Indra Ganesan
COLLEGE OF ENGINEERING

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Accredited by NAAC with 'B+' Grade, 2(f) & 12B Status Institution by UGC

IG Valley, Madurai Main Road, Manikandam, Tiruchirappalli - 620012

NAAC DOCUMENTS

QUALITY INDICATOR FRAME WORK

CRITERION – 2

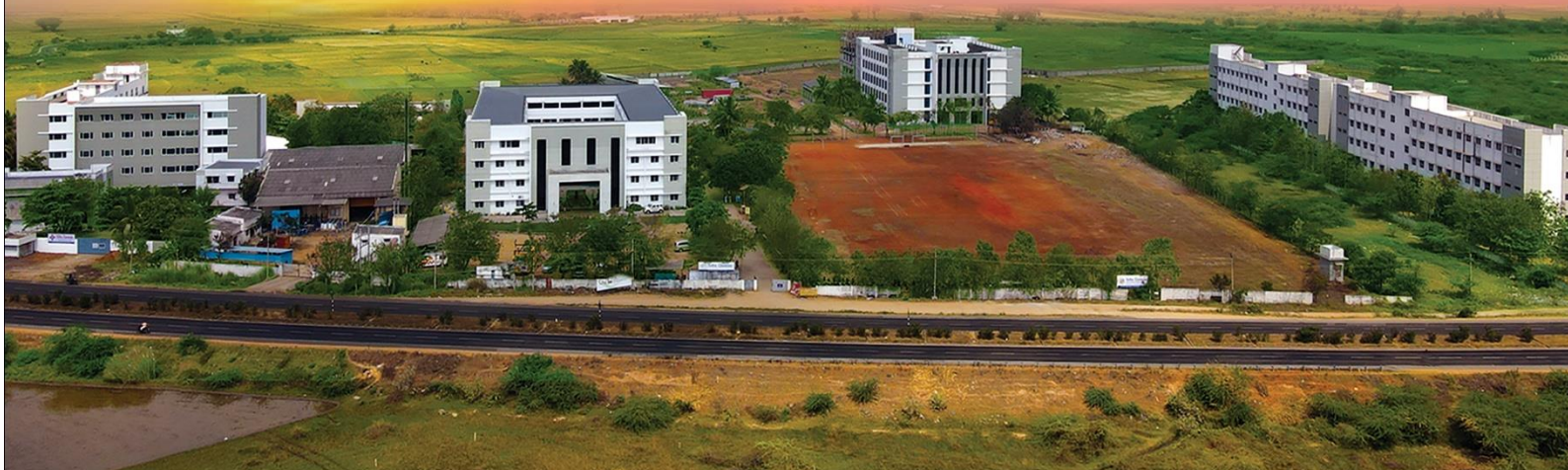
TEACHING-LEARNING AND EVALUATION

SUBMITTED BY

IQAC

INTERNAL QUALITY ASSURANCE CELL

INDRA GANESAN COLLEGE OF ENGINEERING



Indra Ganesan
COLLEGE OF ENGINEERING
Madurai Main Road (NH-45B), Manikandam, Tiruchirappalli - 620 012
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Criteria 2	Teaching-Learning and Evaluation	350

Key Indicator-2.6 Student Performances and Learning Outcome (90)

2.6.1 Programme Outcomes (POs) and Course Outcomes (COs) for all programmes offered by the institution are stated and displayed on website

DEPARTMENT OF COMPUTER SCIENCE RG-2017

INDRA GANESAN COLLEGE OF ENGINEERING
IG Valley, Manikandam, Tiruchirappalli, Tamil Nadu – 620 012, India
(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai-25)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

REGULATION -2017

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.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs):

1. To enable graduates to pursue higher education and research, or have a successful career in industries associated with Computer Science and Engineering, or as entrepreneurs. To ensure that graduates will have the ability and attitude to adapt to emerging technological changes.

PROGRAM OUTCOMES POs:

Engineering Graduates will be able to:

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.

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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

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SEM –III

C201- MA8351 DISCRETE MATHEMATICS

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C201.1	Describe structures on many levels.	1,2,3,4,10,11,12	1,2,3
C201.2	Develop the knowledge of the counting principles.	1,2,3,4,10,11,12	1,2,3
C201.3	Describe the concepts needed to test the logic of a program.	1,2,3,4,10,11,12	1,2,3
C201.4	Apply the concepts of lattices and Boolean algebra based on homeomorphisms.	1,2,3,4,10,11,12	1,2,3
C201.5	Solve the engineering problems using mathematical induction.	1,2,3,4,10,11,12	1,2,3
C201.6	Apply the concepts of algebraic systems in groups, rings and fields..	1,2,3,4,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C201.1	3	2	2	1	-	-	-	-	-	2	1	1	2	2	1
C201.2	3	2	2	1	-	-	-	-	-	2	1	1	2	2	1
C201.3	3	2	2	1	-	-	-	-	-	2	1	1	2	2	1
C201.4	3	2	2	1	-	-	-	-	-	2	1	1	2	2	1
C201.5	3	2	2	1	-	-	-	-	-	2	1	1	2	2	1
C201.6	3	2	2	1	-	-	-	-	-	2	1	1	2	2	1
C201	3	2	2	1	-	-	-	-	-	2	1	1	2	2	1

