CRITERION - 3

3.1 Establish the correlation between the courses and the Program Outcomes (POs) and Program Specific Outcomes (PSOs) (20)

1. **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2**. Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. **Design/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.

4. **Conduct 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.

5. **Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

6. **The 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.

7. **Environment 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.

8. **Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9**. Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10**. Communication**: 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.

11. **Project 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.

12**. Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OBJECTIVES (PSOs)

1. To analyze, design and develop computing solutions by applying foundational concepts of Computer Science and Engineering.
2. To apply software engineering principles and practices for developing quality software for scientific and business applications.
3. To adapt to emerging Information and Communication Technologies (ICT) to innovate ideas and solutions to existing/novel problems

The Anna University curriculum syllabi for the Computer Science courses are a balanced composition of basic science, HSS, Professional Core, and elective and breathing to meet the PSOs.

3.1.1 **a) Course Outcomes (COs) (SAR should include course outcomes of one course from each semester of study, however, should be prepared for all courses and made available as evidence, if asked) (05)**

Sl. No	COURSE NAME	COURSE OUTCOMES
		SEMESTER III **CS8391 - Data Structures**
1	C203.1	Learn and apply the concept and operations of List ADT
	C203.2	Understand and apply the concept and operations of Stack and Queue ADT
	C203.3	Gain the knowledge about Tree ADT and its Applications
	C203.4	Understand the concept, operations and applications of Graph ADT
	C203.5	Understand and analyze sorting, searching and hashing Techniques
	C203.6	Comprehend Minimum Spanning Trees – and algorithms (Kruskal and Prims algorithm)
		SEMESTER IV **CS8493 - Operating Systems**
2	C214.1	Prepare reports for real life database applications
	C214.2	Understand the principles of concurrency, design various CPU scheduling algorithms and Deadlock mechanisms.
	C214.3	Compare and contrast various memory management schemes.
	C214.4	Understand the prototype for file systems
	C214.5	Perform administrative tasks on Linux Servers and compare iOS and Android OS.
	C214.6	Acquire knowledge about Operating systems used for Business applications.
		SEMESTER V **CS8591 - Computer Networks**
3	C302.1	Understand the basic layers and its functions in computer networks.
	C302.2	Understand the basics of how data flows from one node to another
	C302.3	Learn the functions of network layer and the various routing protocols.
	C302.4	Understand the functions and protocols of Transport layer
	C302.5	Understand the working of various application layer protocols.
	C302.6	Gain ideas on security issues of networks.
		SEMESTER VI **CS8601 - Mobile Computing**
4	C312.1	Understand the basics of mobile telecommunication systems.
	C312.2	Illustrate the generations of telecommunication systems in wireless networks.
	C312.3	Learn and understand the functionality of MAC, network layer and identify a routing protocol for a given Ad hoc network
	C312.4	Understand the functionality of Transport and Application layers
	C312.5	Develop a mobile application using android/blackberry/ios/Windows SDK
	C312.6	Understand the basics of 5G technologies.
		SEMESTER VII **CS8792 – Cryptography And Network Security**
5	C402.1	Understand the fundamentals of networks security, security architecture, threats and Vulnerabilities

	C402.2	Gain knowledge on block and stream cipher models and the principles of Public Key Cryptography
	C402.3	Understand the different hash functions and digital signature.
	C402.4	Acquire knowledge about Security Practice and System Security
	C402.5	Gain knowledge about Email, IP and Web Security
	C402.6	Know about cyber security.
SEMESTER VIII CS811-Project Work		
6	C414.1	Formulate a real world challenging problem ethically.
	C414.2	Develop the requirements of the project and analyse extensively the literature survey.
	C414.3	Express technical ideas, strategies and methodologies in written and oral presentations.
	C414.4	Develop sustainable solutions by formulating proper methodology and implement them.
	C414.5	Self-learn new tools, algorithms, and/or techniques that contribute to the software solution of the project
	C414.6	Work as a responsible member and possibly a leader of a team in developing software solutions.

3.1.1. b) Course Outcomes (COs) (SAR should include course outcomes of one course from each semester of study, however, should be prepared for all courses and made available as evidence, if asked) (05)

Sl. No	COURSE NAME	COURSE OUTCOMES
Year:2017-2018(ODD) SEMESTER I		
HS8151 - Communicative English		
1	C101.1	Participate effectively in informal conversation: introduce themselves and their friends and express opinions in English
	C101.2	Comprehend conversations and short talks delivered in English.
	C101.3	Read and write in a coherent and organized manner.
	C101.4	Read articles of a general kind in and newspapers
	C101.5	Write short essays of a general kind and personal letters and emails in English.
	C101.6	Can communicate any idea of a general kind in an organized manner.
MA8151 - Engineering Mathematics - I		
2	C102.1	Learn the basic concepts to use both the limit definition and rules of differentiation to differentiate functions.
	C102.2	Apply partial differentiation to solve maxima and minima problems.
	C102.3	Evaluate integrals both by using Riemann sums and by using the Fundamental Theorem of Calculus. Evaluate integrals using techniques of integration, such as substitution, partial fractions and integration by parts
	C102.4	Determine convergence/divergence of improper integrals and evaluate convergent improper integrals
	C102.5	Apply integration to compute multiple integrals, area, volume, integrals in polar coordinates, in addition to change of order and change of variables
	C102.6	Apply various techniques in solving differential equations.
PH8151 - Engineering Physics		

3	C103.1	Gain knowledge on the basics of properties of matter and its applications
	C103.2	Acquire knowledge on the concepts of waves and optical devices and their applications in fiber optics
	C103.3	Get Adequate knowledge on the concepts of thermal properties of materials and their applications in expansion joints and heat exchangers
	C103.4	Get knowledge on advanced physics concepts of quantum theory and its applications in tunneling microscopes
	C103.5	Understand the basics of crystals , their structures and different crystal growth techniques
	C103.6	Acquire knowledge on solid state laser, graphite and zinc blende structures.
CY8151 - Engineering Chemistry		
4	C104.1	Acquire knowledge on solid state laser, graphite and zinc blende structures.
	C104.2	The factors affecting the rate of adsorption and catalytic activity.
	C104.3	With the help of phase rule, they could understand the various phase diagram and able to predict the low melting alloys
	C104.4	Types of solid, liquid and gaseous fuel, manufacturing methods and basic steps involved in combustion reaction
	C104.5	Types of batteries, their reactions and the importance of renewable energy resources.
	C104.6	The basics and applications of nanomaterial in the recent innovations.
GE8151 - Problem Solving and Python Programming		
5	C105.1	Understand the basic of algorithmic problem solving
	C105.2	Be familiar with data expressions and statements.
	C105.3	understand control flow and functions problems
	C105.4	Comprehend list, tuples and dictionaries.
	C105.5	Read and write data from/to files in Python Programs
	C105.6	Understand Object oriented programming concepts
GE8152 - Engineering Graphics		
6	C106.1	Understand existing national standards of engineering drawing and visualization concepts
	C106.2	Understand the projection of Points, Lines and Plane surfaces
	C106.3	Understand the projection of Solids
	C106.4	Understand the section of solids
	C106.5	Understand the development of surfaces
	C106.6	Understand the isometric and perspective projections
GE8161 - Problem Solving and Python Programming Laboratory		
7	C107.1	Write, test, and debug simple Python programs.
	C107.2	Implement Python programs with conditionals and loops.
	C107.3	Develop Python programs stepwise by defining functions and calling them.
	C107.4	Use Python lists, tuples, dictionaries for representing compound data.
	C107.5	Read and write data from/to files in Python
	C107.6	Design and implement a program to solve a real-world problem using the language idioms, data structure and standard library
BS8161 - Physics and Chemistry Laboratory		
8	C108.1	Apply principles of optics, sound and thermal properties for engineering.
	C108.2	Apply principles of elasticity for engineering applications.
	C108.3	Analyze the viscosity of a liquid.
	C108.4	Apply hands-on knowledge in the quantitative chemical analysis of water.

	C108.5	Carry out the basics of instrumental analysis-conductivity meter, potentiometer and pH meter.
	C108.6	Analyze the total dissolved solids in water
Year:2017-2018(EVEN) SEMESTER II		
HS8251- Technical English		
9	C111.1	Learning the concepts of applying differential equation in signals
	C111.2	Listen and comprehend lectures and talks in their area of specialization successfully.
	C111.3	Speak appropriately and effectively in varied formal and informal contexts.
	C111.4	Write reports and write job applications.
	C111.5	Write minutes of meeting and to take part in group discussion effectively.
	C111.6	Attain fluency in English language to speak convincingly, express their opinions clearly, initiate a discussion, negotiate and comprehend using appropriate communicative strategies.
MA8251 - Engineering Mathematics - II		
10	C112.1	Eigenvalues and Eigenvectors, diagonalization of a matrix, Symmetric matrices, Positive definite matrices and similar matrices.
	C112.2	Gradient, Divergence and curl of a vescsatsaor point function and related identities, evaluation of line, surface and volume integrals using Gauss, Stokes' and Green's theorems and their verification.
	C112.3	Analytic functions, conformal mapping
	C112.4	Complex Integration
	C112.5	Laplace transform and inverse transform of simple functions, properties, various related theorems and application to differential equations with constant coefficients
	C112.6	Learning the concepts of applying differential equation in signals
PH8252 - Physics for Information Science		
11	C113.1	To gain knowledge on industrial application of DC motors
	C113.2	Acquire knowledge on basics of semiconductor physics and its applications in various devices
	C113.3	Get knowledge on magnetic properties of materials and their applications in data storage
	C113.4	Have the necessary understanding on the functioning of optical materials for optoelectronics
	C113.5	Understand the basics of quantum structures and their applications in carbon electronics.
	C113.6	Gain knowledge on application of semiconducting materials and preparation of nanomaterials.
BE8255 - Basic Electrical, Electronics and Measurement Engineering		
12	C114.1	Understand and analyze the fundamental laws & electrical network theorems
	C114.2	Gain knowledge on DC & AC static and rotating machines
	C114.3	Gain knowledge on renewable energy sources, various electrical protective devices
	C114.4	To understand the fundamentals of electronic circuits
	C114.5	To gain knowledge on the working principle & operation of measuring instruments and transducers.
	C114.6	To gain knowledge on industrial application of DC motors
GE8291 - Environmental Science and Engineering		
13	C115.1	Gain knowledge on application of semiconducting materials and preparation of nanomaterials.

	C115.2	Students will be able to know the measures to control environmental pollution.
	C115.3	Students will be able to understand the usage as well as the effects of over exploitation of natural resources.
	C115.4	Students will have knowledge about finding technological, economic and political solutions to environmental problems with various Environmental Protection Act in mind.
	C115.5	Students will be able to understand the interrelationship between population explosion and the environment and also the role of IT in environment and human health.
	C115.6	Students will be able to understand that Environmental problems can only be solved by Public participation in all aspects and cannot be solved by mere laws.
CS8251 - Programming in C		
14	C116.1	Develop simple applications in C using basic constructs
	C116.2	Design and implement applications using arrays and strings
	C116.3	Develop and implement applications in C using functions and pointers.
	C116.4	Develop applications in C using structures.
	C116.5	Design applications using sequential and random access file processing.
	C116.6	Understand the concept of dynamic memory management and basic data structures such as arrays and linked list
GE8261 - Engineering Practices Laboratory		
15	C117.1	Understand the basic principle of welding
	C117.2	Understand the basic principle of Sheet Metal Work:
	C117.3	Understand the basic principle of joints
	C117.4	Understand the basic principle of Machine assembly practice:
	C117.5	Understand the basic principle of Drilling
	C117.6	Understand the basic principle of turning
CS8261- C Programming Laboratory		
16	C118.1	Read, understand and trace the execution of programs written in C language.
	C118.2	Develop conditional and iterative statements to write C programs
	C118.3	Develop C programs for simple applications making use of basic constructs, arrays and strings.
	C118.4	Develop C programs involving functions, recursion, pointers, and structures.
	C118.5	Design applications using sequential and random access file processing.
	C118.6	Exercise user defined functions to solve real time problems
Year:2018-2019(ODD) SEMESTER III		
MA8351 - Discrete Mathematics		
17	C201.1	Have knowledge of the concepts needed to test the logic of a program.
	C201.2	Be aware of the counting principles.
	C201.3	Learn the concepts of Graph Theory that would help them to define new levels of networks which are implemented in AI and ANN.
	C201.4	Be exposed to concepts and properties of algebraic structures such as groups, rings and fields.
	C201.5	Expose the concepts and properties of Lattices and Boolean algebra used in Coding and Decoding theory of Cryptography.
	C201.6	Be proficient in Logical and Mathematical maturity and ability to deal with abstraction and to introduce most of the basic terminologies used in computer science courses and application of ideas to solve practical problems.

