

Department of Computer Science & Engineering

Subject Code/Name:- 3CS2-01/Advanced Engineering Mathematics

List of Course Outcomes	
CO-1	Graduates gain ability to understand the decision making capability and how to translate real-world problems into probability models
CO-2	Graduates analyze the ability to formulate a wide range of management problems that can be solved to optimality by classical combinatorial optimization techniques and the knowledge of alternative solution approaches such as metaheuristics that can find nearly optimal solutions.
CO-3	Graduates understand the course aims to introduce students to Use operations research techniques for effective decisions–making, Model formulation and applications that are used in solving business decision problems.

MAPPING OF COURSE OUTCOME WITH PROGRAM OUTCOMES AND PSO

COURSE OUTCOME	PROGRAM OUTCOME												PSO	
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
I	3	1	1	1						1	1	1	2	
II	2	2	1									1	2	1
III	2	1	3	3	1							1	2	1

Note: Correlation levels 1, 2 or 3 as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Department of Computer Science & Engineering

Subject Code/Name:- 3CS1-03/Managerial Economics and Financial Accounting

List of Course Outcomes	
CO-1	Graduates gain ability to apply the knowledge of managerial and economic concepts and ability to apply the tools and techniques.
CO-2	Ability to understand the demand and supply analysis and to Know the implementation of demand forecasting methods for production decisions and cost analysis.
CO-3	Ability to understand the types of markets and pricing methods and to understand the techniques regarding the long term investment decisions.
CO-4	Ability to understand the application of various ratios in order to know the firm's financial position in depth and to understand different techniques of capital budgeting.

MAPPING OF COURSE OUTCOME WITH PROGRAM OUTCOMES AND PSO

COURSE OUTCOME	PROGRAM OUTCOME												PSO	
	PO -1	PO -2	PO -3	PO -4	PO -5	PO -6	PO -7	PO -8	PO -9	PO -10	PO -11	PO -12	PSO -1	PSO -2
I	1		2		2				1			1	2	
II	1	2	3	2						1		1	3	1
III	1	1	2					1	1			1	2	1
IV	1		1			1				1	2	2	2	

Note: Correlation levels 1, 2 or 3 as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Department of Computer Science & Engineering

Subject Code/Name:- 3CS3-04/Digital Electronics

List of Course Outcomes	
CO-1	Apply the principles of number system, binary codes and Boolean algebra to minimize logic expressions and knowledge about the various logic gates
CO-2	Develop the K- maps and apply QuineMcCluskey's method to minimize and optimize the logic functions up to 4 variables.
CO-3	Acquire the knowledge about various TTL logic families and analyze basic logic gate circuits of these families
CO-4	Design the various combinational circuits such as adders, encoders, decoders and multiplexers
CO-5	Design the various sequential circuits such as flip flops, counters and shift registers.

MAPPING OF COURSE OUTCOME WITH PROGRAM OUTCOMES AND PSO

COURSE OUTCOME	PROGRAM OUTCOME												PSO	
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
I	3	3	2	2	3	2	1					2	2	
II	3	2	2	1	3	2						2	2	
III	3	2	3	2	2	3	2					2	2	
IV	3	2	3	2	3	3	2					2	2	
V	3	2	3	2	3	3	2					2	2	

Note: Correlation levels 1, 2 or 3 as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Department of Computer Science & Engineering

Subject Code/Name:- 3CS4-05 Data Structures and Algorithms

List of Course Outcomes	
CO-1	Understand the concept of array storage and Examine the concept of row-major and column-major order.
CO-2	List and Illustrate the implementation of basic data structure using an array.
CO-3	Compare various searching techniques using arrays.
CO-4	Use linear and non-linear data structures like stacks, queues, linked list, tree, graph etc.
CO-5	Design and Formulate different sorting algorithms.