C202-CS8351 DIGITAL PRINCIPLES AND SYSTEM DESIGN

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C202.1	Apply Arithmetic operations in any number system and various techniques to simplify the Boolean function using K-map	1,2,3,4,10,11,12	1,2,3
C202.2	Build combinational circuits that perform arithmetic operations using logic gates.	1,2,3,4,10,11,12	1,2,3
C202.3	Design and implement synchronous sequential system for the given specification	1,2,3,4,10,11,12	1,2,3
C202.4	Design and Analysis of Asynchronous sequential circuits for the given condition.	1,2,3,4,10,11,12	1,2,3
C202.5	Design and implement memory accessing systems and systems using Programmable Logic Array.	1,2,3,4,10,11,12	1,2,3
C202.6	Solve Verilog codes for the design of digital circuits.	1,2,3,4,10,11,12	1,2,3

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Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C202.1	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C202.2	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C202.3	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C202.4	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C202.5	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C202.6	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C202	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1

C203- CS8391 DATA STRUCTURES

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C203.1	Illustrate the basic concepts of abstract data types and implement List ADT	1,2,3,4,10,11,12	1,2,3
C203.2	Design and develop programs using stack and Queue ADTs in linear data structure	1,2,3,4,10,11,12	1,2,3
C203.3	Illustrate the non-linear data structures tree and its applications	1,2,3,4,10,11,12	1,2,3
C203.4	Apply various algorithms in graph and summarize its applications	1,2,3,4,10,11,12	1,2,3
C203.5	Summarize various searching, sorting and hashing techniques	1,2,3,4,10,11,12	1,2,3
C203.6	Apply various sorting algorithms for a give problem	1,2,3,4,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C203.1	3	3	1	1	-	-	-	-	-	2	1	1	2	2	1
C203.2	3	3	1	1	-	-	-	-	-	2	1	1	2	2	1
C203.3	3	3	1	1	-	-	-	-	-	2	1	1	2	2	1
C203.4	3	3	1	1	-	-	-	-	-	2	1	1	2	2	1
C203.5	3	3	1	1	-	-	-	-	-	2	1	1	2	2	1
C203.6	3	3	1	1	-	-	-	-	-	2	1	1	2	2	1
C203	3	3	1	1	-	-	-	-	-	2	1	1	2	2	1

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C204- CS8392 OBJECT ORIENTED PROGRAMMING

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C204.1	Demonstrate and build simple Graphical User Interfaces.	1,2,3,4,10,11,12	1,2,3
C204.2	Summarize Object Oriented Programming concepts and basic characteristics of Java.	1,2,3,4,10,11,12	1,2,3
C204.3	Solve a java application with threads and generics classes.	1,2,3,4,10,11,12	1,2,3
C204.4	Develop interactive Java programs using swings.	1,2,3,4,10,11,12	1,2,3
C204.5	Demonstrate the Java programs with the concepts of inheritance and interfaces.	1,2,3,4,10,11,12	1,2,3
C204.6	Develop Java applications with threads and generics classes	1,2,3,4,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C204.1	3	2	2	1	-	-	-	-	-	2	1	1	2	2	1
C204.2	3	2	2	1	-	-	-	-	-	2	1	1	2	2	1
C204.3	3	2	2	1	-	-	-	-	-	2	1	1	2	2	1
C204.4	3	2	2	1	-	-	-	-	-	2	1	1	2	2	1
C204.5	3	2	2	1	-	-	-	-	-	2	1	1	2	2	1
C204.6	3	2	2	1	-	-	-	-	-	2	1	1	2	2	1
C204	3	2	2	1	-	-	-	-	-	2	1	1	2	2	1

C205- EC8395 COMMUNICATION ENGINEERING

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C205.1	Describe various pulse modulation techniques.	1,2,3,4,10,11,12	1,2,3
C205.2	Explain about Spread spectrum and multiple access technique.	1,2,3,4,10,11,12	1,2,3
C205.3	Analyse information theory and error control coding schemes.	1,2,3,4,10,11,12	1,2,3
C205.4	Describe various modulation and demodulation techniques.	1,2,3,4,10,11,12	1,2,3
C205.5	Describe spread spectrum techniques and multiple access techniques.	1,2,3,4,10,11,12	1,2,3
C205.6	Explain various pulse shaping techniques.	1,2,3,4,10,11,12	1,2,3

