602.1	Explain the basics concepts of data communication and networking.	2	1	1	1	1	1		2		1	1	1	1	1	1
		617602.2	Solve numerical of IP addressing and describe internet protocol along with address mapping.	3	3	3	2	2	1		1	2	1	1	1	2	2	2
		617602.3	Describe error reporting and forwarding along with routing protocols.	2	2	2	2	1	1		1		2	1	1	2	2	2
		617602.4	Demonstrate process to process communication at transport layer using TCP and UDP.	2	3	2	2	1	1		1		2	2	1	2	2	2
		617602.5	Discuss network security and wireless networking concepts.	2	2	1	1	1	1	1	1	1	1	2	1	2	2	2
		617602		**2.2**	**2.2**	**1.8**	**1.6**	**1.2**	**1**	**1**	**1.2**	**1.5**	**1.4**	**1.4**	**1**	**1.8**	**1.8**	**1.8**
TE	Design and Analysis of Algorithms	617603.1	Understand and design of basic algorithms and computer time complexity.	3	3	3	1	1	1				1		2	3	2	1
		617603.2	Design and analyze algorithm by Divide and conquer approach.	3	3	3	2	3	2	1	1		1	1	2	3	2	1
		617603.3	Apply backtracking and Branch-bound approach to real word problem.	3	3	3	2	3	2	1	1		1	1	2	3	2	1
		617603.4	Simulate Greedy and Dynamic programming approach.	3	3	3	2	3	2	1	1		1	1	2	3	2	1
		617603.5	Recognize basic computational types of problem	3	3	2	2	1	1				1		1	3	2	1
		617603		**3**	**3**	**2.8**	**1.8**	**2.2**	**1.8**	**1**	**1**		**1**	**1**	**1.8**	**3**	**2**	**1**
TE	Neural Networks	617641.1	Analyze the differences between computer and human brain.	1	1	2	2	1	1	1	1	2	3	1	1	1	1	1
		617641.2	Apply learning rules to artificial neural networks.	1	1	2	2	1	1	1	1	2	3	1	1	1	1	1
		617641.3	Analyze various architectures of artificial neural networks.	1	1	2	2	1	1	1	1	2	3	1	1	1	1	1
		617641.4	Enumerate perceptron	1	1	2	2	1	1	1	1	2	3	1	1	1	1	1
		617641.5	Enumerate the Associative Memory	1	1	2	2	1	1	1	1	2	3	1	1	1	1	1
		617641		**1**	**1**	**2**	**2**	**1**	**1**	**1**	**1**	**2**	**3**	**1**	**1**	**1**	**1**	**1**
TE	Project Management	617651.1	Use and explain different stages of project management	2		1	1		1	1		1	1	1	1	3	2	2
		617651.2	Make use of project planning and scheduling tools	2		2	1	3	2	1		1	2		1	1		2
		617651.3	Know the methods of cost estimation of project	1	2	2	2	3		1	2	1	1	2	1	1	3	2
		617651.4	Apply project risk management for controlling risk	1	2	2	2	2		1	2	1	1		1	1	3	2
		617651.5	Understand the procurement management for the project	1	1	1		1	2	1	1	1	2	2	1			2
		617651		**1.4**	**1**	**1.6**	**1.2**	**1.8**	**1**	**1**	**1**	**1**	**1.4**	**1**	**1**	**1.2**	**1.6**	**2**
TE	Operating Systems Lab	817606.1	Apply process scheduling concept.	3	3	3	3	2	2	1	1	2	1	2	2	3	3	2

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		817606.2	Explain file management & memory management concept.	2	2	2	2	3	1	1	1	3	1	2	3	3	3	3
		817606.3	Discuss concurrency problems.	3	3	3	3	2	3	2	1	3	2	3	2	3	3	2
		817606.4	Analyse the disk scheduling algorithm.	3	3	3	3	2	2	1	1	2	1	2	2	3	3	2
		817606.5	Describe Inter Process Communication mechanism	2	2	2	2	3	1	1	1	3	1	3	2	3	3	3