MAPPING OF COURSE OUTCOMES WITH PROGRAM OUTCOMES AND PSO'S

COURSE OUTCOMES	PROGRAM OUTCOMES												PSO's	
	PO- 1	PO- 2	PO- 3	PO- 4	PO- 5	PO- 6	PO- 7	PO- 8	PO- 9	PO- 10	PO- 11	PO- 12	PSO- 1	PSO- 2
CO-1	2	-	2	2	-	-	-	-	-	-	-	3	3	2
CO-2	2	2	1	2	-	-	-	-	-	-	-	3	3	3
CO-3	2	2	2	3	-	-	-	-	-	-	-	2	3	2
CO-4	2	3	2	2	-	-	-	-	-	-	-	2	3	3
CO-5	2	2	2	2	-	-	-	-	-	-	-	3	2	3

Note: Correlation levels 1, 2 or 3 as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Department of Computer Science & Engineering

Subject Code/Name:- 3CS4-06 Object Oriented Programming

List of Course Outcomes	
CO-1	Describe the Object Oriented Programming paradigm with the concept of objects and classes.
CO-2	Explain the memory management techniques using constructors, destructors and pointers.
CO-3	Classify and demonstrate the various Inheritance techniques.
CO-4	Understand how to apply polymorphism techniques on the object oriented problem and virtual functions.
CO-5	Summarize the exception handling mechanism, file handling techniques and Use of generic programming in Object oriented programming

MAPPING OF COURSE OBJECTIVE WITH PROGRAM OUTCOMES

COURSE OUTCOMES	PROGRAM OUTCOMES												PSO's	
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PS O-1	PS O-2
CO-1	3	2	2	-	3	-	-	-	3	-	3	3	3	3
CO-2	3	-	2	-	3	-	-	-	3	-	2	2	3	2
CO-3	3	2	-	-	3	-	-	-	3	2	2	2	2	3
CO-4	2	-	2	-	2	-	-	-	-	-	2	3	2	2
CO-5	3	-	2	-	2	-	-	-	2	-	2	2	3	3

Note: Correlation levels 1, 2 or 3 as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Department of Computer Science & Engineering

Subject Code/Name:- 3CS4-07 Software Engineering

List of Course Outcomes	
CO-1	Understand and compare the various software engineering models and differentiate between verification & validation,
CO-2	Apply various estimation models to determine the cost of software projects and illustrate risks in the software projects
CO-3	Identify the requirements, design the SRS and model various data flow and control flow diagrams,ERD diagram
CO-4	Learn various approaches to software fundamentals in modules and create software design documentation
CO-5	Describe object oriented programming concepts and UML to show class and object relationships

MAPPING OF COURSE OUTCOME WITH PROGRAM OUTCOMES AND PSO

COURSE OUTCOME	PROGRAM OUTCOME												PSO	
	PO -1	PO -2	PO -3	PO -4	PO -5	PO -6	PO -7	PO -8	PO -9	PO -10	PO -11	PO -12	PSO -1	PSO -2
I	1												1	
II	2	2											2	2
III	2	1	2										2	2
IV	1	1											1	1
V	2		2										1	2

Note: Correlation levels 1, 2 or 3 as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Department of Computer Science & Engineering

Subject Code/Name:- 5CS3-01 Information Theory & Coding

List of Course Outcomes	
CO-1	To understand the concept of information and entropy.
CO-2	To study of channel and Source coding theorem and also examine source coding schemes for data compaction.
CO-3	To analyze error detection and correction using linear block codes.
CO-4	To study generate cyclic codes and justify properties of Galois fields (GF) polynomials.
CO-5	To design Convolution encoders of different rates, code tree, trellis and state diagram.