CS8351 - Digital Principles and System Design		
18	C202.1	Simplify Boolean functions using K-Map
	C202.2	Design and Analyze Combinational Circuits
	C202.3	Design and Analyze Sequential Circuits.
	C202.4	Implement designs using Programmable Logic Devices
	C202.5	Write HDL code for combinational and Sequential Circuits
	C202.6	ASM chart for digital circuits
CS8391 - Data Structures		
19	C203.1	Learn and apply the concept and operations of List ADT
	C203.2	Understand and apply the concept and operations of Stack and Queue ADT
	C203.3	Gain the knowledge about Tree ADT and its Applications
	C203.4	Understand the concept, operations and applications of Graph ADT
	C203.5	Understand and analyze sorting, searching and hashing Techniques
	C203.6	Comprehend Minimum Spanning Trees – and algorithms (Kruskal and Prims algorithm)
CS8392 - Object Oriented Programming		
20	C204.1	Understand the fundamentals of OOP using Java.
	C204.2	Learn the concepts of inheritance, interfaces.
	C204.3	Build Java applications using exceptions and I/O streams
	C204.4	Develop Java applications with threads and generics classes
	C204.5	Develop interactive Java programs using swings.
	C204.6	Learn the concepts of Applets and develop the interactive Java programs using Applets
EC8395 - Communication Engineering		
21	C205.1	Learn the concepts of Applets and develop the interactive Java programs using Applets
	C205.2	Apply analog and digital communication techniques.
	C205.3	Use data and pulse Communication techniques.
	C205.4	Analyze Source and Error control coding.
	C205.5	Apply spread spectrum modulation techniques
	C205.6	Analyze basic concepts of cellular communication.
CS8381 - Data Structures Laboratory		
22	C206.1	Implement the operations of List, Stack and Queue using Array
	C206.2	Implement the operations of List, Stack and Queue using Linked List
	C206.3	Understand and implement the different operations of various Trees
	C206.4	Implement graph traversal algorithms and techniques
	C206.5	Understand and implement various sorting, searching and hashing algorithms
	C206.6	Implement Minimum Spanning Trees algorithm
CS8383 - Object Oriented Programming Laboratory		
23	C207.1	Develop and implement Java programs for simple applications that make use of classes, packages and interfaces.
	C207.2	Develop and implement Java programs with array list and exception handling
	C207.3	Develop and implement Java programs using the concept of Multithreading.
	C207.4	Design and develop the applications using file processing, generic programming.
	C207.5	Design and develop the applications using event handling mechanisms.
	C207.6	Develop the mini-project using the concepts of Java Programming
CS8382 - Digital Systems Laboratory		

24	C208.1	Implement simplified combinational circuits using basic logic gates
	C208.2	Implement combinational circuits using MSI devices
	C208.3	Implement sequential circuits like registers and counters
	C208.4	Simulate combinational circuits using HDL
	C208.5	Simulate sequential circuits using HDL
	C208.6	Implement various digital circuits
HS8381 - Interpersonal Skills/Listening & Speaking		
25	C209.1	Listen and respond appropriately.
	C209.2	Participate in group discussions
	C209.3	Make effective presentations
	C209.4	Participate confidently and appropriately in conversations both formal and informal
	C209.5	Persuade through conversations
	C209.6	Improve pronunciation clearly.
Year:2018-2019(EVEN) SEMESTER IV		
MA8402 - Probability and Queueing Theory		
26	C210.1	Understand the fundamental knowledge of the concepts of probability and have knowledge of standard distributions which can describe real life phenomenon.
	C210.2	Understand the basic concepts of one and two dimensional random variables and apply in engineering applications.
	C210.3	Apply the concept of random processes in engineering disciplines.
	C210.4	Acquire skills in analyzing queuing models.
	C210.5	Understand and characterize phenomenon which evolve with respect to time in a probabilistic manner
	C210.6	Learn the required mathematical support in real life problems and develop probabilistic models which can be used in several areas of science and engineering.
CS8491- Computer Architecture		
27	C211.1	Understand the basics structure of computers, operations and instructions.
	C211.2	Ability to Design arithmetic and logic unit.
	C211.3	Understand pipelined execution and design control unit
	C211.4	Understand parallel processing architectures
	C211.5	Understand the various memory systems and I/O communication.
	C211.6	Understand Homogeneous and heterogeneous processors
CS8492 - Database Management Systems		
28	C212.1	Classify the modern and futuristic database applications based on size and complexity
	C212.2	Map ER model to Relational model to perform database design effectively
	C212.3	Write queries using normalization criteria and optimize queries
	C212.4	Compare and contrast various indexing strategies in different database systems
	C212.5	Appraise how advanced databases differ from traditional databases.
	C212.6	Study about various open source databases.
CS8451 - Design and Analysis of Algorithms		
29	C213.1	Analyze the time and space complexity of algorithms.
	C213.2	Design algorithms for various computing problems(brute -force, divide and conquer)
	C213.3	Analyze the different algorithm design techniques for a given problem.
	C213.4	Understand the application of Iterative algorithm.

	C213.5	Modify existing algorithms to improve efficiency.
	C213.6	Adopt the recent algorithm design technique to solve the given problem.
CS8493 - Operating Systems		
30	C214.1	Prepare reports for real life database applications
	C214.2	Understand the principles of concurrency, design various CPU scheduling algorithms and Deadlock mechanisms.
	C214.3	Compare and contrast various memory management schemes.
	C214.4	Understand the prototype for file systems
	C214.5	Perform administrative tasks on Linux Servers and compare iOS and Android OS.
	C214.6	Acquire knowledge about Operating systems used for Business applications.
CS8494 - Software Engineering		
31	C215.1	Identify key activities in the software process and compare different process models.
	C215.2	Understand the concepts of requirement engineering and analysis modeling
	C215.3	Applying the systematic procedure for software design.
	C215.4	Compare and Contrast various testing methods and implementation techniques.
	C215.5	Management techniques used for project schedule, estimation of project cost.
	C215.6	Understand the evolution of object oriented models.
CS8481 - Database Management Systems Laboratory		
32	C216.1	Use typical data definitions and manipulation commands.
	C216.2	Design applications to test Nested and Join Queries
	C216.3	Implement simple applications that use Views, Sequences, Synonyms and Cursors
	C216.4	Design database using ER modeling, Normalize and Implement applications that require a Front-end Tool
	C216.5	Critically analyze the use of Tables, Functions, Procedures, Triggers and Exception Handling using PL/SQL
	C216.6	Prepare reports for real life database applications
CS8461 - Operating Systems Laboratory		
33	C217.1	Compare the performance of various CPU Scheduling Algorithms
	C217.2	Implement Deadlock avoidance and Detection Algorithms
	C217.3	Implement Semaphores
	C217.4	Create processes and implement IPC
	C217.5	Analyze the performance of the various Page Replacement Algorithms
	C217.6	Implement File Organization and File Allocation Strategies
HS8461 - Advanced Reading and Writing		
34	C218.1	Write different types of essays
	C218.2	Write winning job applications.
	C218.3	Read and evaluate texts critically.
	C218.4	Display critical thinking in various professional contexts.
	C218.5	Communicate effectively through mails.
	C218.6	Justify the purpose of higher studies.
Year:2019-2020(ODD) SEMESTER V		
MA8551 - Algebra and Number Theory		
35	C301.1	Apply the basic notions of groups, rings, fields which will then be used to solve related problems

	C301.2	Explain the fundamental concepts of advanced algebra and their role in modern mathematics and applied contexts.
	C301.3	Demonstrate accurate and efficient use of advanced algebraic techniques.
	C301.4	Demonstrate their mastery by solving non – trivial problems related to the concepts, and by proving simple theorems about the, statements proven by the text.
	C301.5	Apply an integrated approach to number theory and abstract algebra, and provide a firm basis for further reading and study in the subject.
	C301.6	An ability to deal with abstraction and to introduce most of the basic concepts in number theory used in computer science courses and application in cryptography and network security
CS8591 - Computer Networks		
36	C302.1	Understand the basic layers and its functions in computer networks.
	C302.2	Understand the basics of how data flows from one node to another
	C302.3	Learn the functions of network layer and the various routing protocols.
	C302.4	Understand the functions and protocols of Transport layer
	C302.5	Understand the working of various application layer protocols.
	C302.6	Gain ideas on security issues of networks.
EC8691 - Microprocessors and Microcontrollers		
37	C303.1	Understand the Architecture of 8086 microprocessor and ALP
	C303.2	Design the bus architecture and multiprocessor configuration of 8086 microprocessor
	C303.3	Design the I/O and Memory Interfacing circuits using 8086 and relevant case studies
	C303.4	Understand the Architecture of 8051 microcontroller and ALP
	C303.5	Design the various interfacing circuits using 8051
	C303.6	Comprehend the Architecture of modern microprocessor
CS8501 - Theory of Computation		
38	C304.1	Construct automata for any pattern
	C304.2	Construct regular expression for any pattern
	C304.3	Write Context free grammar for any construct.
	C304.4	Design Turing machines for any language and propose computation solutions.
	C304.5	Derive whether a problem is decidable or not.
	C304.6	Understand Context Sensitive Grammar and LBA
CS8592 - Object Oriented Analysis and Design		
39	C305.1	Express software design with UML diagrams.
	C305.2	Design software applications using OO concepts.
	C305.3	Identify various scenarios based on software requirements.
	C305.4	Transform UML based software design into pattern based design using design patterns.
	C305.5	Understand the various testing methodologies for OO software.
	C305.6	Compare and contrast various testing techniques.
OCE552- Geographic Information System		
40	C306.1	Understand the basic idea about the fundamentals of GIS.
	C306.2	Understand the types spatial of data models.
	C306.3	Gain knowledge about data input and topology.
	C306.4	Gain knowledge on data analysis tools and network analysis.
	C306.5	Understand data management functions and data output.

	C306.6	Understand the GIS in the Cloud.
EC8681 - Microprocessors and Microcontrollers Laboratory		
41	C307.1	Develop ALP Programs for fixed and Floating Point and Arithmetic using 8086
	C307.2	Interface different I/Os with 8086 processor
	C307.3	Generate waveforms using 8086 Microprocessors
	C307.4	Develop and execute programs using 8051 Microcontroller
	C307.5	Develop and execute programs using MASM.
	C307.6	Study and Develop ALP program using ARM processor
CS8582 - Object Oriented Analysis and Design Laboratory		
42	C308.1	Perform OO analysis and design for a given problem specification.
	C308.2	Identify and map basic software requirements in UML mapping.
	C308.3	Improve the software quality using design patterns and to explain the rationale behind applying specific design patterns
	C308.4	Test the compliance of the software with the SRS.
	C308.5	Generate code from design.
	C308.6	Design and develop a case study on object oriented projects
CS8581 - Networks Laboratory		
43	C309.1	Implement various protocols using TCP and UDP.
	C309.2	Compare the performance of different transport layer protocols.
	C309.3	Use simulation tools to analyze the performance of various network protocols.
	C309.4	Analyze various routing algorithms.
	C309.5	Implement error correction codes.
	C309.6	Study about the configuration of Cisco Network Operating system.
Year:2019-2020(EVEN) SEMESTER VI		
CS8651 - Internet Programming		
44	C310.1	Understand the java programming.
	C310.2	Able to design a basic website using HTML and Cascading Style Sheets.
	C310.3	Able to Design and implement dynamic web pages with validation using JavaScript objects and by applying different event handling mechanisms.
	C310.4	Able to Design rich client presentation using AJAX.
	C310.5	Design and implement simple web page in PHP, and to present data in XML format
	C310.6	Develop the Rich Internet Applications
CS8691- Artificial Intelligence		
45	C311.1	Understand the various characteristics of Intelligent agents
	C311.2	Understand and use appropriate searching algorithms for any AI problem
	C311.3	Learn the problem representation using first order and predicate logic
	C311.4	Understand and design appropriate software agents to solve a problem
	C311.5	Learn the various applications for NLP that use Artificial Intelligence
	C311.6	Understand the role of AI in Healthcare system
CS8601 - Mobile Computing		
46	C312.1	Understand the basics of mobile telecommunication systems.
	C312.2	Illustrate the generations of telecommunication systems in wireless networks.
	C312.3	Learn and understand the functionality of MAC, network layer and identify a routing protocol for a given Ad hoc network

	C312.4	Understand the functionality of Transport and Application layers
	C312.5	Develop a mobile application using android/blackberry/ios/Windows SDK
	C312.6	Understand the basics of 5G technologies.
CS8602 - Compiler Design		
47	C313.1	Understand the different phases of the compiler and design a lexical analyzer for a sample language.
	C313.2	Apply different parsing algorithms to develop the parsers for a given grammar
	C313.3	Understand syntax-directed translation
	C313.4	Understand run-time environment and a simple code generator.
	C313.5	Learn to implement code optimization techniques
	C313.6	Design and implement a scanner and a parser using LEX and YACC tools.
CS8603 - Distributed Systems		
48	C314.1	Elucidate the foundations and issues of distributed systems
	C314.2	Understand the various synchronization issues and global state for distributed systems.
	C314.3	Understand the Mutual Exclusion and Deadlock detection algorithms in distributed systems
	C314.4	Describe the agreement protocols and fault tolerance mechanisms in distributed systems.
	C314.5	Describe the features of peer-to-peer and distributed shared memory systems
	C314.6	Understand basics of cloud computing
CS8075-Data Warehousing And Data Mining		
49	C315.1	Understand data warehouse concepts, architecture, business analysis with OLAP tools
	C315.2	Learn and apply suitable pre-processing and visualization techniques for data analysis
	C315.3	Study and apply frequent pattern and association rule mining techniques for data analysis
	C315.4	Understand and apply appropriate classification and clustering techniques for data analysis
	C315.5	Learn and understand the use of WEKA tool for the database analysis
	C315.6	Read and understand Sentiment analysis (opinion mining) concepts
IT8076-Software Testing		
50	C316.1	Design test cases suitable for a software development for different domains.
	C316.2	Identify suitable tests to be carried out.
	C316.3	Prepare test planning based on the document.
	C316.4	Document test plans and test cases designed.
	C316.5	Use automatic testing tools.
	C316.6	Develop and validate a test plan.
CS8662- Mobile Application Development		
51	C317.1	Develop mobile applications using GUI and Layouts.
	C317.2	Develop mobile applications using Event Listener.
	C317.3	Develop mobile applications using Databases.
	C317.4	Develop mobile applications using RSS Feed, Internal/External Storage, SMS, Multithreading and GPS.
	C317.5	Analyze and discover your own mobile app for simple needs.
	C317.6	Develop a mobile application to set wallpaper using Bitmap Class.
CS8661-Internet Programming Lab		
52	C318.1	Able to design Web pages using HTML/XML and style sheets.

	C318.2	Able to Create user interfaces using Java frames and applets.
	C318.3	Able to Create dynamic web pages using server side scripting.
	C318.4	Able to create Client Server applications
	C318.5	Able to Create dynamic web pages using PHP programming
	C318.6	Able to Create applications with AJAX
HS8581 – Professional Communication		
53	C319.1	Take international examination such as IELTS and TOEFL
	C319.2	Make presentations and Participate in Group Discussions.
	C319.3	Successfully answers questions in interviews.
	C319.4	Effectively communicate inside and outside the classroom.
	C319.5	Make them a flawless fearless proficient speaker and understand engineering ethics and to solve real time problems.
	C319.6	Acquire sound knowledge in language and linguistics skills.(LSRW)
CS8611-Mini Project		
54	C320.1	Identify and Formulate a real world challenging problem ethically.
	C320.2	Extract the requirements of the project and analyze extensively the literature survey.
	C320.3	Express technical ideas, strategies and methodologies in written and oral presentations
	C320.4	Learn new tools, algorithms, and/or techniques that contribute to the solution of the project.
	C320.5	Develop sustainable solutions by formulating proper methodology and implement them
	C320.6	Work as a responsible member and possibly a leader of a team in developing solutions.
Year:2020-2021(ODD) SEMESTER VII		
MG8591-Principles Of Management		
55	C401.1	Understanding of management evolution and different types of business.
	C401.2	Knowledge on planning and decision making process of management.
	C401.3	Understanding of organization structure, HR planning and control.
	C401.4	Acquaintance of the various processes and elements of directing function of management like motivation, leadership and communication.
	C401.5	Designing of performance controlling process, techniques of control and reporting to the management
	C401.6	To apply principles of management in order to execute the role as a manager in IT industry
CS8792 – Cryptography And Network Security		
56	C402.1	Understand the fundamentals of networks security, security architecture, threats and Vulnerabilities
	C402.2	Gain knowledge on block and stream cipher models and the principles of Public Key Cryptography
	C402.3	Understand the different hash functions and digital signature.
	C402.4	Acquire knowledge about Security Practice and System Security
	C402.5	Gain knowledge about Email, IP and Web Security
	C402.6	Know about cyber security..
CS8791-Cloud Computing		
57	C403.1	Articulate the main concepts, key technologies, strengths and limitations of cloud computing.
	C403.2	Learn the key and enabling technologies that help in the development of cloud.