		817606		**2.6**	**2.6**	**2.6**	**2.6**	**2.4**	**1.8**	**1.2**	**1**	**2.6**	**1.2**	**2.4**	**2.2**	**3**	**3**	**2.4**
TE	Computer Networks Lab	817607.1	Apply the concept of bit stuffing in framing.	2	1	1	1	1	1		2		1	1	1	2	3	3
		817607.2	Use Run Length Encoding for data compression.	3	3	3	2	2	1		1	2	1	1	1	2	3	3
		817607.3	Demonstrate client server communication using TCP and UDP Socket.	2	2	2	2	1	1		1		2	1	1	2	3	3
		817607.4	Develop Cryptographic algorithms.	2	3	2	2	1	1		1		2	2	1	2	3	3
		817607.5	Build the network scenario in network simulation tool.	2	2	1	1	1	1	1	1	1	1	2	1	2	3	3
		817607		**2.2**	**2.2**	**1.8**	**1.6**	**1.2**	**1**	**1**	**1.2**	**1.5**	**1.4**	**1.4**	**1**	**2**	**3**	**3**
TE	Analysis of Algorithms Lab	817608.1	Analyze and Implement divide and conquer approach.	3	3	2	2	2	1			1	2	1	2	3	2	1
		817608.2	Implement dynamic programming approach	3	3	2	2	2	1	1	1	1	2	1	2	3	2	1
		817608.3	Implement Branch and bounding approach	3	3	2	2	2	1	1	1	1	2	1	2	3	2	1
		817608.4	Implement backtracking approach.	3	3	2	2	2	1	1	1	1	2	1	2	3	2	1
		817608.5	Implement greedy algorithm approach	3	3	2	2	2	1	1	1	1	2	1	2	3	2	1
		817608		**3**	**3**	**2**	**2**	**2**	**1**	**1**	**1**	**1**	**2**	**1**	**2**	**3**	**2**	**1**
TE	Minor Project	817609.1	Demonstrate a sound technical knowledge of their selected project topic.	3	3	3	3	3	2	1		2	3			3		
		817609.2	Undertake problem identification, formulation and solution.	3	3	3	3	3	1	1	2	2				3		
		817609.3	Design engineering solutions to complex problems utilizing a systems approach.	3	3	3	3	3	2	2	2	2				3	3	3
		817609.4	Conduct an engineering project	3	3	3	3	3	1	1	2	3	3	3	3	3	3	3
		817609.5	Demonstrate the knowledge, skills and attitudes of a professional engineer.						3	3	3	3	3	3	3			3
		817609		**3**	**3**	**3**	**3**	**3**	**1.8**	**1.6**	**2.25**	**2.4**	**3**	**3**	**3**	**3**	**3**	**3**
BE	Cyber Security	817801.1	Determine the act of Cyberoffenses.	3	3	3	3	3	3	2	3				3	3	3	3
		817801.2	Determine the Cybercrime through portable devices.	3	3	3	3	3	3	2	3				3	3	3	3
		817801.3	Determine the methods used in Cybercrime	3	3	3	3	3	3	2	3				3	3	3	3

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		817801.4	Determine Phishing and Identity theft	3	3	3	3	3	3	2	3				3	3	3	3
		817801.5	Describe Computer Forensics.	3	3	3	3	3	3	2	3				3	3	3	3
		817801		**3**	**3**	**3**	**3**	**3**	**3**	**2**	**3**				**3**	**3**	**3**	**3**
BE	Soft Computing (Professional Elective Course – V)	817821.1	Apply soft computing methodologies includes neural network.	3	1	3	2	2	1		2		1			3	2	1
		817821.2	Apply soft computing methodologies includes fuzzy logic	3	1		2	2					1			3	2	1
		817821.3	Apply soft computing methodologies includes genetic algorithm	3	1	3	2	2	1		2		1			3	2	1
		817821.4	Apply soft computing methodologies includes hybrid system	3	1		2	2					1			3	2	1