MAPPING OF COURSE OUTCOME WITH PROGRAM OUTCOMES AND PSO

COURSE OUTCOME	PROGRAM OUTCOME												PSO	
	PO -1	PO -2	PO -3	PO -4	PO -5	PO -6	PO -7	PO -8	PO -9	PO -10	PO -11	PO -12	PSO -1	PSO -2
I	2	2	1	2	-	-	-	-	-	-	-	3	1	-
II	2	3	2	3	-	-	-	-	-	-	-	2	2	-
III	2	3	2	2	-	-	-	-	-	-	-	2	2	-
IV	2	2	2	2	-	-	-	-	-	-	-	2	1	-
V	2	2	3	2	-	-	-	-	-	-	-	2	2	-

Note: Correlation levels 1, 2 or 3 as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Department of Computer Science & Engineering

Subject Code/Name:- 5CS4-02 Compiler Design

List of Course Outcomes	
CO-1	Discuss the major phases of compilers and use the knowledge of the Lex tool
CO-2	Develop the parsers and experiment with the knowledge of different parsers design without automated tools
CO-3	Describe intermediate code representations using syntax trees and DAG's as well as use this knowledge to generate intermediate code in the form of three address code representations.
CO-4	Classify various storage allocation strategies and explain various data structures used in symbol tables
CO-5	Summarize various optimization techniques used for dataflow analysis and generate machine code from the source code of a novel language.

MAPPING OF COURSE OBJECTIVE WITH PROGRAM OUTCOMES

COURSE OUTCOMES	PROGRAM OUTCOMES												PSO's	
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO-1	3	3	3	2	2	-	-	-	-	-	-	3	3	3
CO-2	3	3	3	3	2	-	-	-	-	-	-	3	3	2
CO-3	3	3	2	3	-	-	-	-	-	-	-	3	2	-
CO-4	3	2	2	2	-	-	-	-	-	-	-	3	2	-
CO-5	3	3	2	3	-	-	-	-	-	-	-	3	2	-

Note: Correlation levels 1, 2 or 3 as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Department of Computer Science & Engineering

Subject Code/Name:- 5CS4-03 Operating System

List of Course Outcomes	
CO-1	Describe the basics of the operating systems, mechanisms of OS to handle processes, threads, and their communication.
CO-2	Analyze the memory management and its allocation policies.
CO-3	Illustrate different conditions for deadlock and their possible solutions.
CO-4	Discuss the storage management policies with respect to different storage management technologies
CO-5	Evaluate the concept of the operating system with respect to UNIX, Linux, Time, and mobile OS

MAPPING OF COURSE OUTCOME WITH PROGRAM OUTCOMES AND PSO

COURSE OUTCOME	PROGRAM OUTCOME												PSO	
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
I	2	2	-	3	3	-	-	-	-	-	-	3	2	-
II	2	2	2	3	3	-	-	-	-	-	-	3	3	-
III	2	2	-	3	3	-	-	-	-	-	-	3	2	-
IV	2	2	3	3	3	-	-	-	-	-	-	3	3	-
V	2	-	2	-	3	-	-	-	-	-	-	2	2	-

Note: Correlation levels 1, 2 or 3 as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Department of Computer Science & Engineering

Subject Code/Name:- 5CS4-04 Computer Graphics & Multimedia

List of Course Outcomes	
CO-1	Understand and apply basics about computer graphics along with graphics standards.
CO-2	Explain and analysis various algorithms to scan, convert the basic geometrical primitives, Area filling.
CO-3	Explain, illustrate and design various algorithms for 2D transformations and clipping (Cohen-Sutherland and NLN Algo).
CO-4	To understand the fundamentals concepts of parallel and perspective projections (Bezier Curve) and evaluate window to viewport for 3D transformations.
CO-5	To Understand various color models in computer graphics system and develop animated Object And understand Ray-Tracing Methods