	C403.3	Develop the ability to understand and use the architecture of compute and storage cloud, service and delivery models.
	C403.4	Explain the core issues of cloud computing such as resource management and security.
	C403.5	Be able to install and use current cloud technologies.
	C403.6	Evaluate and choose the appropriate technologies, algorithms and approaches for implementation and use of cloud.
OME752 -Supply Chain Management		
58	C404.1	Acquire the scope and importance of supply chain management.
	C404.2	Understand the role of distribution and design distribution networks in supply chain.
	C404.3	Elucidate the foundational role of logistics as it relates to transportation and warehousing.
	C404.4	Comprehend the role of sourcing and coordination among suppliers.
	C404.5	Develop the supply chain activities using IT framework.
	C404.6	Integrate appropriate technologies in developing solutions to business opportunities and challenges.
CS8091- Big Data Analytics		
59	C405.1	Work with big data tools and its analysis techniques
	C405.2	Analyze data by utilizing clustering and classification algorithms
	C405.3	Learn and apply different mining algorithms and recommendation systems for large volumes of data
	C405.4	Perform analytics on data streams
	C405.5	Learn NoSQL databases and management.
	C405.6	To learn and apply data visualization tool like Tableau
IT8075-Software Project Management		
60	C406.1	Understand Project Management principles while developing software.
	C406.2	Obtain adequate knowledge about software process models and software effort estimation techniques
	C406.3	Estimate the risks involved in various project activities.
	C406.4	Define the checkpoints, project reporting structure, project progress and tracking mechanisms using project management principles.
	C406.5	Learn staff selection process and the issues related to people management.
	C406.6	Obtain knowledge on managing people in a software development team
CS8088-Wireless Adhoc and Sensor Networks		
61	C407.1	Understands the issues and challenges in design of MAC and routing protocols for Adhoc network.
	C407.2	Able to understand the Transport protocol and QoS in Ad hoc Networks
	C407.3	Acquire Knowledge about the architecture, MAC and routing protocols for wireless Sensor networks
	C407.4	Analyze and understand the issues related to Transport Layer and QoS in wireless Sensor networks.
	C407.5	Able to identify and understand the security issues in Adhoc and sensor networks.
	C407.6	Able to understand and compare the various Authentication protocols for adhoc and sensor network
CS8073- C# and .Net Programming		
62	C408.1	To Write various applications using C# language in the .Net Framework.
	C408.2	To Write various applications using C# advanced features in .Net Framework.

	C408.3	To Implement base class libraries and database connectivity using ADO.Net.
	C408.4	To Develop distributed applications using .Net Framework.
	C408.5	To Implement base class libraries and manipulation of data using XML.
	C408.6	Ability to develop program using webservices in .Net
CS8711 -Cloud Computing Lab		
63	C409.1	Configure various virtualization tools such as Virtual Box, VMware workstation.
	C409.2	Design and deploy a web application in a PaaS environment.
	C409.3	Learn how to simulate a cloud environment to implement new schedulers.
	C409.4	Install and use a generic cloud environment that can be used as a private cloud.
	C409.5	Manipulate large data sets in a parallel environment.
	C409.6	Install and usage of open nebula
IT8761-Security Lab		
64	C410.1	To implement the classical cipher techniques
	C410.2	To implement the modern cipher techniques
	C410.3	To implement the various hash algorithms
	C410.4	To implement the digital signature algorithm
	C410.5	To use different open source tools for implementing network security
	C410.6	To use different open source tools for network intrusion detection
Year:2020-2021(EVEN) SEMESTER VIII		
GE8076-Professional Ethics In Engineering		
65	C411.1	Ability to understand the values and ethics
	C411.2	Ability to understand the moral issues.
	C411.3	Ability to understand the codes of ethics.
	C411.4	Ability to understand the concept of safety and rights
	C411.5	Ability to understand the moral leadership
CS8080-Information Retrieval Techniques		
66	C412.1	To learn open source search engine framework and explore its capabilities
	C412.2	Compare and contrast various Information Retrieval models.
	C412.3	Apply appropriate method of clustering or classification
	C412.4	Design and implement innovative features in a search engine.
	C412.5	To design and implement recommender system
	C412.6	To learn deep neural network
CS8078-Green Computing		
67	C413.1	To learn the fundamentals of Green Computing.
	C413.2	To understand the Green Assets of enterprise and modelling
	C413.3	To analyze the Green computing Grid Framework for virtualization of IT systems.
	C413.4	To understand the issues related with Green compliance for Socio-cultural aspects of Green IT
	C413.5	To study and develop various case studies for The Environmentally Responsible Business Strategies (ERBS)
	C413.6	To apply various modern green computing tools and lead the road on Green Computing
CS8811-Project Work		
68	C414.1	Formulate a real world challenging problem ethically.
	C414.2	Develop the requirements of the project and analyse extensively the literature survey.

	C414.3	Express technical ideas, strategies and methodologies in written and oral presentations.
	C414.4	Develop sustainable solutions by formulating proper methodology and implement them.
	C414.5	Self-learn new tools, algorithms, and/or techniques that contribute to the software solution of the project
	C414.6	Work as a responsible member and possibly a leader of a team in developing software solutions.

3.1.2. CO-PO matrices of courses elected in 3.1.1 (six matrices to be mentioned; one per semester from 3rd to 8th semester) (05)

S.NO	SUB.CODE& NAME	COURSE OUTCOMES	PROGRAMME OUTCOMES											PSO		
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
III SEMESTER (2018-2019) ODD																	
1	CS8391 Data Structures	C203.1	3	2	3	-	-	-	-	-	-	-	-	-	2	1	1
		C203.2	3	3	3	-	-	-	-	-	-	-	-	-	2	1	1
		C203.3	3	2	3	-	-	-	-	-	-	-	-	-	2	1	1
		C203.4	2	3	2	-	-	-	-	-	-	-	-	-	2	1	1
		C203.5	2	2	2	-	-	-	-	-	-	-	-	-	2	1	1
		C203.6	2	3	2	-	-	2	-	-	2	-	-	2	-	-	-
		C203	3	3	3	-	-	2	-	-	2	-	-	2	2	1	1
IV SEMESTER (2018-2019) EVEN																	
2	CS8493 Operating Systems	C214.1	3	3	2	-	-	-	-	-	-	-	-	-	-	2	-
		C214.2	3	3	1	-	-	-	-	-	-	-	-	-	-	3	-
		C214.3	3	2	2	-	-	-	-	-	-	-	-	-	2	-	-
		C214.4	3	2	2	-	-	-	-	-	-	-	-	-	-	3	-
		C214.5	3	2	2	-	-	-	-	-	-	-	-	-	-	2	-
		C214.6	3	2	2	-	3	-	-	-	-	-	-	2	2	-	-
		C214	3	2	2	-	3	-	-	-	-	-	-	2	2	3	-
V SEMESTER (2019-2020) ODD																	
3	CS8591 Computer Networks	C302.1	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-
		C302.2	3	3	1	-	-	-	-	-	-	-	-	-	-	-	-
		C302.3	3	3	1	-	-	-	-	-	-	-	-	-	1	-	-
		C302.4	3	3	2	-	-	-	-	-	-	-	-	-	1	-	-
		C302.5	3	3	1	-	-	-	-	-	-	-	-	-	-	-	-
		C302.6	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-
		C302	3	3	2	-	-	-	-	-	-	-	-	-	1	-	-
VI SEMESTER (2019-2020) ODD																	
4		C312.1	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-

	CS861 Mobile Computing	C312.2	3	2	1	-	-	-	-	-	-	-	-	-	-	-
		C312.3	3	3	1	-	-	-	-	-	-	-	-	-	-	-
		C312.4	3	2	1	-	-	-	-	-	-	-	-	-	-	-
		C312.5	3	2	3	-	-	-	-	-	-	-	-	-	2	1
		C312.6	3	2	3	-	-	-	-	-	-	-	-	-	-	1
		C312	3	2	2	-	-	-	-	-	-	-	-	-	2	1
VII SEMESTER (2019-2020)EVEN																
5	CS8792 CRPTOGRAPHY AND NETWORK SECURITY	C402.1	3	3	2	-	-	-	-	-	-	-	-	-	3	3	2
		C402.2	3	2	3	-	-	-	-	-	-	-	-	-	3	3	2
		C402.3	3	2	3	-	-	-	-	-	-	-	-	-	3	2	2
		C402.4	3	2	2	-	-	-	-	-	-	-	-	-	3	3	3
		C402.5	3	3	2	-	-	-	-	-	-	-	-	-	3	3	3
		C402.6	3	2	2	2	2	2	-	2	2	-	3	2	2	2	2
		C402	3	2	2	2	2	2	-	2	2	-	3	2	3	3	2
VIII SEMESTER (2020-2021) EVEN																	
6	CS8811 PROJECT WORK	C414.1	2	3	2	3	1	2	2	2	3	3	3	3	3	1	1
		C414.2	2	3	3	2	2	2	1	1	2	2	2	2	2	2	1
		C414.3	1	1	1	1	3	1	1	1	1	1	1	1	1	1	3
		C414.4	2	2	2	2	2	2	2	2	3	3	3	3	2	2	1
		C414.5	2	2	2	2	2	2	2	2	2	2	3	2	2	1	2
		C414.6	3	3	3	3	2	2	2	2	2	2	2	1	2	2	2
		C414.1	2	3	2	3	1	2	2	2	3	3	3	3	3	1	1

3.1.3 Program level Course-PO matrix of all course INCLUDING first year course (10)

S.NO	SUB.CODE& NAME	COURSE OUTCOMES	PROGRAMME OUTCOMES												PSO		
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
I SEMESTER (2017-2018) ODD																	
1	HS8151 Communicative English	C101.1	-	-	-	-	-	-	-	2	3	3	-	2	-	-	-
		C101.2	-	-	-	-	-	-	-	2	3	3	-	2	3	3	-
		C101.3	-	-	-	-	-	-	-	2	3	3	-	2	-	-	-
		C101.4	-	-	-	-	-	-	-	2	3	3	-	2	-	-	-
		C101.5	-	-	-	-	-	-	-	2	3	3	-	2	-	1	-
		C101.6	-	-	-	-	-	-	-	2	3	3	-	2	1	1	-
		C101	-	-	-	-	-	-	-	2	3	3	-	2	2	2	-
2		C102.1	3	3	3	-	-	-	-	-	2	-	-	-	3	-	-
		C102.2	3	3	3	-	-	-	-	-	2	-	-	-	1	-	-

	MA8151 Engineering Mathematics I	C102.3	3	3	3	-	-	-	-	-	2	-	-	-	-	-	-
		C102.4	3	3	3	-	-	-	-	-	2	-	-	-	1	-	-
		C102.5	3	3	3	-	-	-	-	-	2	-	-	-	2	2	-
		C102.6	3	3	3	-	-	-	-	-	2	-	-	-	2	2	-
		C102	3	3	3	-	-	-	-	-	2	-	-	-	2	2	-
3	PH8151 Engineering Physics	C103.1	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-
		C103.2	3	3	3	-	-	-	-	-	-	-	-	-	3	3	-
		C103.3	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-
		C103.4	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-
		C103.5	3	3	3	-	-	-	-	-	-	-	-	-	-	1	-
		C103.6	3	3	3	-	-	-	-	-	-	-	-	-	1	1	-
		C103	3	3	3	-	-	-	-	-	-	-	-	-	2	2	-
4	CY8151 Engineering Chemistry	C104.1	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-
		C104.2	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-
		C104.3	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-
		C104.4	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-
		C104.5	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-
		C104.6	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-
		C104	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-
5	GE8151 Problem Solving and Python Programming	C105.1	3	2	2	-	-	-	-	-	-	-	-	-	1	-	1
		C105.2	3	2	2	-	-	-	-	-	-	-	-	-	1	-	1
		C105.3	3	2	2	-	-	-	-	-	-	-	-	-	1	-	1
		C105.4	3	2	2	-	-	-	-	-	-	-	-	-	1	-	1
		C105.5	3	2	2	-	-	-	-	-	-	-	-	-	1	-	1
		C105.6	3	2	2	-	-	-	-	-	-	-	-	-	1	-	1
		C105	3	2	2	-	-	-	-	-	-	-	-	-	1	-	1
6	GE8152 Engineering Graphics	C106.1	3	3	2	-	2	-	-	3	3	2	-	2	2	1	-
		C106.2	3	3	2	-	2	-	-	3	3	2	-	2	2	1	-
		C106.3	3	3	2	-	2	-	-	3	3	2	-	2	2	1	-
		C106.4	3	3	2	-	2	-	-	3	3	2	-	2	2	1	-
		C106.5	3	3	2	-	2	-	-	3	3	2	-	2	2	1	-
		C106.6	3	3	2	-	2	-	-	3	3	2	-	2	2	2	-
		C106	3	3	2	-	2	-	-	3	3	2	-	2	2	1	-
7	GE8161 Problem Solving and Python Programming Laboratory	C107.1	3	3	3	-	3	-	-	3	3	2	-	2	-	3	-
		C107.2	3	3	3	-	3	-	-	3	3	2	-	2	-	3	-
		C107.3	3	3	3	-	3	-	-	3	3	2	-	2	-	3	-
		C107.4	3	3	3	-	3	-	-	3	3	2	-	2	-	3	-
		C107.5	3	3	3	-	3	-	-	3	3	2	-	2	1	3	-
		C107.6	3	3	3	-	3	-	-	3	3	2	-	2	1	3	-
		C107	3	3	3	-	3	-	-	3	3	2	-	2	1	3	-
8		C108.1	3	3	2	-	-	-	-	3	3	2	-	-	-	-	1