		817821.5	Design of certain scientific and commercial application using soft computing approach	2		3		2	1	2	2			1	3	3	2	3
		817821		**2.8**	**1**	**3**	**2**	**2**	**1**	**2**	**2**		**1**	**1**	**3**	**3**	**2**	**1.4**
BE	Data Analytics (Professional Elective Course – VI)	817831.1	Understand the concepts of big data	3	1			2					1			3		
		817831.2	Understand the concepts of Data science	3	1								1			3		
		817831.3	Do the data analysis	3	1		2	2			2		1			3	2	1
		817831.4	Apply the concepts of data visualization	3	1	3	2	2	1		2		1			3	2	1
		817831.5	Apply data analytics tools	3	1		2	2					1			3	2	1
		817831		**3**	**1**	**3**	**2**	**2**	**1**		**2**		**1**			**3**	**2**	**1**
BE	Logical Reasoning and Problem Solving (Open Elective Course – IV)	817843.1	Tell Analogy, Classification, perform coding and decoding on data	3	1		1											
		817843.2	Recognize logical and philosophical reasoning.	3	1		1											
		817843.3	Recognize logical reasoning applicable to real-life situations, solve real-life problems	3	1													
		817843.4	Experience with diversity to demonstrate knowledge and sensitivity.	3	1													
		817843.5	Solve application problems involving Clock, Calendar and Ratio and Proportion.	3	1													
		817843		**3**	**1**		**1**											

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BE	Cyber Security Lab	817805.1	To describe Information Technology Act of India.		2	3	3		3	3	3				3	3		
		817805.2	Describe Cyber Security	3	2	3	3	3	3	3	3				3	3	3	3
		817805.3	Demonstrate Offensive Cyber Security Tools	3	2	3	3	3	3	3	3				3	3	3	3
		817805.4	Demonstrate Defensive Cyber Security Tools	1	1	1	1		3	3	3				3	3	2	2
		817805.5	Demonstrate Security Testing Tools for Web Applications.	3	2	3	3	3	3	3	3				3	3	3	3
		817805		**2.5**	**1.8**	**2.6**	**2.6**	**3**	**3**	**3**	**3**				**3**	**3**	**2.75**	**2.75**
BE	Advanced Technology Lab - II	817806.1	Break down real world problems / application.	2	1	2		2	1	2	2		1	1	3	3	2	3
		817806.2	Demonstrate Full Stack development	2		3		2	1	2	2			1	3	3	2	3
		817806.3	Design Full Stack based applications	2		3		2	1	2	2			1	3	3	2	3
		817806.4	Decide tools for Full Stack development	2		3		2	1	2	2			1	3	3	2	3
		817806.5	Develop Full Stack based applications.	2	1	3		2	1	2	2			1	3	3	2	3
		817806		**2**	**1**	**2.8**		**2**	**1**	**2**	**2**		**1**	**1**	**3**	**3**	**2**	**3**
BE	Project	817807.1	Demonstrate a sound technical knowledge of their selected project topic.	3	3	3	3	3	2	1		2	3			3		
		817807.2	Undertake problem identification, formulation and solution.	3	3	3	3	3	1	1	2	2				3		
		817807.3	Design engineering solutions to complex problems utilizing a systems approach.	3	3	3	3	3	2	2	2	2				3	3	3
		817807.4	Design engineering solutions to complex problems utilizing a systems approach.	3	3	3	3	3	1	1	2	3	3	3	3	3	3	3
		817807.5	Demonstrate the knowledge, skills and attitudes of a professional engineer.						3	3	3	3	3	3	3			3
		817807		3	3	3	3	3	1.8	1.6	2.3	2.4	3	3	3	3	3	3