MAPPING OF COURSE OUTCOME WITH PROGRAM OUTCOMES AND PSO

COURSE OUTCOME	PROGRAM OUTCOME												PSO	
	PO -1	PO -2	PO -3	PO -4	PO -5	PO -6	PO -7	PO -8	PO -9	PO -10	PO -11	PO -12	PSO -1	PSO -2
I	1	-	-	-	2	-	-	-	-	-	-	1	1	1
II	2	2	3	1	2	-	-	-	-	-	-	2	3	2
III	2	2	3	1	1	-	-	-	-	-	-	3	3	2
IV	2	2	3	1	1	-	-	-	-	-	-	3	3	2
V	2	2	1	2	-	-	-	-	-	-	-	2	2	2

Note: Correlation levels 1, 2 or 3 as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Department of Computer Science & Engineering

Subject Code/Name:- 5CS4-05 Analysis of Algorithms

List of Course Outcomes	
CO-1	Explain complexity and asymptotic notation concepts and use them to evaluate different algorithms and apply important algorithmic design paradigms and methods of analysis like Divide and Conquer
CO-2	Describe and analyze greedy method and dynamic programming techniques to solve various engineering problems.
CO-3	Discuss and utilize Branch and Bound techniques, and pattern-matching algorithms.
CO-4	Analysis of assignment problem and discuss randomized algorithms.
CO-5	Understand the concepts of problem classes, decision problem, Cook's theorem and approximation algorithm.

MAPPING OF COURSE OUTCOME WITH PROGRAM OUTCOMES AND PSO

COURSE OUTCOME	PROGRAM OUTCOME												PSO	
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
I	3	-	2	-	-	-	-	-	-	-	-	2	3	2
II	3	3	2	-	3	-	-	-	-	-	-	2	2	1
III	3	2	2	-	3	-	-	-	-	-	-	2	2	1
IV	3	2	-	-	-	-	-	-	-	-	-	2	3	1
V	3	-	-	-	-	-	-	-	-	-	-	3	3	1
Avg	3	1.4	1.2	-	1.2	-	-	-	-	-	-	2.2	2.6	1.2

Note: Correlation levels 1, 2 or 3 as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Department of Computer Science & Engineering

Subject Code/Name:- 5CS5-11 Wireless Communication

List of Course Outcomes	
CO-1	To List the different modes of communication and explain the evolution of different mobile communication technologies
CO-2	Summarize the challenges of wireless transmission and different design models
CO-3	To illustrate the working of a cellular network and discuss issues related to cellular network design.
CO-4	To Illustrate different digital modulation and noise handling techniques used in Wireless Communication.
CO-5	Analyze multiple antenna techniques used in 4G mobile technology and new research for future generations

MAPPING OF COURSE OUTCOME WITH PROGRAM OUTCOMES AND PSO

COURSE OUTCOME	PROGRAM OUTCOME												PSO	
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
I	3	2	2	-	-	1	1	-	-	-	-	1	1	-
II	3	2	1	-	-	1	3	-	-	-	-	2	2	-
III	3	2	1	-	-	1	-	-	-	-	-	1	2	-
IV	3	1	2	1	2	-	1	-	-	-	-	2	1	-
V	3	3	2	2	2	2	2	-	1	-	1	3	2	-

Note: Correlation levels 1, 2 or 3 as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Department of Computer Science & Engineering

Subject Code/Name:- 7CS4-01 Internet of Things

List of Course Outcomes	
CO-1	Basics of application areas of IOT, cloud computing, big data analytics, embedded system
CO-2	Illustrate different sensor technologies for sensing real world entities , and types of operating system
CO-3	Discuss the architecture , operation, challenges and business benefits of an IoT solution
CO-4	Explore on use of various hardware and sensing technologies to build IoT applications
CO-5	Domain specific IOTs Home automation, Cities, environment, Energy, Retail, Logistics, Agriculture, Industry, Health and Lifestyles