	BS8161 Physics and Chemistry Laboratory	C108.2	3	3	2	-	-	-	-	3	3	2	-	-	-	-	1
		C108.3	3	3	2	-	-	-	-	3	3	2	-	-	-	-	-
		C108.4	3	3	2	-	-	-	-	3	3	2	-	-	-	-	-
		C108.5	3	3	2	-	-	-	-	3	3	2	-	-	-	-	-
		C108.6	3	3	2	-	-	-	-	3	3	2	-	-	-	-	-
		C108	3	3	2	-	-	-	-	3	3	2	-	-	-	-	1
II SEMESTER (2017-2018) EVEN																	
1	HS8251 Technical English	C109.1	-	-	-	-	-	-	-	2	3	3	-	2	-	-	3
		C109.2	-	-	-	-	-	-	-	2	3	3	-	2	3	3	-
		C109.3	-	-	-	-	-	-	-	2	3	3	-	2	-	-	-
		C109.4	-	-	-	-	-	-	-	2	3	3	-	2	-	-	-
		C109.5	-	-	-	-	-	-	-	2	3	3	-	2	-	1	1
		C109.6	-	-	-	-	-	-	-	2	3	3	-	2	1	1	-
		C109	-	-	-	-	-	-	-	2	3	3	-	2	2	2	2
2	MA8251 Engineering Mathematics II	C110.1	3	3	3	-	-	-	-	-	2	-	-	-	3	-	-
		C110.2	3	3	3	-	-	-	-	-	2	-	-	-	1	2	-
		C110.3	3	3	3	-	-	-	-	-	2	-	-	-	-	2	1
		C110.4	3	3	3	-	-	-	-	-	2	-	-	-	1	2	2
		C110.5	3	3	3	-	-	-	-	-	2	-	-	-	2	2	1
		C110.6	3	3	3	-	-	-	-	-	2	-	-	-	3	3	2
		C110	3	3	3	-	-	-	-	-	2	-	-	-	2	2	2
3	PH8252 Physics for Information Science	C111.1	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-
		C111.2	3	3	2	-	-	-	-	-	-	-	-	-	1	-	-
		C111.3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-
		C111.4	3	3	2	-	-	-	-	-	-	-	-	-	-	-	2
		C111.5	3	3	2	-	-	-	-	-	-	-	-	-	2	1	1
		C111.6	3	3	2	-	-	-	-	-	-	-	-	-	2	1	1
		C111	3	3	2	-	-	-	-	-	-	-	-	-	2	1	1
4	BE8255 Basic Electrical, Electronics and Measurement Engineering	C112.1	3	2	2	-	-	-	-	-	-	-	-	-	1	-	1
		C112.2	3	2	2	-	-	-	-	-	-	-	-	-	1	-	1
		C112.3	3	2	2	-	-	-	-	-	-	-	-	-	1	-	1
		C112.4	3	2	2	-	-	-	-	-	-	-	-	-	1	-	1
		C112.5	3	2	2	-	-	-	-	-	-	-	-	-	1	-	1
		C112.6	3	2	2	-	-	-	-	-	-	-	-	-	1	-	1
		C12	3	2	2	-	-	-	-	-	-	-	-	-	1	-	1
5	GE8291 Environmental Science and Engineering	C113.1	3	2	2	-	-	-	3	3	2	2	-	2	-	-	-
		C113.2	3	2	2	-	-	-	3	3	2	2	-	2	-	-	-
		C113.3	3	2	2	-	-	-	3	3	2	2	-	2	-	-	-
		C113.4	3	2	2	-	-	-	3	3	2	2	-	2	-	-	-
		C113.5	3	2	2	-	-	-	3	3	2	2	-	2	1	1	-

		C113.6	3	2	2	-	-	-	3	3	2	2	-	2	1	1	-
		C113	3	2	2	-	-	-	3	3	2	2	-	2	1	1	-
6	CS8251 Programming in C	C114.1	3	3	3	-	-	-	-	2	2	2	-	2	3	1	1
		C114.2	3	3	3	-	-	-	-	2	2	2	-	2	3	1	1
		C114.3	3	3	3	-	-	-	-	2	2	2	-	2	3	1	1
		C114.4	3	3	3	-	-	-	-	2	2	2	-	2	2	1	1
		C114.5	3	3	3	-	-	-	-	2	2	2	-	2	1	2	1
		C114.6	3	3	3	-	-	-	-	2	2	2	-	2	1	3	1
		C114	3	3	3	-	-	-	-	2	2	2	-	2	2	2	1
7	GE8261 Engineering Practices Laboratory	C115.1	3	3	3	2	2	3	-	3	2	3	-	1	-	-	-
		C115.2	3	3	3	2	2	3	-	3	2	3	-	1	-	-	-
		C115.3	3	3	3	2	2	3	-	3	2	3	-	1	-	-	-
		C115.4	3	3	3	2	2	3	-	3	2	3	-	1	-	-	-
		C115.5	3	3	3	2	2	3	-	3	2	3	-	1	-	-	-
		C115.6	3	3	3	2	2	3	-	3	2	3	-	1	-	-	-
		C115	3	3	3	2	2	3	-	3	2	3	-	1	-	-	-
8	CS8261 C Programming Laboratory	C116.2	3	3	3	-	-	-	-	2	2	2	-	2	3	1	-
		C116.3	3	3	3	-	-	-	-	2	2	2	-	2	3	1	-
		C116.4	3	3	3	-	-	-	-	2	2	2	-	2	3	1	-
		C116.5	3	3	3	-	-	-	-	2	2	2	-	2	2	1	-
		C116.6	3	3	3	-	-	-	-	2	2	2	-	2	1	2	-
		C116.7	3	3	3	-	-	-	-	2	2	2	-	2	1	3	1
		C116	3	3	3	-	-	-	-	2	2	2	-	2	2	2	1
III SEMESTER (2018-2019)ODD																	
1	MA8351 Discrete Mathematics	C201.1	3	3	2	-	-	-	-	-	2	-	-	-	-	-	1
		C201.2	3	3	2	-	-	-	-	-	2	-	-	-	1	-	1
		C201.3	3	3	2	-	-	-	-	-	2	-	-	-	-	1	1
		C201.4	3	3	2	-	-	-	-	-	2	-	-	-	1	1	1
		C201.5	2	3	2	-	-	-	-	-	2	-	-	-	-	-	-
		C201.6	3	3	2	-	-	-	-	-	2	-	-	-	1	1	1
		C201	3	3	2	-	-	-	-	-	2	-	-	-	1	1	1
2	CS8351 Digital Principles and System Design	C202.1	3	3	2	-	-	-	-	-	-	-	-	-	1	1	1
		C202.2	3	3	2	-	-	-	-	-	-	-	-	-	1	2	1
		C202.3	3	3	2	-	-	-	-	-	-	-	-	-	1	1	1
		C202.4	3	3	2	-	-	-	-	-	-	-	-	-	1	1	1
		C202.5	2	3	2	-	-	-	-	-	-	-	-	-	1	1	1
		C202.6	3	3	2	-	-	-	-	-	-	-	-	1	1	1	1
		C202	3	3	2	-	-	-	-	-	-	-	-	1	1	1	1
3	CS8391 Data Structures	C203.1	3	2	3	-	-	-	-	-	-	-	-	-	2	1	1
		C203.2	3	3	3	-	-	-	-	-	-	-	-	-	2	1	1

		C203.3	3	2	3	-	-	-	-	-	-	-	-	-	2	1	1
		C203.4	2	3	2	-	-	-	-	-	-	-	-	-	2	1	1
		C203.5	2	2	2	-	-	-	-	-	-	-	-	-	2	1	1
		C203.6	2	3	2	-	-	2	-	-	2	-	-	2	-	-	-
		C203	3	3	3	-	-	2	-	-	2	-	-	2	2	1	1
4	CS8392 Object Oriented Programming	C204.1	3	3	2	-	-	-	-	-	-	-	-	-	2	-	-
		C204.2	3	2	3	-	-	-	-	-	-	-	-	-	2	-	-
		C204.3	3	2	3	-	-	-	-	-	-	-	-	-	2	1	1
		C204.4	3	3	3	-	-	-	-	-	-	-	-	-	-	2	2
		C204.5	3	2	3	-	-	-	-	-	-	-	-	-	-	2	2
		C204.6	3	1	3	-	-	-	-	-	2	-	-	2	1	-	-
		C204	3	2	3	-	-	-	-	-	2	-	-	2	2	2	2
5	EC8395 Communication Engineering	C205.1	3	3	3	-	-	-	-	-	-	-	-	-	3	1	1
		C205.2	3	3	3	-	-	-	-	-	-	-	-	-	3	1	1
		C205.3	3	3	2	-	-	-	-	-	-	-	-	-	3	1	1
		C205.4	3	3	3	-	-	-	-	-	-	-	-	-	3	1	1
		C205.5	3	3	3	-	-	-	-	-	-	-	-	-	3	1	1
		C205.6	-	-	-	-	-	-	-	-	-	3	-	3	3	1	1
		C205	3	3	3	-	-	-	-	-	-	3	-	3	3	1	1
6	CS8381 Data Structures Laboratory	C206.1	3	3	3	-	-	-	-	3	3	2	-	3	3	2	1
		C206.2	3	3	3	-	-	-	-	2	3	-	-	3	3	2	1
		C206.3	3	3	3	-	-	-	-	3	2	2	-	-	3	2	1
		C206.4	3	3	3	-	-	-	-	2	-	2	-	1	3	2	1
		C206.5	3	3	3	-	-	-	-	-	1	1	-	2	3	2	1
		C206.6	3	3	3	-	-	-	-	2	2	2	-	2	1	1	-
		C206	3	3	3	-	-	-	-	2	2	2	-	2	3	2	1
7	CS8383 Object Oriented Programming Laboratory	C207.1	3	2	2	-	-	-	-	2	3	2	-	3	-	3	-
		C207.2	3	2	2	-	-	-	-	2	2	2	-	2	-	3	-
		C207.3	3	3	2	-	-	-	-	2	2	2	-	2	-	3	-
		C207.4	3	3	2	-	-	-	-	2	3	2	-	3	-	3	-
		C207.5	3	2	3	-	-	-	-	3	3	2	-	3	1	3	-
		C207.6	3	3	3	-	-	-	-	2	2	2	-	2	1	3	-
		C207	3	3	2	-	-	-	-	2	3	2	-	3	1	3	-
8	CS8382 Digital Systems Laboratory	C208.1	3	3	3	-	-	2	-	2	2	2	-	2	3	2	1
		C208.2	3	3	3	-	-	2	-	1	1	1	-	1	3	2	1
		C208.3	3	3	3	-	-	2	-	1	1	1	-	1	3	2	1
		C208.4	3	2	3	-	-	3	-	1	1	1	-	1	3	2	1
		C208.5	3	2	3	-	-	2	-	1	1	1	-	2	3	2	1
		C208.6	3	3	3	-	-	1	-	-	2	2	-	2	1	1	1
		C208	3	3	3	-	-	2	-	1	1	1	-	2	3	2	1

9	HS8381 Interpersonal Skills/Listening &Speaking	C209.1	-	-	-	-	-	-	-	3	1	3	-	-	1	-	1
		C209.2	-	-	-	-	-	-	-	2	2	2	-	3	1	1	-
		C209.3	-	-	-	-	-	-	-	3	-	3	-	-	1	1	1
		C209.4	-	-	-	-	-	-	-	3	1	3	-	1	1	-	1
		C209.5	-	-	-	-	-	-	-	3	2	3	-	-	1	1	-
		C209.6	-	-	-	-	-	-	-	3	-	3	-	-	-	-	-
		C209	-	-	-	-	-	-	-	3	2	3	-	2	1	1	1
IV SEMESTER (2018-2019)EVEN																	
1	MA842 Probability and Queueing Theory	C210.1	3	2	-	-	-	-	-	-	1	-	-	-	-	1	1
		C210.2	2	-	-	-	-	-	-	-	-	1	-	-	-	2	-
		C210.3	1	2	-	-	-	-	-	-	2	-	-	-	-	-	-
		C210.4	2	-	1	-	-	-	-	-	1	-	-	1	-	-	-
		C210.5	1	-	-	-	-	-	-	-	-	1	-	-	-	2	2
		C210.6	1	1	-	-	-	-	-	-	-	-	-	1	-	1	-
		C210	2	2	1	-	-	-	-	-	1	1	-	1	-	2	2
2	CS8491 Computer Architecture	C211.1	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-
		C211.2	3	3	3	-	-	-	-	-	-	-	-	-	1	-	1
		C211.3	2	2	3	-	-	-	-	-	-	-	-	-	1	-	1
		C211.4	2	2	2	-	-	-	-	-	-	-	-	-	-	-	1
		C211.5	3	2	3	-	-	-	-	-	-	-	-	-	1	-	1
		C211.6	3	3	3	-	-	-	-	-	-	-	-	1	-	-	-
		C211	3	2	3	-	-	-	-	-	-	-	-	1	1	-	1
3	CS8492 Database Management Systems	C212.1	3	2	2	-	-	-	-	-	-	-	-	-	2	-	-
		C212.2	3	2	2	-	-	-	-	-	-	-	-	-	2	-	1
		C212.3	2	2	3	-	-	-	-	-	-	-	-	-	2	-	-
		C212.4	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-
		C212.5	3	2	3	-	-	-	-	-	-	-	-	-	-	-	-
		C212.6	3	2	2	-	2	-	-	-	-	-	-	-	-	-	-
		C212	3	2	2	-	2	-	-	-	-	-	-	-	2	-	1
4	CS8451 Design and Analysis of Algorithms	C213.1	3	3	2	-	-	-	-	-	2	1	-	2	-	-	-
		C213.2	3	3	3	-	-	-	-	-	1	1	-	2	-	-	-
		C213.3	3	3	3	-	-	-	-	-	2	2	-	2	1	-	-
		C213.4	3	2	2	-	-	-	-	-	2	2	-	2	1	-	-
		C213.5	3	3	2	-	-	-	-	-	2	2	-	2	2	-	-
		C213.6	3	2	2	-	-	-	-	-	2	2	-	2	1	-	-
		C213	3	3	2	-	-	-	-	-	2	2	-	2	1	-	-
5	CS8493 Operating Systems	C214.1	3	3	2	-	-	-	-	-	-	-	-	-	-	2	-
		C214.2	3	3	1	-	-	-	-	-	-	-	-	-	-	3	-
		C214.3	3	2	2	-	-	-	-	-	-	-	-	-	2	-	-
		C214.4	3	2	2	-	-	-	-	-	-	-	-	-	-	3	-

		C214.5	3	2	2	-	-	-	-	-	-	-	-	-	-	2	-
		C214.6	3	2	2	-	3	-	-	-	-	-	-	2	2	-	-
		C214	3	2	2	-	3	-	-	-	-	-	-	2	2	3	-
6	CS8494 Software Engineering	C215.1	3	2	2	-	2	2	-	2	2	3	-	2	-	2	-
		C215.2	3	1	1	-	1	1	-	1	1	3	-	1	2	2	-
		C215.3	3	1	1	-	1	1	-	1	1	3	-	1	2	2	-
		C215.4	3	2	2	-	2	2	-	2	2	1	-	2	2	2	-
		C215.5	3	2	2	-	2	2	-	2	2	2	-	2	1	2	-
		C215.6	3	3	3	-	3	3	-	3	3	2	-	2	1	2	2
		C215	3	2	2	-	2	2	-	2	2	2	-	2	2	2	2
7	CS8481 Database Management Systems Laboratory	C216.1	3	2	2	-	-	-	-	1	2	-	-	1	2	-	-
		C216.2	3	3	2	-	-	-	-	1	1	-	-	1	2	-	-
		C216.3	3	2	3	-	-	-	-	2	2	-	-	1	2	2	-
		C216.4	3	2	2	-	-	-	-	2	2	1	-	1	2	-	-
		C216.5	3	3	3	-	-	-	-	1	1	1	-	1	2	-	-
		C216.6	3	3	3	-	-	-	-	2	2	-	-	1	-	1	-
		C216	3	3	3	-	-	-	-	2	2	1	-	1	2	2	-
8	CS8461 Operating Systems Laboratory	C217.1	2	-	-	-	-	-	-	2	1	2	-	-	-	-	-
		C217.2	2	1	1	-	-	-	-	2	1	2	-	2	1	-	1
		C217.3	2	1	-	-	-	-	-	2	1	2	-	2	1	-	1
		C217.4	2	2	1	-	-	-	-	2	1	2	-	2	1	-	1
		C217.5	2	2	1	-	-	-	-	2	1	2	-	2	1	-	1
		C217.6	3	2	2	-	-	-	-	2	2	2	-	1	1	-	1
		C217	2	2	1	-	-	-	-	2	1	2	-	2	1	-	1
9	HS8461 Advanced Reading and Writing	C218.1	-	-	-	-	-	-	-	2	3	2	-	3	-	-	-
		C218.2	-	-	-	-	-	-	-	1	3	3	-	3	-	1	-
		C218.3	-	-	-	-	-	-	-	2	3	2	-	3	1	-	-
		C218.4	-	-	-	-	-	-	-	2	3	2	-	3	1	-	-
		C218.5	-	-	-	-	-	-	-	1	3	2	-	3	-	-	1
		C218.6	-	-	-	-	-	-	-	1	3	2	-	3	-	-	-
		C218	-	-	-	-	-	-	-	2	3	2	-	3	1	1	1
V SEMESTER (2019-2020)ODD																	
1	MA8551 Algebra and Number Theory	C301.1	3	3	2	-	-	-	-	-	1	-	-	-	1	1	-
		C301.2	3	3	1	-	-	-	-	-	1	-	-	-	1	1	1
		C301.3	3	3	1	-	-	-	-	-	-	-	-	-	2	2	1
		C301.4	3	3	2	-	-	-	-	-	-	-	-	-	1	-	2
		C301.5	3	3	1	-	-	-	-	-	-	-	-	-	2	2	2
		C301.6	3	3	2	-	-	-	-	-	2	-	-	-	1	1	1
		C301	3	3	2	-	-	-	-	-	1	-	-	-	1	1	1
2		C302.1	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-