MAPPING OF COURSE OUTCOME WITH PROGRAM OUTCOMES AND PSO

COURSE OUTCOME	PROGRAM OUTCOME												PSO	
	PO -1	PO -2	PO -3	PO -4	PO -5	PO -6	PO -7	PO -8	PO -9	PO -10	PO -11	PO -12	PSO -1	PSO -2
I	1	3	3	2	3	-	2	3	-	-	-	3	3	2
II	1	3	3	2	3	-	2	2	-	-	-	3	3	2
III	2	-	3	2	3	-	-	3	-	2	-	2	2	2
IV	2	3	1	1	3	-	-	2	-	2	-	2	1	1
V	2	3	3	2	3	-	2	2	-	3	2	3	3	3

Note: Correlation levels 1, 2 or 3 as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Department of Computer Science & Engineering

Subject Code/Name:- 7ME6-60.2 Quality Management

List of Course Outcomes	
CO-1	Describe the scope, outcomes, evolution and various philosophies of quality management and cost of quality.
CO-2	Analyze and interpret the process quality using various graphical and statistical tools like control charts, probability distribution, sampling distribution, hypothesis testing, DOE and acceptance sampling.
CO-3	Describe the leadership and various quality management systems including Lean, JIT, Benchmarking, FMEA, Six sigma, Quality audit and ISO 9000.
CO-4	Explain and analyse the product quality improvement using QFD, Robust design and Taguchi method.
CO-5	Apply the product reliability analysis methods for various system configurations.

MAPPING OF COURSE OUTCOMES WITH PROGRAM OUTCOMES & PSO

COURSE OUTCOMES	PROGRAM OUTCOMES												PSO	
	PO- 1	PO- 2	PO- 3	PO- 4	PO- 5	PO- 6	PO- 7	PO- 8	PO- 9	PO- 10	PO- 11	PO- 12	PSO- 1	PSO- 2
CO-1	2	-	-	-	-	-	-	-	-	-	-	3	-	2
CO-2	2	3	-	2	2	-	-	-	-	-	-	2	-	2
CO-3	2	-	-	-	-	-	-	-	-	-	-	3	-	2
CO-4	2	3	-	2	2	-	-	-	-	-	-	2	-	2
CO-5	2	2	-	2	2	-	-	-	-	-	-	1	-	-

Note: Correlation levels 1, 2 or 3 as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Department of Computer Science & Engineering

Subject Code/Name: - 4CS2-01 Discrete Mathematics Structure

Course Outcome	Course Outcome Statement
CO-1	Understand and construct precise mathematical proofs.
CO-2	Illustrate and use logic and set theory to formulate precise Statements.
CO-3	Analyze and solve counting problems on finite and discrete structures
CO-4	Use advanced Counting Techniques to formulate counting problems and solve.
CO-5	Describe and manipulate sequences.
CO-6	Apply graph theory in solving computing problems

Mapping of CO's with POs & PSOs

PO/C O	PO1	PO2	PO 3	PO 4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO1 2	PSO 1	PSO 2
CO-1	1	2											2	3
CO-2	2	1	2										2	2
CO-3	2	1	2	3									2	3
CO-4	2	1	1	1									2	3
CO-5	2	1	1	3										2
CO-6												3		3

Subject Code/Name: - 4CS1-03/ Managerial Economics and Financial Accounting

CO-1	Discuss fundamental economic concepts along with role and responsibilities of a manager in a business undertaking
CO-2	Understand demand and supply of a product and/or product mix of an organization
CO-3	Comprehend the concepts of production and the cost of a product
CO-4	Explain different market situations such as monopoly, oligopoly, monopolistic and perfect markets and explanation through graphical representation.
CO-5	Define financial statements of an enterprise

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	3	-	-	-	-	3	2	-	3	-	-	-
CO2	-	-	-	3	-	-	-	-	3	2	-	3	-	-	-
CO3	-	-	-	3	-	-	-	-	3	2	-	3	-	-	-
CO4	-	-	-	3	-	-	-	-	3	2	-	3	-	-	-
CO5	-	-	-	-	-	-	-	-	-	-	3	3	-	-	-
Avg	-	-	-	3	-	-	-	-	3	2	3	3	-	-	-

Subject Code/Name: - 4CS3-04/Microprocessor & Interfaces

List of Course Outcomes

CO-1	Ability to understand the architecture & general organization of the 8085 microprocessor
CO-2	Ability to understand the architecture, general organization & instructions of the 8085 microprocessor.
CO-3	Ability to design, code and debug Assembly Language programs to implement simple programs and interfacing circuits.
CO-4	Design counters, Time delays and also categorize the interrupts of 8085 microprocessor.
CO-5	Design various peripheral chip (8259,8254,8255,8279) used in 8085.

MAPPING OF COURSE OUTCOME WITH PROGRAM OUTCOMES AND PSO

COURSE OUTCOME	PROGRAM OUTCOME												PSO	
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
I	3	2	2	1								1	2	1
II	1	3		3	2							1	2	
III	3	1	2	2	3							2	2	
IV	2	2	2	2	2							1	2	
V	1	1	2	1	1								2	

Subject Code/Name: - 4CS4-05 Database Management System

List of Course Outcomes

CO-1	Summarize the concepts of database objects; enforce integrity constraints on a database using RDBMS.
CO-2	Use Structured Query Language (SQL) for database manipulation
CO-3	Design simple database systems for some application to interact with databases
CO-4	Implement normalization algorithms using database design theory for different applications
CO-5	Analyze and implement transaction processing, concurrency control and database recovery protocols in databases.

CO-PO-PSO MAPPING

CO No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO-1	3	2	1	-	-	-	-	-	-	-	-	2	2	-	-
CO-2	2	1	2	1	3	-	-	-	-	-	-	1	3	-	-
CO-3	2	1	2	1	2	-	-	-	-	-	-	1	2	-	-
CO-4	2	3	-	-	1	-	-	-	-	-	-	2	3	-	-
CO-5	1	1	2	1	-	-	-	-	-	-	-	1	2	-	-
Avg	2.0	1.6	1.8	1.0	2.0	-	-	-	-	-	-	1.4	2.4	-	-

Subject Code/Name: - 4CS4-06/Theory of Computation

LIST OF COURSE OUTCOMES	
CO-1	Outline the concept of finite automata and regular expression.
CO-2	Understand the concept of context free grammars
CO-3	Demonstrate the push down automaton model for the given language.
CO-4	Make use of turing machine concept to solve the simple problems
CO-5	Explain decidability or undecidability of various problems

Mapping of course outcomes with program outcomes

COURSE OUTCOMES	PROGRAM OUTCOMES											
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12
CO-1	3	3	2	1	-	-	-	-	-	-	-	3
CO-2	3	3	3	2	-	-	-	-	-	-	-	3
CO-3	3	3	3	2	-	-	-	-	-	-	-	3
CO-4	3	3	3	3	-	2	-	1	-	-	1	3
CO-5	3	3	2	3	-	1	-	1	-	-	1	1

Note: Correlation levels 1, 2 or 3 as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Subject Code/Name: -4CS4-07 Data Communication and Computer Network

CO-1	Understand and Contrast the concept of Signals, OSI & TCP/IP reference models and discuss the functionalities of each layer in these models.
CO-2	Discuss and Analyse flow control and error control mechanisms and apply them using standard data link layer protocols
CO-3	Design subnets and calculate the IP addresses to fulfil network requirements of an organization
CO-4	Analyze and apply various routing algorithms to find shortest paths for packet delivery.
CO-5	Analyze the features and operations of various application layer protocols such as HTTP, DNS and SMTP.