	CS8591 Computer Networks	C302.2	3	3	1	-	-	-	-	-	-	-	-	-	-	-	-
		C302.3	3	3	1	-	-	-	-	-	-	-	-	-	1	-	-
		C302.4	3	3	2	-	-	-	-	-	-	-	-	-	1	-	-
		C302.5	3	3	1	-	-	-	-	-	-	-	-	-	-	-	-
		C302.6	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-
		C302	3	3	2	-	-	-	-	-	-	-	-	-	1	-	-
3	EC8691 Microprocessors and Microcontrollers	C303.1	2	1	3	-	-	-	-	-	-	-	-	-	-	-	-
		C303.2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-
		C303.3	2	1	3	-	-	-	-	-	-	-	-	-	-	-	-
		C303.4	2	2	3	-	-	-	-	-	-	-	-	-	-	-	-
		C303.5	2	1	3	-	-	-	-	-	-	-	-	-	-	-	-
		C303.6	2	1	3	-	-	-	-	-	-	-	-	-	1	1	1
		C303	2	1	3	-	-	-	-	-	-	-	-	-	1	1	1
4	CS851 Theory of Computation	C304.1	3	2	-	-	-	-	-	-	-	-	-	-		-	-
		C304.2	3	3	-	-	-	-	-	-	-	-	-	-	1	-	-
		C304.3	3	3	-	-	-	-	-	-	-	-	-	-	1	-	-
		C304.4	3	3	2	-	-	-	-	-	-	-	-	-	1	-	-
		C304.5	3	3	3	-	-	-	-	-	-	-	-	-	1	1	-
		C304.6	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-
		C304	3	3	3	-	-	-	-	-	-	-	-	-	1	1	-
5	CS8592 Object Oriented Analysis and Design	C305.1	3	2	2	-	-	2	-	-	-	-	-	-	-	-	-
		C305.2	3	2	2	-	-	2	-	-	-	-	-	-	2	-	-
		C305.3	3	3	2	-	-	1	-	-	-	-	-	-	2	1	-
		C305.4	3	2	3	-	-	2	-	-	-	-	-	-	2	1	-
		C305.5	3	2	3	-	-	2	-	-	-	-	-	-	-	-	-
		C305.6	3	3	2	-	-	2	-	-	-	-	-	-	-	2	-
		C305	3	2	2	-	-	2	-	-	-	-	-	-	2	1	-
6	OCE552 GEOGRAPHIC INFORMATION SYSTEM	C306.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		C306.2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		C306.3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		C306.4	2	1	-	-	-	-	-	-	-	-	-	1	-	-	-
		C306.5	2	-	-	-	-	-	-	-	-	-	-	-	1	-	-
		C306.6	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		C306	2	1	-	-	-	-	-	-	-	-	-	1	1	-	-
7	EC8681 Microprocessors and Microcontrollers Laboratory	C307.1	2	2	-	-	-	-	-	-	2	3	-	1	-	-	-
		C307.2	1	2	2	-	-	-	-	2	-	3	-	1	-	-	-
		C307.3	1	2	2	-	-	-	-	-	-	3	-	1	-	-	-
		C307.4	2	2	2	-	-	-	-	3	-	2	-	1	-	-	-
		C307.5	-	1	-	-	-	-	-	1	-	3	-	1	-	-	-
		C307.6	2	2	3	-	-	-	-	1	1	1	-	3	1	1	1

		C307	2	2	2	-	-	-	-	2	2	3	-	1	1	1	1
8	CS8582 Object Oriented Analysis and Design Laboratory	C308.1	3	3	3	-	2	3	-	2	3	3	-	2	3	-	-
		C308.2	2	3	3	-	3	3	-	2	3	3	-	2	2	-	-
		C308.3	2	3	3	-	3	3	-	2	3	3	-	2	2	-	-
		C308.4	2	3	3	-	3	3	-	2	3	2	-	2	2	-	-
		C308.5	2	2	2	-	2	2	-	2	2	2	-	2	3	-	-
		C308.6	2	2	3	-	3	2	-	2	2	2	-	2	2	-	-
		C308	2	3	3	-	3	3	-	2	3	3	-	2	2	-	-
9	CS8581 Networks Laboratory	C309.1	2	1	1	-	-	-	-	1	1	1	-	1	2	-	2
		C309.2	3	2	2	-	-	-	-	3	3	3	-	3	2	-	2
		C309.3	3	2	2	-	-	-	-	2	2	2	-	2	2	-	2
		C309.4	3	2	2	-	-	-	-	1	1	1	-	1	2	-	2
		C309.5	3	2	2	-	-	-	-	3	3	3	-	3	2	-	2
		C309.6	3	2	2	-	-	-	-	3	3	3	-	3	2	-	2
		C309	3	2	2	-	-	-	-	2	2	2	-	2	2	-	2
VI SEMESTER (2019-2020)EVEN																		
1	CS8651 Internet Programming	C310.1	3	2	3	-	-	-	-	1	1	1	-	2	-	-	-
		C310.2	3	2	3	-	-	-	-	1	1	1	-	2	-	-	-
		C310.3	3	2	3	-	-	-	-	1	1	1	-	2	-	2	-
		C310.4	3	2	3	-	-	-	-	1	1	1	-	2	2	-	-
		C310.5	3	2	3	-	-	-	-	1	1	1	-	2	-	2	-
		C310.6	3	2	3	-	-	-	-	1	2	2	-	2	2	-	-
		C310	3	2	3	-	-	-	-	1	1	1	-	2	2	2	-
2	CS8691 Artificial Intelligence	C311.1	3	3	3	-	-	-	-	-	-	-	-	-	2	2	-
		C311.2	3	3	3	-	-	-	-	-	-	-	-	-	1	1	-
		C311.3	3	3	3	-	-	-	-	-	-	-	-	-	1	1	-
		C311.4	3	3	3	-	-	-	-	-	-	-	-	-	1	1	-
		C311.5	3	3	3	-	-	-	-	-	-	-	-	-	2	2	2
		C311.6	3	3	3	-	-	-	-	-	-	-	-	2	1	1	-
		C311	3	3	3	-	-	-	-	-	-	-	-	2	1	1	2
3	CS861 Mobile Computing	C312.1	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-
		C312.2	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-
		C312.3	3	3	1	-	-	-	-	-	-	-	-	-	-	-	-
		C312.4	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-
		C312.5	3	2	3	-	-	-	-	-	-	-	-	-	-	2	1
		C312.6	3	2	3	-	-	-	-	-	-	-	-	-	-	-	1
		C312	3	2	2	-	-	-	-	-	-	-	-	-	-	2	1
4	CS862 Compiler Design	C313.1	3	2	2	-	-	-	-	1	1	1	-	2	-	-	-
		C313.2	2	2	2	-	-	-	-	1	1	1	-	1	-	-	-
		C313.3	2	2	3	-	-	-	-	1	2	2	-	2	-	2	-

		C313.4	2	3	2	-	-	-	-	1	1	1	-	2	-	-	-
		C313.5	3	2	2	-	-	-	-	2	1	1	-	2	-	-	-
		C313.6	3	2	3	-	-	-	-	1	2	1	-	1	-	-	-
		C313	3	2	2	-	-	-	-	1	1	1	-	2	-	2	-
5	CS863 Distributed Systems	C314.1	3	2	1	-	-	-	-	-	-	-	-	-	2	-	-
		C314.2	3	2	1	-	-	-	-	-	-	-	-	-	-	-	1
		C314.3	3	2	1	-	-	-	-	-	-	-	-	-	-	-	1
		C314.4	3	1	1	-	-	-	-	-	-	-	-	-	-	-	1
		C314.5	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-
		C314.6	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
		C314	3	2	1	-	-	-	-	-	-	-	-	-	2	-	1
6	CS875DATA WAREHOUSING AND DATA MINING	C315.1	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
		C315.2	3	2	2	-	-	-	-	-	-	-	-	-	1	1	-
		C315.3	3	2	3	-	-	-	-	-	-	-	-	-	1	1	-
		C315.4	3	2	2	-	-	-	-	-	-	-	-	-	1	1	-
		C315.5	3	2	2	-	-	-	-	-	-	-	-	-	1	1	1
		C315.6	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-
		C315	3	2	2	-	-	-	-	-	-	-	-	-	1	1	1
7	IT876/ SOFTWARE TESTING	C316.1	1	-	2	-	-	-	-	-	-	-	-	-	1	2	-
		C316.2	1	2	-	-	-	-	-	-	-	-	-	-	1	2	-
		C316.3	1	-	1	-	-	-	-	-	-	-	-	-	2	3	-
		C316.4	1	-	-	-	-	-	-	-	2	2	-	-	1	2	-
		C316.5	1	-	-	-	1	-	-	-	-	-	-	-	2	3	-
		C316.6	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-
		C316	1	2	2	-	2	-	-	-	2	2	-	-	1	2	-
8	CS8662/ MOBILE APPLICATION DEVELOPENT LABORATORY	C317.1	3	3	2	-	3	2	-	1	2	1	-	2	2	-	1
		C317.2	2	2	3	-	3	2	-	1	2	2	-	2	2	-	1
		C317.3	3	2	3	-	3	2	-	1	2	2	-	2	2	-	1
		C317.4	2	1	3	-	3	2	-	1	3	1	-	2	2	-	1
		C317.5	2	1	3	-	3	2	-	1	3	1	-	2	2	-	1
		C317.6	3	2	3	-	3	2	-	2	3	3	-	3	2	-	2
		C317	3	2	3	-	3	2	-	1	3	2	-	2	2	-	-
9	CS8661/INTERNET PROGRAMMING LABORATORY	C318.1	3	2	3	-	2	-	-	1	1	1	-	2	-	-	-
		C318.2	3	2	3	-	2	-	-	1	1	1	-	2	-	-	-
		C318.3	3	2	3	-	2	-	-	1	1	1	-	2	-	2	-
		C318.4	3	2	3	-	2	-	-	1	1	1	-	2	-	2	-
		C318.5	3	2	3	-	2	-	-	1	1	1	-	2	-	-	-
		C318.6	3	2	3	-	2	-	-	1	1	1	-	2	-	3	-
		C318	3	2	3	-	2	-	-	1	1	1	-	2	-	2	-
10		C319.1	-	-	-	-	-	3	-	-	-	3	-	3	-	-	-

	HS8581/PROFESSIONAL COMMUNICATION LABORATORY	C319.2	-	-	-	-	-	2	-	-	-	3	-	3	2	-	-
		C319.3	-	-	-	-	-	3	-	-	-	3	-	2	1	1	-
		C319.4	-	-	-	-	-	2	-	-	-	3	-	3	-	1	-
		C319.5	-	-	-	-	-	3	-	-	-	3	-	3	-	1	-
		C319.6	-	-	-	-	-	3	-	-	-	3	-	3	-	-	-
		C319	-	-	-	-	-	3	-	-	-	3	-	3	2	1	-
11	MINI PROJECT	C320.1	2	3	2	3	1	2	2	2	3	3	3	3	-	-	-
		C320.2	2	3	3	2	2	2	1	1	2	2	2	2	-	-	-
		C320.3	1	1	1	1	3	1	1	1	1	1	1	1	-	-	-
		C320.4	2	2	2	2	2	2	2	2	3	3	3	3	2	1	-
		C320.5	2	2	2	2	2	2	2	2	2	2	3	2	2	-	-
		C320.6	3	3	3	3	2	2	2	2	2	2	2	1	1	-	-
		C320	2	2	2	2	2	2	2	2	2	2	2	2	2	1	-
VII SEMESTER (2020-2021)ODD																	
1	MG8591/ PRINCIPLES OF MANAGEMENT	C401.1	3	3	2	-	-	-	-	-	-	-	3	-	2	2	2
		C401.2	3	2	2	-	-	-	-	-	-	-	2	-	3	3	3
		C401.3	3	3	2	-	-	-	-	-	-	-	2	-	3	3	3
		C401.4	2	3	3	-	-	-	-	-	-	-	2	-	2	2	3
		C401.5	3	2	2	-	-	-	-	-	-	-	3	-	3	3	2
		C401.6	3	3	2	-	-	-	-	-	-	-	2	-	2	2	2
		C401	3	3	2	-	-	-	-	-	-	-	2	-	3	3	3
2	CS8792/CRPTOGRAPHY AND NETWORK SECURITY	C402.1	3	3	2	-	-	-	-	-	-	-	-	-	3	3	2
		C402.2	3	2	3	-	-	-	-	-	-	-	-	-	3	3	2
		C402.3	3	2	3	-	-	-	-	-	-	-	-	-	3	2	2
		C402.4	3	2	2	-	-	-	-	-	-	-	-	-	3	3	3
		C402.5	3	3	2	-	-	-	-	-	-	-	-	-	3	3	3
		C402.6	3	2	2	2	2	2	-	2	2	-	3	2	2	2	2
		C402	3	2	2	2	2	2	-	2	2	-	3	2	3	3	2
3	CS8791/ COLUD COMPUTING	C403.1	2	3	3	-	-	-	-	-	-	-	-	-	2	3	3
		C403.2	2	3	3	-	-	-	-	-	-	-	-	-	3	2	2
		C403.3	2	3	3	-	-	-	-	-	-	-	-	-	2	3	3
		C403.4	2	3	3	-	-	-	-	-	-	-	-	-	2	3	2
		C403.5	2	3	3	-	-	-	-	-	-	-	-	-	3	2	2
		C403.6	3	1	3	-	-	-	-	-	-	-	-	-	3	3	2
		C403	2	3	3	-	-	-	-	-	-	-	-	-	3	3	2
4	OME752/SUPPLY CHAIN MANAGEMENT	C404.1	1	-	-	-	-	1	1	1	1	-	-	3	1	1	1
		C404.2	1	-	-	-	-	1	2	1	1	2	-	3	1	2	1
		C404.3	2	-	-	-	-	1	2	1	1	2	-	3	3	3	2
		C404.4	1	-	-	-	-	1	1	1	1	2	-	3	2	2	1
		C404.5	1	-	-	-	-	1	2	1	1	-	-	3	3	3	3