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1		2	1		2	3			2	2	2	2	2	2
CO2	2	2			1				2	2	2	2		2
CO3	2	1			1				2			2		
CO4	2	2		2	2				1	2	2	3		2
CO5						3			2			2		
CO6					2				2	1	2	2		

Subject Code/Name: 6CS3-01 Digital Image Processing(VI Sem CSE/IT/AI & DS)

S.No.	Course Outcomes of the Subject/Course
CO1	To study the image fundamentals and mathematical transforms necessary for image processing.
CO2	To study the image enhancement techniques with different filters.
CO3	To study image restoration procedures understanding of different noises.
CO4	To study the lossy and lossless image compression procedures.
CO5	Interpret image segmentation and representation techniques.

PO CO	A	B	C	D	E	F	G	H	I	J	K
1	3					2		3			
2	2	2	3				3		1		
3	2	3	2			2	2	2			
4	2	3			2				2	3	2
5				2	2	3	2				

Note: Correlation levels 1, 2 or 3 as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Subject Code/Name: - 6CS4-02 Machine Learning

CO1 Develop an appreciation for what is involved in Learning models from data
CO 2 Understand a wide variety of learning algorithms
CO 3 Understand how to evaluate models generated from data
CO4 Apply the algorithms to a real problem, optimize the models learned and report on the expected accuracy that can be achieved by applying the models
CO5 Design and evaluate machine and deep learning algorithms.

MAPPING OF COURSE OUTCOME WITH PROGRAM OUTCOMES AND PSO

COURSE OUTCOMES	PROGRAM OUTCOMES												PSO's	
	PO- 1	PO- 2	PO- 3	PO- 4	PO- 5	PO- 6	PO- 7	PO- 8	PO- 9	PO- 10	PO- 11	PO- 12	PSO- 1	PSO- 2
CO-1	2	1	3	3	-	-	2	2	-	3	-	2	2	3
CO-2	2	-	-	1	-	-	3	2	-	2	-	3	-	1
CO-3	3	3	-	2	-	-	1	3	-	2	-	3	3	-
CO-4	-	2	-	1	-	3	-	2	-	2	-	3	-	2
CO-5	1	3	-	2	-	-	1	-	-	2	-	3	3	2

Note: Correlation levels 1, 2 or 3 as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Subject Code/Name: 6CS4-03 Information Security System

Subject	Cryptography Network Security and Cyber Law
CO-1	Understand cryptography basics, algorithms and mathematical background for cryptography.
CO-2	Analyze the important cryptographic algorithms.
CO-3	Understand key management issues and algorithms.
CO-4	Understand security issues in Wireless LAN and web.
CO-5	Understand cyber security and need of cyber Laws.

CO-PO-PSO MAPPING

CO No.	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO1	PSO2	PSO 3
CO-1	2	2	-	-	-	-	-	-	-	-	-	-	1	1	-
CO-2	2	2	-	1	-	-	-	-	-	-	-	1	2	2	-
CO-3	2	2	-	-	-	-	-	-	-	-	-	1	2	2	-
CO-4	2	1	-	-	-	-	-	-	-	-	-	1	2	2	-
CO-5	2	1	-	-	-	1	-	-	-	-	-	1	-	-	-
Avg. Mapping	2.0	1.6	-	1.0	-	1.0	-	-	-	-	-	1.0	1.8	1.8	-

Subject Code/Name: - 6CS4-04/Computer Architecture and Organization

List of Course Outcomes	
CO-1	Understand and Describe the Micro operation, Register Transfer Language and basic design of digital computer system
CO-2	Develop the assembly language programming and demonstrate the addressing modes used in instructions.
CO-3	Design and Understand CPU Organization, Pipeline and Demonstrate Addressing Mode
CO-4	Apply algorithms for arithmetic operations and Understand Concept of Input - Output organization
CO-5	Classify and design memory organization and Define Multiprocessor

MAPPING OF COURSE OUTCOME WITH PROGRAM OUTCOMES AND PSO

COURS E OUTCO ME	PROGRAM OUTCOME												PSO	
	P O- 1	P O- 2	P O- 3	P O- 4	P O- 5	P O- 6	P O- 7	P O- 8	P O- 9	P O- 10	P O- 11	P O- 12	PS O-1	PS O-2
I	3	2	1	1		2							1	
II	3	2	1									1	1	
III	3	2	1	1								1	2	1
IV	3	2	1									1		2
V	3	2	2	1		2						2	1	2

Note: Correlation levels 1, 2 or 3 as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Subject Code/Name:- 6CS4-05/Artificial Intelligence

List of Course Outcomes	
CO-1	Graduates should be able to understand the basics of AI and plan, develop, evaluate and manage a solution to a particular problem using informed and uninformed search.
CO-2	Graduates should understand and apply artificial intelligence in the field of game playing.
CO-3	Graduates should be able to explain, discuss and develop the importance of knowledge base in AI and implement it in planning, reasoning and Bayesian networks.
CO-4	Graduates should be able to explain, discuss and solve simple problems by applying machine learning and neural networks.
CO-5	Graduates should be able to understand different issues in NLP and to develop Expert system and robotics.

MAPPING OF COURSE OBJECTIVE WITH PROGRAM OUTCOMES

COURSE OUTCOME S	PROGRAM OUTCOMES											
	PO -1	PO -2	PO -3	PO -4	PO -5	PO -6	PO -7	PO -8	PO -9	PO -10	PO -11	PO -12
CO-1	3	3	2	2	1						2	3
CO-2	2	2	1	1	2							2
CO-3	3	1	2	2	3						2	3
CO-4	3	3	2	3	3						2	3
CO-5	3	3	2	3	3						2	3

Note: Correlation levels 1, 2 or 3 as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Subject Code/Name:- 6CS4-06 Cloud Computing

List of Course Outcomes (Cloud Computing)	
CO-1	Students will understand the basics of cloud computing
CO-2	Students will be able to understand the working of data centers and learn about mapReduce, hadoop & Google App Engine.
CO-3	Students will be able to understand importance of virtualization.
CO-4	Students will be able to study the different cloud service providers and the role of security in cloud computing.

MAPPING OF COURSE OUTCOMES WITH PO & PSO:

COURSE OUTCOMES	PROGRAM OUTCOMES												PSO's	
	P O-1	P O-2	P O-3	P O-4	P O-5	P O-6	P O-7	P O-8	P O-9	P O-10	P O-11	P O-12	PS O-1	PS O-2
CO-1	2	1	1	2	2	2	-	-	1	1	2	2	-	3
CO-2	-	2	2	-	-	2	1	-	2	2	2	-	1	1
CO-3	3	-	3	-	-	1	1	-	-	1	-	3	1	2
CO-4	2	2	3	2	-	1	1	-	-	2	2	2	-	3

Subject Code/Name:- 6CS5-11/Distributed System

List of Course Outcomes	
CO-1	Understand how to apply the knowledge to gain insight of Distributed System in solving 1 real world problems.
CO-2	Identify and formulate the broader domain areas where the concept of Distributed 2 System can be used.
CO-3	Develop various web applications and automate the real time problems
CO-4	Enhance the concept of failure recovery in Distributed System and also develop software 4 to recover from failure.
CO-5	Utilize the modern software and technical skills in order to control concurrency in 5 distributed transactions.

MAPPING OF COURSE OUTCOME WITH PROGRAM OUTCOMES AND PSO

COURS E OUTCO ME	PROGRAM OUTCOME												PSO	
	P O- 1	P O- 2	P O- 3	P O- 4	P O- 5	P O- 6	P O- 7	P O- 8	P O- 9	P O- 10	P O- 11	P O- 12	PS O-1	PS O-2
I	3	3	3	2	2			2			1	2	1	3
II	3	3	3	2	2			2			1	2	1	1
III	3	3	3	2	2			2			1	2	-	3
IV	3	3	3	2	2			2			1	2	2	2
V	3	3	3	2	2			2			1	2	2	1

Note: Correlation levels 1, 2 or 3 as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