		C404.6	1	-	-	-	-	1	1	1	1	-	-	3	1	2	1
		C404	1	-	-	-	-	1	2	1	1	2	-	3	2	2	2
5	CS891/BIG DATA ANALYTICS	C405.1	3	3	3	-	3	3	-	-	-	3	-	-	2	-	-
		C405.2	2	2	2	-	2	2	-	-	-	2	-	-	2	-	-
		C405.3	2	2	2	-	2	2	-	-	-	2	-	-	2	-	-
		C405.4	2	2	2	-	2	2	-	-	-	2	-	-	2	-	-
		C405.5	2	2	2	-	2	2	-	-	-	2	-	-	2	-	-
		C405.6	2	2	2	-	2	2	-	-	-	2	-	-	2	-	1
		C405	2	2	2	-	2	2	-	-	-	2	-	-	2	-	1
5	IT875/SOFTWARE PROJECT MANAGEMENT	C406.1	3	3	2	-	-	3	-	3	3	2	3	3	3	2	3
		C406.2	3	2	3	-	-	3	-	3	3	3	3	3	2	3	2
		C406.3	3	2	2	-	-	2	-	2	3	2	2	2	2	2	2
		C406.4	3	2	3	-	-	2	-	3	2	3	3	3	3	3	3
		C406.5	3	2	2	-	-	3	-	3	3	3	2	3	2	2	3
		C406.6	3	2	2	-	-	2	-	2	2	2	3	2	2	2	2
		C406	3	2	2	-	-	3	-	3	3	3	3	3	2	2	3
6	CS873/C# AND .NET PROGRAMMING	C407.1	2	-	3	-	3	-	-	-	3	2	-	-	2	-	-
		C407.2	2	-	2	-	-	-	-	-	-	-	-	-	2	-	-
		C407.3	2	-	3	-	3	-	-	-	2	2	-	-	2	-	-
		C407.4	2	-	3	-	3	-	-	-	1	1	-	-	2	-	-
		C407.5	2	-	-	-	-	-	-	-	1	1	-	-	2	-	-
		C407.6	2	-	3	-	3	-	-	-	2	2	-	-	2	-	1
		C407	2	-	3	-	3	-	-	-	2	2	-	-	2	-	1
7	CS888/WIRELESS ADHOC AND SENSOR NETWORK	C408.1	3	-	1	-	-	-	-	-	-	-	-	-	-	2	-
		C408.2	3	1	2	-	-	-	-	-	-	-	-	-	-	2	-
		C408.3	3	1	3	-	-	-	-	-	-	-	-	-	-	2	-
		C408.4	3	1	2	-	-	-	-	-	-	-	-	-	-	2	-
		C408.5	2	1	2	-	-	-	-	-	-	-	-	-	-	2	-
		C408.6	2	1	2	-	-	-	-	-	-	-	-	2	-	2	-
		C408	3	1	2	-	-	-	-	-	-	-	-	2	-	2	-
8	CLOUD COMPUTING LABORATORY	C409.1	3	2	2	-	2	-	-	1	1	2	-	1	2	3	2
		C409.2	2	2	3	-	3	-	-	1	1	1	-	1	3	3	2
		C409.3	3	2	2	-	2	-	-	1	2	1	-	1	2	2	2
		C409.4	2	2	3	-	3	-	-	1	2	1	-	1	2	3	2
		C409.5	3	3	2	-	2	-	-	2	2	2	-	2	2	2	1
		C409.6	2	2	2	-	2	-	-	1	2	1	-	2	2	3	2
		C409	3	2	2	-	2	-	-	1	2	1	-	1	2	3	2
7	IT8761/SECURITY LABORATORY	C410.1	3	3	3	-	2	-	-	2	1	1	-	2	2	2	3
		C410.2	3	3	3	-	2	-	-	2	1	1	-	2	1	2	1
		C410.3	3	3	2	-	3	-	-	3	2	2	-	3	3	1	2

		C410.4	3	3	2	-	3	-	-	3	2	2	-	3	2	1	2
		C410.5	3	3	2	-	3	-	-	2	1	1	-	2	2	2	1
		C410.6	3	3	3	-	3	-	-	3	2	2	-	2	3	2	3
		C410	3	3	3	-	3	-	-	3	2	2	-	2	2	2	2
VIII SEMESTER (2020-2021)EVEN																	
1	PROFESSIONAL ETHICS	C411.1	-	-	-	-	-	1	1	3	1	1	-	3	-	-	1
		C411.2	-	-	-	-	-	1	1	3	1	1	-	3	-	-	2
		C411.3	-	-	-	-	-	1	1	3	1	1	-	2	1	-	3
		C411.4	-	-	-	-	-	1	1	3	1	1	-	2	-	-	3
		C411.5	-	-	-	-	-	1	1	-	1	1	-	2	-	-	3
		C411.6	-	-	-	-	-	2	1	3	1	1	-	2	-	-	3
		C411	-	-	-	-	-	1	1	3	1	1	-	2	1	-	3
2	CS878/ GREEN COMPUTING	C412.1	3	3	3	-	-	-	-	-	-	-	-	-	3	2	2
		C412.2	3	2	1	-	-	-	-	-	-	-	-	-	2	-	2
		C412.3	3	3	3	-	-	-	-	-	-	-	-	-	2	1	-
		C412.4	3	1	2	-	-	-	-	-	-	-	-	-	2	2	3
		C412.5	3	3	3	-	-	-	-	-	-	-	-	-	2	2	3
		C412.6	3	3	2	-	-	-	-	-	-	-	-	-	2	2	3
		C412	3	3	2	-	-	-	-	-	-	-	-	-	2	2	3
3	CS8080/Information Retrieval Techniques	C413.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		C413.2	3	3	3	-	-	-	-	-	-	-	-	-	1	-	-
		C413.3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		C413.4	3	3	3	-	-	-	-	-	-	-	-	-	1	-	-
		C413.5	3	3	-	-	-	-	-	-	-	-	-	-	-	1	1
		C413.6	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		C413	3	3	3	-	-	-	-	-	-	-	-	-	1	1	1
4	CS8811/PROJECT WORK	C414.1	2	3	2	3	1	2	2	2	3	3	3	3	3	1	1
		C414.2	2	3	3	2	2	2	1	1	2	2	2	2	2	2	1
		C414.3	1	1	1	1	3	1	1	1	1	1	1	1	1	1	3
		C414.4	2	2	2	2	2	2	2	2	3	3	3	3	2	2	1
		C414.5	2	2	2	2	2	2	2	2	2	2	3	2	2	1	2
		C414.6	3	3	3	3	2	2	2	2	2	2	2	1	2	2	2

3.2. Attainment of Course Outcome (50)

3.2.1. Describe the assessment processes used to gather the data upon which the evaluation of Course Outcome is based (10)

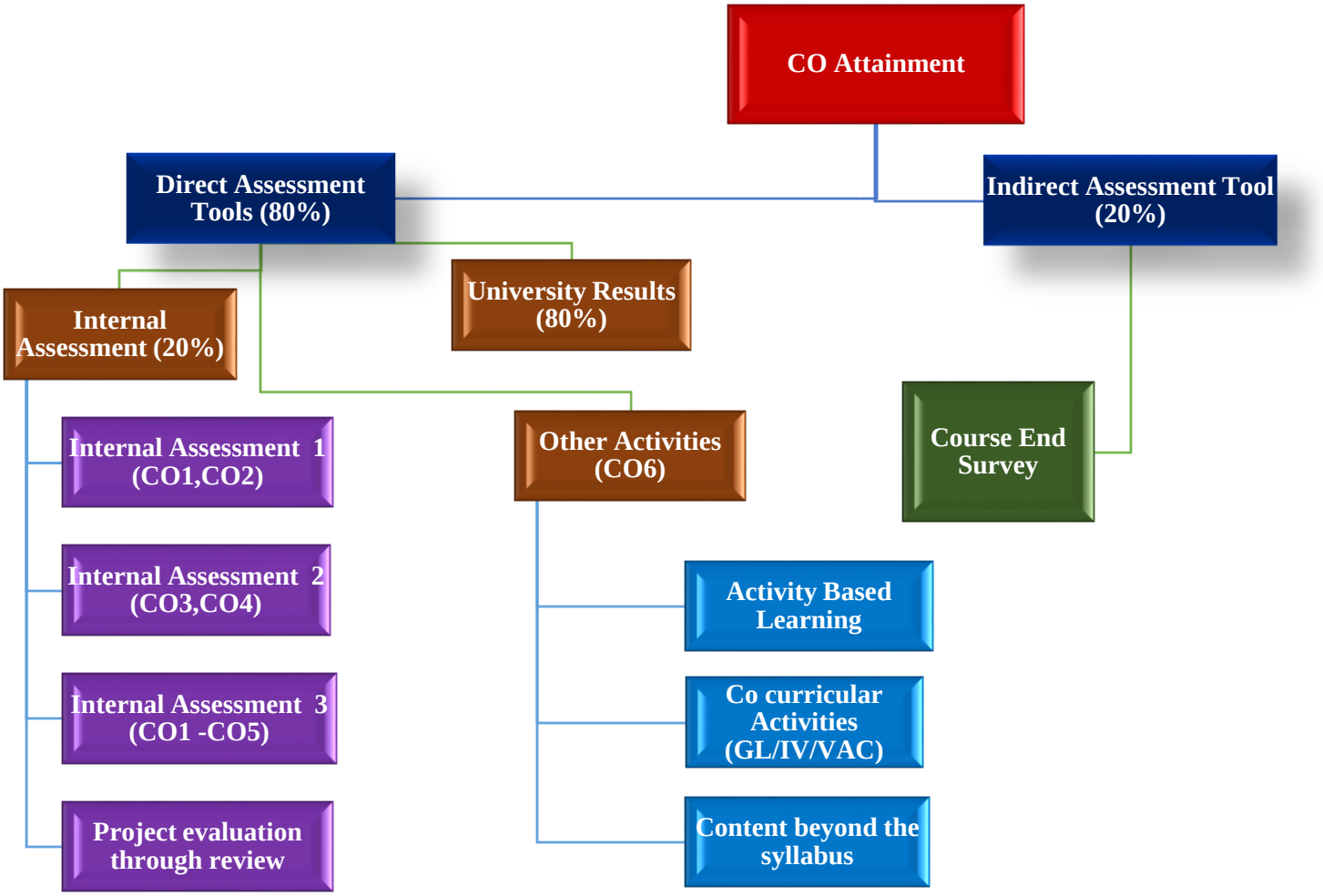
Assessment Process	Evaluation	Frequency
DIRECT ASSESSMENT		
Tests and Exams	The department conducts class tests periodically depending on the course. Two Internal Tests and one Model Examinations are conducted regularly in each semester and attendance for the exams is made compulsory. The performance of the students in the tests helps faculty to know the level of knowledge gained by the students. Accordingly, the teaching methodology is modified by the concerned faculty. **Internal Assessment I** (50 Marks)- 1.30 Hrs • Unit 1 and Unit 2 **Internal Assessment II** (50 Marks)- 1.30 Hrs • Unit 3 and Unit 4 **Internal Assessment III** (100 Marks)- 3 Hrs • Unit 1 to Unit 5	Each assessment once in a semester
University Exams	Will be conducted as per Anna university schedule	Once in a semester
Laboratory works	Each student is assigned a system to carry out the laboratory work. 20 Marks will be allocated for each experiment as per Anna university syllabus	Once in a semester
Project Evaluation	Student Projects are evaluated periodically through the Reviews conducted by the department. The skills and abilities of the students related to project work are evaluated by conducting three reviews.	Once in Final year
Assignments for Students	In support of conventional classroom teaching, assignments are given to the students for further practice in the learned concepts. This increases the performance of the students in the assessment tests and exams. This enhances the self-learning capability of the students.	Minimum of three assignments per subject
INDIRECT ASSESSMENT		
Course End Survey	The faculties are encouraged to collect the feedback about Instructor's clarity in discussing and presenting course material, Instructional examples, Assignments and exams aligned with course objectives, Instructor's enthusiasm about teaching the course. Collected feedback is analyzed by faculty incharge, group coordinator and Head of the department. According to student response or feedback necessary action will be taken. These responses can provide a deeper understanding of factors that impact learning.	At the end of semester

- For university examination, all assessments of a course will be done on a marks basis. However, for the purpose of reporting the performance of a candidate, letter grades, each carrying certain number of points, will be awarded as per the range of total marks(out of 100) obtained by the candidate in each subject as detailed below
- The statement of marks for UG, Professional courses will be issued to the students on par with international standard incorporating Grade Point Average(GPA) and Cumulative Grade Point Average(CGPA)

Grade points and its Description			
Mark Range	**Grade Points**	**Letter Grade**	**Description**
91-100	10	O	Outstanding
81-90	9	A+	Excellent
71-80	8	A	Very Good
61-70	7	B+	Good
50-60	6	B	Average
<50	2	U	Failed
-	0	RA	Reappear

- Revaluation of answer scripts for the current semester is permissible for all UG, Professional Courses. Students can apply for revaluation in prescribed format within 10 days from the date of publication of results photocopy of the answer paper will be given by the university

CO ASSESSMENT PROCESS



CO assessment is done by giving 80% weightage to Direct Assessment and 20% weightage to Indirect Assessment. Internal Assessment Exams are done by giving 20% weightage and 80% weightage to University Results. Internal Assessment Exams (20%) is done through internal exams (IA1, IA2 & Model Exam) and other activities related to CO6. Direct Assessment (80%) is done through the sum of Internal Assessment Exams and University Results. Indirect assessment is done through course end surveys.

3.2.2 Record the attainment of Course Outcomes of all courses with respect to set attainment levels (40)

Sl.No	SEMESTER	NBA CODE	Subject Name	Subject Target (%)	Overall CO Attainment						CO AVERAGE	FINAL TTAINMEN	ATTAINED LEVEL	Attained Yes/No
					CO1	CO2	CO3	CO4	CO5	CO6				
1	SEMESTER I	C101	Communicative English	65	2.9	2.9	2.9	2.9	2.9	2.9	2.9	97	3	Y
2		C102	Engineering Mathematics – I	75	2.5	2.5	2.1	2.1	2.1	2.9	2.4	79	3	Y
3		C103	Engineering Physics – I	65	2.8	2.8	2.8	2.7	2.6	2.9	2.8	92	3	Y
4		C104	Engineering Chemistry – I	75	2.9	2.9	2.9	2.9	2.8	2.9	2.9	96	3	Y
5		C105	Problem Solving And Python Programming	65	2.8	2.8	2.8	2.8	2.4	2.9	2.8	92	3	Y
6		C106	Engineering Graphics	65	2.7	2.5	2.5	2.5	2.5	2.0	2.5	82	3	Y
7		C107	Problem Solving And Python Programming Laboratory	90	2.8	2.7	2.7	2.7	2.7	2.7	2.7	91	3	Y
8		C108	Physics and Chemistry Laboratory - I	90	2.9	2.9	2.9	2.9	2.9	2.9	2.9	97	3	Y
9	SEMESTER II	C109	Technical English	65	2.9	2.9	2.9	2.9	2.9	2.9	2.9	97	3	Y
10		C110	Mathematics – II	65	2.7	2.7	2.7	2.4	2.4	2.9	2.6	88	3	Y
11		C111	Physics for Information science	65	2.8	2.7	2.8	2.8	2.3	2.9	2.7	91	3	Y
12		C112	Basic Electrical, Electronics and Measurement Engineering	65	2.5	2.2	2.6	2.2	2.2	2.9	2.4	81	3	Y
13		**C113**	Environmental Science and Engineering	75	2.8	2.8	2.8	2.8	2.7	2.9	2.8	93	3	Y
14		C114	Programming in C	65	2.7	2.6	2.6	2.6	2.2	2.9	2.6	87	3	Y
15		C115	Engineering Practices Laboratory	90	2.9	2.9	2.9	2.9	2.8	2.9	2.9	96	3	Y
16		C116	C programming Laboratory	90	2.7	2.7	2.7	2.7	2.7	2.7	2.7	90	3	Y
17	SEME	C201	Discrete Mathematics	65	2.5	2.5	2.5	2.5	2.1	2.9	2.5	83	3	Y
18		C202	Digital Principles and System Design	65	2.6	2.6	2.6	2.6	2.5	3.0	2.7	88	3	Y
19		C203	Data Structure	65	2.4	2.3	2.3	2.3	2.2	2.8	2.4	79	3	Y

20	**STERIII**	C204	Object Oriented Programming	65	2.7	2.5	2.6	2.5	2.5	2.8	2.6	87	3	Y
21		C205	Communication Engineering	65	2.7	2.7	2.7	2.7	2.6	2.9	2.7	91	3	Y
22		C206	Data Structure Laboratory	90	2.7	2.7	2.7	2.7	2.7	2.7	2.7	90	3	Y
23		C207	Object Oriented Programming Laboratory	90	2.7	2.7	2.7	2.7	2.7	2.7	2.7	90	3	Y
24		C208	Digital Systems Laboratory	90	3.0	3.0	3.0	3.0	3.0	2.9	3.0	99	3	Y
25		C209	Interpersonal skills/listening &Speaking	90	2.8	2.8	2.8	2.8	2.7	2.8	2.8	92	3	Y
26	**SEMESTERIV**	C210	Probability and Queueing Theory	65	2.5	2.5	2.5	2.5	2.1	2.9	2.5	83	3	Y
27		C211	Computer Architecture	65	2.9	2.8	2.8	2.8	2.7	2.9	2.8	93	3	Y
28		C212	Database Management Systems	65	2.7	2.8	2.7	2.7	2.3	2.9	2.7	89	3	Y
29		C213	Design and Analysis of Algorithm	65	2.6	2.6	2.5	2.5	2.5	2.6	2.5	85	3	Y
30		C214	Operating Systems	65	2.7	2.6	2.7	2.4	2.5	2.9	2.6	88	3	Y
31.0		C215	Software Engineering	66	2.6	2.6	2.6	2.6	2.6	2.8	2.6	88	3	Y
32		C216	Database Management Systems Laboratory	85	2.8	2.8	2.8	2.8	2.8	2.6	2.8	93	3	Y
33		C217	Operating Systems Laboratory	90	2.8	2.7	2.7	2.7	2.7	2.7	2.7	91	3	Y
34		C218	Advanced Reading and Writing	90	2.8	2.8	2.8	2.8	2.8	2.7	2.7	92	3	Y
35	**SEMESTERV**	C301	Algebra and Number Theory	65	2.5	2.5	2.4	2.5	2.3	2.9	2.5	83	3	Y
36		C302	Computer Networks	65	2.4	2.3	2.3	2.3	2.2	2.9	2.4	80	3	Y
37		C303	Microprocessors and Microcontrollers	65	2.3	2.4	2.2	2.3	2.2	2.9	2.4	80	3	Y
38		C304	Theory of Computation	65	2.3	2.2	2.2	2.1	2.2	2.8	2.3	76	3	Y
39		C305	Object Oriented Analysis and Design	65	2.6	2.6	2.6	2.6	2.5	2.9	2.6	87	3	Y
40		C306	Geographic Information System	65	2.7	2.5	2.6	2.6	2.5	2.9	2.6	88	3	Y
41		C307	Microprocessor and Microcontrollers Laboratory	90	2.9	2.9	2.9	2.9	2.9	2.9	2.9	97	3	Y
42		C308	Object Oriented Analysis and Design Laboratory	90	2.9	2.9	2.9	2.9	2.9	2.9	2.9	97	3	Y

43		C309	Networks Laboratory	90	2.9	2.9	2.9	2.9	2.9	2.9	2.9	98	3	Y
44	**SEMESTERVI**	C310	Internet Programming	65	2.7	2.7	2.7	2.7	2.7	2.9	2.7	91	3	Y
45		C311	Artificial Intelligence	65	2.6	2.6	2.6	2.4	2.4	0.5	2.2	74	3	Y
46		C312	Mobile Computing	65	2.7	2.7	2.8	2.6	2.5	2.9	2.7	90	3	Y
47		C313	Compiler Design	63	2.8	2.7	2.9	2.7	2.4	2.9	2.7	91	3	Y
48		C314	Distributed Systems	68	2.6	2.6	2.6	2.5	2.4	2.9	2.6	87	3	Y
49		C315	Data Warehousing and Data Mining	65	2.8	2.8	2.8	2.7	2.5	2.9	2.7	91	3	Y
50		C316	Internet Programming Laboratory	90	2.9	2.9	2.9	2.9	2.9	2.9	2.9	96	3	Y
51		C317	Mobile Application Development Laboratory	90	2.9	2.9	2.9	2.9	2.9	2.9	2.9	97	3	Y
52		C318	Software Testing	66	2.6	2.6	2.7	2.7	2.6	2.9	2.7	89	3	Y
53		C319	Professional Communication	90	2.9	2.9	2.9	2.9	2.9	2.9	2.9	97	3	Y
54		C320	Mini project	90	3.0	3.0	3.0	2.9	3.0	3.0	3.0	99	3	Y
55	**SEMESTERVII**	C401	Principles of Management	65	2.9	2.9	2.9	2.9	2.8	2.9	2.9	96	3	Y
56		C402	Cryptography and Network Security	65	2.9	2.9	2.9	2.9	2.9	2.9	2.9	97	3	Y
57		C403	Cloud Computing	65	2.9	2.8	2.8	2.8	2.4	2.9	2.8	92	3	Y
58		C404	Supply Chain Management	65	2.9	2.8	2.8	2.8	2.6	2.9	2.8	94	3	Y
59		C405	Bigdata Analytics	65	2.9	2.9	2.9	2.9	2.9	2.9	2.9	97	3	Y
60		C406	Software project Management	65	2.8	2.4	2.7	2.4	2.8	2.9	2.7	89	3	Y
61		C407	C# and .Net Programming	68	2.9	2.9	2.9	2.9	2.9	2.9	2.9	97	3	Y
62		C408	Wireless ADHOC and Sensor Network	65	2.9	3.0	2.9	2.9	2.9	3.0	2.9	98	3	Y
63		C409	Cloud computing Laboratory	90	2.9	2.9	2.9	2.9	2.9	2.9	2.9	97	3	Y
64		C410	Security Laboratory	90	2.9	2.9	2.9	2.9	2.9	2.9	2.9	97	3	Y
65	**SEMVIII**	C411	Professional Ethics in Engineering	65	2.9	2.9	2.9	2.9	2.9	2.9	2.9	97	3	Y
66		C412	Information Retrival Technique	65	2.9	2.9	2.9	2.9	2.9	2.9	2.9	97	3	Y
67		C413	Green Computing	65	2.9	2.9	2.9	2.9	2.9	2.9	2.9	97	3	Y
68		C414	Project work	94	2.9	2.9	2.9	2.9	2.9	2.9	2.9	97	3	Y

ATTAINED LEVEL (in %) Level 1==50%, Level 2=55%, Level 3=65%)

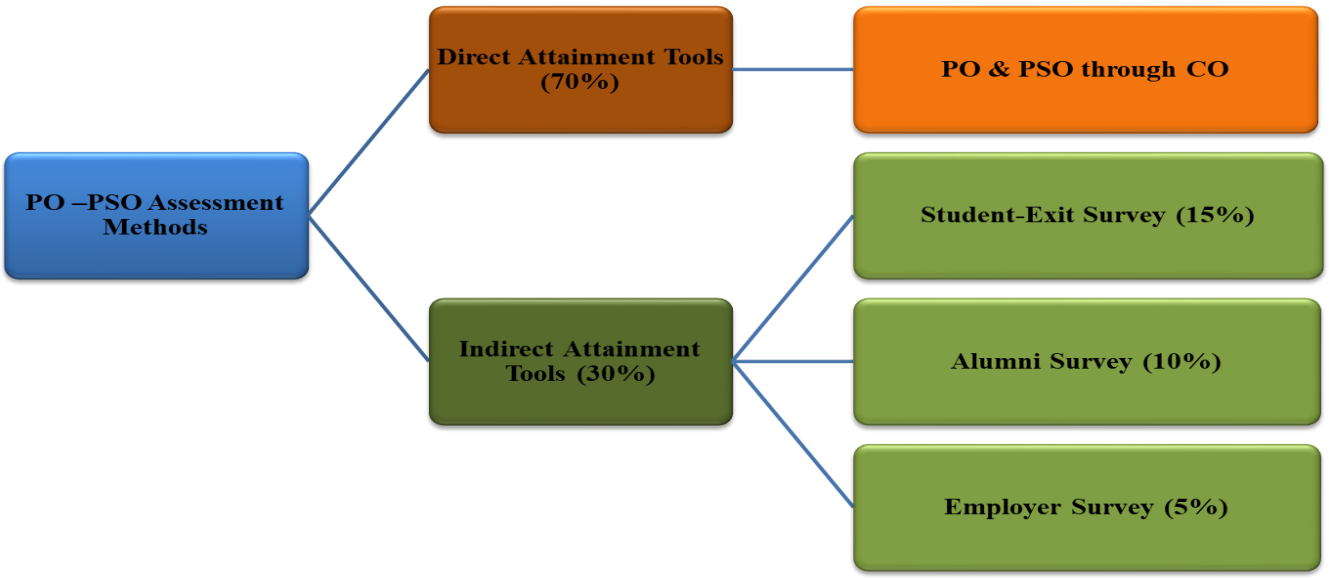
3.3. Attainment of Program Outcomes and Program Specific Outcomes (50)

3.3.1 Describe assessment tools and processes used for measuring the attainment of each of the Program Outcomes and Program Specific Outcomes

Assessment Process	Evaluation	Frequency
DIRECT ASSESSMENT		
Tests and Exams	The department conducts class tests periodically depending on the course. Two Internal Tests and one Model Examinations are conducted regularly in each semester and attendance for the exams is made compulsory. The performance of the students in the tests helps faculty to know the level of knowledge gained by the students. Accordingly, the teaching methodology is modified by the concerned faculty. **Internal Assessment I** (50 Marks)- 1.30 Hrs • Unit 1 and Unit 2 **Internal Assessment II** (50 Marks)- 1.30 Hrs • Unit 3 and Unit 4 **Internal Assessment III** (100 Marks)- 3 Hrs • Unit 1 to Unit 5	Each assessment once in a semester
University Exams	Will be conducted as per Anna university schedule	Once in a semester
Laboratory works	Each student is assigned a system to carry out the laboratory work. 20 Marks will be allocated for each experiment as per Anna university syllabus	Once in a semester
Project Evaluation	Student Projects are evaluated periodically through the Reviews conducted by the department. The skills and abilities of the students related to project work are evaluated by conducting three reviews.	Once in Final year
Assignments for Students	In support of conventional classroom teaching, assignments are given to the students for further practice in the learned concepts. This increases the performance of the students in the assessment tests and exams. This enhances the self-learning capability of the students.	Minimum of three assignments per subject
INDIRECT ASSESSMENT		
EVENT	**ASSESSMENT TOOL**	
Course End Survey	The faculties are encouraged to collect the feedback about Instructor's clarity in discussing and presenting course material, Instructional examples, Assignments and exams aligned with course objectives, Instructor's enthusiasm about teaching the course. Collected feedback is analyzed by faculty incharge, group coordinator and Head of the department. According to student response or feedback necessary action will be taken. These responses can provide a deeper understanding of factors that impact learning.	Course End Survey
Alumni Survey	Employment status of the past students is collected through the feedback forms and they are assessed in the department. Suggestions given by the Alumni are recorded for the future	Alumni Survey

	actions. They are asked to identify what should be changed, altered, maintained, improved or expanded.	
Student Exit Survey	Get the feedback from the students after their Course completion. Collected feedback is analyzed in the department by group coordinators and Head of the department. Based on that necessary action will be taken.	Student Exit Survey
Employer survey	It is conducted with present and potential employers of our graduates to get their opinion about the abilities of our graduates. This feedback is useful in improving the employability skills of our graduates and making suitable changes to the program.	Employer survey

PO/PSO ASSESSMENT PROCESS



PO / PSO ASSESSMENT TOOLS:

PO / PSO assessment is done by giving 70% weightage to direct assessment and 30% weightage to indirect assessment. Direct assessment is based on overall CO attainment and CO-PO/PSO mapping. Indirect assessment is done through program exit survey, alumni survey and employer survey. Student exit survey is given a weightage of 15% each and employer survey is given a weightage of 5% each and alumni survey is given a weightage of 10%.

Quality / relevance of assessment tools and processes:

(i) Direct Assessment Tools and Process:

Direct CO Assessment tools are used for the direct assessment of POs and PSOs. The attainment of each PO corresponding to a particular course is determined from the attainment values obtained for each course outcome related to that PO and the CO-PO mapping values. Similarly, the values of PSO attainment are also determined.

(ii) Indirect Assessment Tools and process:

Indirect assessment is done through student exit survey, alumni survey and employer survey where Student exit survey are given a weightage of 15% each and employer survey are given a weightage of 5% each and alumni survey is given a weightage of 10%

3.3.2 Provide results of evaluation of each PO & PSO (40)

PO ATTAINMENT

S. No	SEM	Sub. Code	Subject Name	Programme Outcomes											
				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1	SEMESTER I	C101	Communicative English	-	-	-	-	-	-	-	1.9	2.9	2.9	-	1.9
2		C102	Engineering Mathematics – I	2.4	2.4	2.4	-	-	-	-	-	1.6	-	-	-
3		C103	Engineering Physics – I	2.8	2.8	2.8	-	-	-	-	-	-	-	-	-
4		C104	Engineering Chemistry – I	2.9	1.9	1.9	-	-	-	-	-	-	-	-	-
5		C105	Problem Solving And Python Programming	3.0	2.0	2.0	-	-	-	-	-	-	-	-	-
6		C106	Engineering Graphics	2.4	2.4	1.6	-	1.6	-	-	2.4	2.4	1.6	-	1.6
7		C107	Problem Solving And Python Programming Laboratory	2.8	2.8	2.8	-	2.8	-	-	2.8	2.8	1.8	-	1.8
8		C108	Physics and Chemistry Laboratory - I	2.9	2.9	2.9	-	-	-	-	2.9	2.9	2.0	-	-
9	SEMESTER II	C109	Technical English	-	-	-	-	-	-	-	1.9	2.9	2.9	-	1.6
10		C110	Mathematics – II	2.6	2.6	2.2	-	-	-	-	-	1.8	-	-	-
11		C111	Physics for Information science	2.8	2.8	1.8	-	-	-	-	-	-	-	-	-
12		C112	Basic Electrical, Electronics and Measurement Engineering	2.5	1.6	1.6	-	-	-	-	-	-	-	-	-
13		C113	Environmental Science and Engineering	2.5	1.6	1.6	-	-	-	2.5	2.5	1.6	1.6	-	1.6
14		C114	Programming in C	3.0	2.6	2.6	-	-	-	-	1.7	1.7	1.7	-	1.7
15		C115	Engineering Practices Laboratory	2.9	2.9	2.9	2.0	2.0	2.9	-	2.9	2.0	2.9	-	1.0
16		C116	C programming Laboratory	2.7	2.7	2.7	-	-	-	-	1.8	1.5	1.5	-	1.5
17	SEMES	C201	Discrete Mathematics	2.4	2.5	2.5	-	-	-	-	-	2.0	-	-	-
18		C202	Digital Principles and System Design	2.5	2.6	2.6	-	-	-	-	-	-	-	-	2.6
19		C203	Data Structure	1.9	2.0	1.9	-	-	1.8	-	-	1.8	-	-	2.7
20		C204	Object Oriented Programming	2.6	1.9	2.5	-	-	-	-	-	1.8	-	-	1.8
21		C205	Communication Engineering	2.3	2.3	2.1	-	-	-	-	-	-	2.7	-	2.7
22		C206	Data Structure Laboratory	2.7	2.7	2.7	-	-	-	-	1.8	1.7	1.4	-	1.7

23	**TER III**	C207	Object Oriented Programming Laboratory	2.7	2.3	2.1	-	-	-	-	2.0	2.3	1.8	-	2.3
24		C208	Digital Systems Laboratory	2.7	2.4	2.7	-	-	1.8	-	1.9	1.2	1.2	-	1.4
25		C209	Interpersonal skills/listening & Speaking	-	-	-	-	-	-	-	2.6	1.4	2.6	-	1.8
26	**SEMESTER IV**	C210	Probability and Queuing Theory	1.4	1.4	0.8	-	-	-	-	-	1.1	0.8	-	0.9
27		C211	Computer Architecture	2.5	2.2	2.5	-	-	-	-	-	-	-	-	1.0
28		C212	Database Management Systems	2.4	1.8	2.5	-	1.9	-	-	-	-	-	-	-
29		C213	Design and Analysis of Algorithm	2.5	2.3	2.0	-	-	-	-	-	1.6	1.4	-	1.7
30		C214	Operating Systems	2.6	2.4	1.6	-	2.9	-	-	-	-	-	-	2.9
31		C215	Software Engineering	2.6	1.6	1.6	-	1.6	1.6	-	1.6	1.6	2.6	-	1.5
32		C216	Database Management Systems Laboratory	2.8	2.3	2.3	-	-	-	-	1.4	1.5	0.9	-	0.9
33		C217	Operating Systems Laboratory	2.0	1.5	1.1	-	-	-	-	1.8	1.6	1.8	-	1.6
34		C218	Advanced Reading and Writing	-	-	-	-	-	-	-	1.4	2.7	2.0	-	2.7
35	**SEMESTER V**	C301	Algebra and Number Theory	2.5	2.5	1.7	-	-	-	-	-	1.7	-	-	-
36		C302	Computer Networks	2.4	2.4	1.2	-	-	-	-	-	-	-	-	-
37		C303	Microprocessors and Microcontrollers	1.6	1.5	2.3	-	-	-	-	-	-	-	-	-
38		C304	Theory of Computation	2.3	2.2	2.1	-	-	-	-	-	-	-	-	-
39		C305	Object Oriented Analysis and Design	2.6	2.4	2.2	-	-	1.6	-	-	-	-	-	-
40		C306	Geographic Information System	1.6	0.9	-	-	-	-	-	-	-	-	-	0.9
41		C307	Microprocessor and Microcontrollers Laboratory	1.6	1.8	2.2	-	-	-	-	1.7	1.5	2.4	-	1.3
42		C308	Object Oriented Analysis and Design Laboratory	2.1	2.6	2.8	-	2.6	2.6	-	1.9	2.6	2.4	-	1.9
43		C309	Networks Laboratory	2.8	1.8	1.8	-	-	-	-	2.1	2.1	2.1	-	2.1
44	**SEMESTER VI**	C310	Internet Programming	2.7	1.8	2.7	-	-	-	-	0.9	1.7	1.7	-	1.8
45		C311	Artificial Intelligence	2.3	2.3	2.3	-	-	-	-	-	-	-	-	0.6
46		C312	Mobile Computing	2.7	2.0	1.5	-	-	-	-	-	-	-	-	-
47		C313	Compiler Design	2.3	2.1	2.2	-	-	-	-	1.8	1.3	1.9	-	1.5
48		C314	Distributed Systems	2.3	1.4	0.9	-	-	-	-	-	-	-	-	-
49		C315	Data Warehousing and Data Mining	2.7	2.0	2.2	-	-	-	-	-	-	-	-	-
50		C316	Software Testing	0.9	0.9	1.3	-	1.4	-	-	-	1.8	1.8	-	-
51		C317	Internet Programming Laboratory	2.9	1.9	2.9	-	1.9	2.0	-	1.0	1.0	1.0	-	1.9
52		C318	Mobile Application Development Laboratory	2.4	1.8	2.7	-	2.9	-	-	1.1	2.4	1.6	-	2.9
53		C319	Professional Communication	-	-	-	-	-	2.6	-	-	-	2.9	-	2.7
54		C320	Mini project	2.0	2.3	2.1	2.1	2.0	1.8	1.6	1.6	2.1	2.1	2.3	2.0

55	SEMESTER VII	C401	Principles of Management	2.7	2.6	2.8	-	-	-	-	-	-	-	2.2	-
56		C402	Cryptography and Network Security	2.9	2.3	2.3	1.9	1.9	1.9	-	1.9	1.9	-	2.9	1.9
57		C403	Cloud Computing	2.0	2.4	2.8	-	-	-	-	-	-	-	-	-
58		C404	Supply Chain Management	1.1	-	-	-	-	0.9	1.4	0.9	0.9	1.9	-	2.8
59		C405	Big data Analytics	2.1	2.1	2.1	-	2.1	2.1	-	-	-	2.1	-	-
60		C406	Software project Management	2.7	1.9	2.5	-	-	2.2	-	2.4	2.4	2.2	2.4	2.4
61		C407	C# and .Net Programming	1.9	-	2.7	-	2.9	-	-	-	1.7	1.6	-	-
62		C408	Wireless ADHOC and Sensor Network	2.7	1.0	2.0	-	-	-	-	-	-	-	-	2.0
63		C409	Cloud computing Laboratory	2.4	2.9	2.3	-	2.3	-	-	1.1	1.6	1.3	-	1.3
64		C410	Security Laboratory	2.9	2.9	2.5	-	2.3	-	-	2.4	1.6	1.6	-	2.3
65	SEME VIII	C411	Professional Ethics in Engineering	-	-	-	-	-	1.1	1.0	2.9	1.0	1.0	-	2.3
66		C412	Information Retrieval Technique	2.9	2.3	2.1	-	-	-	-	-	-	-	-	-
67		C413	Green Computing	2.9	2.4	2.2	-	-	-	-	-	-	-	-	-
68		C414	Project work	1.9	2.3	2.1	2.1	1.9	1.8	1.6	1.6	2.1	2.1	2.3	1.9

PSO ATTAINMENT

S.No	Semester	Subject Code	Subject Name	Programme Specific Outcomes		
				PSO1	PSO2	PSO3
1	Semester I	C101	Communicative English	1.9	1.5	-
2		C102	Engineering Mathematics – I	1.4	1.0	-
3		C103	Engineering Physics – I	1.9	1.3	-
4		C104	Engineering Chemistry – I	-	-	-
5		C105	Problem Solving And Python Programming	1.0	-	0.7
6		C106	Engineering Graphics	0.7	1.7	-
7		C107	Problem Solving And Python Programming Laboratory	0.9	2.7	-
8		C108	Physics and Chemistry Laboratory - I	-	-	1.0
9	Semester II	C109	Technical English	0.7	0.8	2.7
10		C110	Mathematics – II	1.8	1.9	2.0
11		C111	Physics for Information science	1.5	1.9	1.3
12		C112	Basic Electrical, Electronics and Measurement Engineering	0.8	1.6	2.0
13		C113	Environmental Science and Engineering	2.6	0.8	-
14		C114	Programming in C	2.2	1.0	1.6
15		C115	Engineering Practices Laboratory	-	-	-
16		C116	C programming Laboratory	2.0	1.4	0.9
17		C201	Discrete Mathematics	0.8	0.8	0.8
18		C202	Digital Principles and System Design	2.6	1.2	0.9
19		C203	Data Structure	1.5	0.8	0.8

20	Semester III	C204	Object Oriented Programming	1.5	1.4	1.4
21		C205	Communication Engineering	3.0	1.0	1.0
22		C206	Data Structure Laboratory	2.4	1.6	0.9
23		C207	Object Oriented Programming Laboratory	0.9	2.7	-
24		C208	Digital Systems Laboratory	2.4	1.6	0.9
25		C209	Interpersonal skills/listening & Speaking	0.9	1.9	0.9
26	Semester IV	C210	Probability and Queueing Theory	-	1.2	1.1
27		C211	Computer Architecture	0.9	-	0.9
28		C212	Database Management Systems	1.8	-	0.9
29		C213	Design and Analysis of Algorithm	1.5	-	-
30		C214	Operating Systems	1.9	2.1	-
31		C215	Software Engineering	1.4	1.8	1.7
32		C216	Database Management Systems Laboratory	1.9	1.4	-
33		C217	Operating Systems Laboratory	0.9	-	0.9
34		C218	Advanced Reading and Writing	0.9	0.9	0.9
35	Semester V	C301	Algebra and Number Theory	2.5	1.5	1.5
36		C302	Computer Networks	0.8	-	-
37		C303	Microprocessors and Microcontrollers	1.9	1.9	1.9
38		C304	Theory of Computation	0.7	0.7	-
39		C305	Object Oriented Analysis and Design	1.7	1.2	-
40		C306	Geographic Information System	0.8	-	-
41		C307	Microprocessor and Microcontrollers Laboratory	1.0	1.0	1.0
42		C308	Object Oriented Analysis and Design Laboratory	2.3	-	-
43		C309	Networks Laboratory	1.9	-	1.9
44	Semester VI	C310	Internet Programming	1.9	1.8	-
45		C311	Artificial Intelligence	1.0	1.0	1.6
46		C312	Mobile Computing	-	1.7	0.9
47		C313	Compiler Design	-	1.8	-
48		C314	Distributed Systems	1.6	-	0.9
49		C315	Data Warehousing and Data Mining	1.8	1.8	1.3
50		C316	Software Testing	1.2	2.1	-
51		C317	Internet Programming Laboratory	-	2.2	-
52		C318	Mobile Application Development Laboratory	1.9	-	-
53		C319	Professional Communication	1.5	1.0	-
54		C320	Mini project	1.5	2.1	-
55	Semester VII	C401	Principles of Management	2.4	2.4	2.4
56		C402	Cryptography and Network Security	2.8	2.6	2.3
57		C403	Cloud Computing	2.3	2.5	2.2
58		C404	Supply Chain Management	1.7	2.6	1.4
59		C405	Big Data Analytics	2.0	-	1.0
60		C406	Software project Management	1.9	1.9	2.5
61		C407	C# and .Net Programming	1.9	-	1.0

62		C408	Wireless AD HOC and Sensor Network	-	2.0	-
63		C409	Cloud computing Laboratory	2.9	2.0	1.9
64		C410	Security Laboratory	2.9	2.0	1.9
65	Semester VIII	C411	Professional Ethics in Engineering	1.0	-	2.4
66		C412	Information Retrieval Technique	2.8	2.8	2.4
67		C413	Green Computing	2.1	1.8	2.5
68		C414	Project work	1.9	2.0	1.6

S.A ENGINEERING COLLEGE, CHENNAI-77
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
PO-PSO ATTAINMENT (BATCH 2017-2021)

Assessment Methods	Tools	Programme Outcomes												PSO		
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Direct Attainment	PO & PSO through CO (70%)	56.7	50.4	50.9	47.2	50.7	44.8	37.5	44.3	43.3	44.0	56.3	43.3	39.3	38.6	34.0
Indirect Attainment	Student-Exit Survey (15%)	12.8	12.7	12.8	12.5	12.6	12.7	12.9	13.1	13.0	13.3	12.9	13.1	13.7	13.5	12.9
	Alumni Survey (10%)	8.0	8.1	8.0	8.2	8.0	8.1	8.0	8.1	8.4	8.2	8.0	8.0	8.4	8.4	8.2
	Employer Survey (5%)	4.0	3.9	4.0	4.1	4.0	3.9	3.9	4.0	3.9	4.0	4.0	4.0	4.0	4.0	4.0
Overall Attainment 100 %		81	75	76	72	75	69	62	69	69	69	81	68	65	65	59
TARGET (65%)		65	65	65	65	65	65	65	65	65	65	65	65	65	65	65
TARGET(3)		1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95
Overall Attainment (out of 3)		2.44	2.25	2.27	2.16	2.26	2.08	1.87	2.08	2.06	2.08	2.44	2.05	1.96	1.95	1.77
Level of attainment		3	3	3	3	3	3	2	3	3	3	3	3	3	3	2