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Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C205.1	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C205.2	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C205.3	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C205.4	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C205.5	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C205.6	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C205	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1

C206- CS8381 DATA STRUCTURES LABORATORY

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C206.1	Write functions to implement linear and non-linear data structure and operations.	1,2,3,4,5,9,10,11,12	1,2,3
C206.2	Suggest and validate appropriate linear and non-linear data structure operations for solving a given problem.	1,2,3,4,5,9,10,11,12	1,2,3
C206.3	Perform task as an individual and / or team member to manage the task in time.	1,2,3,4,5,9,10,11,12	1,2,3
C206.4	Express the Engineering activities with effective presentation and report.	1,2,3,4,5,9,10,11,12	1,2,3
C206.5	Implement various tree operations.	1,2,3,4,5,9,10,11,12	1,2,3
C206.6	Write functions to implement linear and non-linear data structure and operations.	1,2,3,4,5,9,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C206.1	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C206.2	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C206.3	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C206.4	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C206.5	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C206.6	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C206	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1

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C207- CS8383 OBJECT ORIENTED PROGRAMMING LABORATORY

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C207.1	Develop, implement and validate java programs for various practical applications.	1,2,3,4,5,9,10,11,12	1,2,3
C207.2	Develop an applications using event handling.	1,2,3,4,5,9,10,11,12	1,2,3
C207.3	Demonstrate java programs with exception handling and multithreading	1,2,3,4,5,9,10,11,12	1,2,3
C207.4	Implement java programs for simple application that makes use of packages and interfaces	1,2,3,4,5,9,10,11,12	1,2,3
C207.5	Design application using file processing, generic programming and event handling	1,2,3,4,5,9,10,11,12	1,2,3
C207.6	Interpret the findings with appropriate technological / research citation.	1,2,3,4,5,9,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C207.1	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C207.2	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C207.3	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C207.4	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C207.5	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C207.6	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C207	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1

C208- CS8382 DIGITAL SYSTEMS LABORATORY

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C208.1	Perform task as an individual and / or team member to manage the task in time.	1,2,3,4,5,9,10,11,12	1,2,3
C208.2	Exhibit ethical principles in engineering practices.	1,2,3,4,5,9,10,11,12	1,2,3
C208.3	Practice shift registers using Flip-flops	1,2,3,4,5,9,10,11,12	1,2,3
C208.4	Illustrate Combinational circuits Using MSI Devices.	1,2,3,4,5,9,10,11,12	1,2,3
C208.5	To design and analyze the simple digital systems using verilog or VHDL.	1,2,3,4,5,9,10,11,12	1,2,3
C208.6	Interpret the findings with appropriate technological / research citation.	1,2,3,4,5,9,10,11,12	1,2,3

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Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C208.1	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C208.2	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C208.3	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C208.4	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C208.5	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C208.6	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C208	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1

C209- HS8381 INTERPERSONNEL SKILL/ LISTENING AND SPEAKING

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C209.1	Express the Engineering activities with effective presentation and report.	1,2,3,4,5,9,10,11,12	1,2,3
C209.2	Participate in group discussions.	1,2,3,4,5,9,10,11,12	1,2,3
C209.3	Participate confidently and appropriately in conversations both formal and informal.	1,2,3,4,5,9,10,11,12	1,2,3
C209.4	Make effective presentations.	1,2,3,4,5,9,10,11,12	1,2,3
C209.5	Listen and respond appropriately.	1,2,3,4,5,9,10,11,12	1,2,3
C209.6	Hone active listening skills to connect better with people.	1,2,3,4,5,9,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C209.1	3	3	2	2	1	-	-	-	2	2	1	1	2	2	1
C209.2	3	3	2	2	1	-	-	-	2	2	1	1	2	2	1
C209.3	3	3	2	2	1	-	-	-	2	2	1	1	2	2	1
C209.4	3	3	2	2	1	-	-	-	2	2	1	1	2	2	1
C209.5	3	3	2	2	1	-	-	-	2	2	1	1	2	2	1
C209.6	3	3	2	2	1	-	-	-	2	2	1	1	2	2	1
C209	3	3	2	2	1	-	-	-	2	2	1	1	2	2	1

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SEM –IV

C210- MA8302 PROBABILITY AND QUEUING THEORY

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C210.1	Solve the problems related to random variables and standard distributions.	1,2,3,4,10,11,12	1,2,3
C210.2	Apply and characterize phenomenon which evolve with respect to time in a probabilistic manner.	1,2,3,4,10,11,12	1,2,3
C210.3	Apply the Concepts of random processes in engineering problems.	1,2,3,4,10,11,12	1,2,3
C210.4	Interpret the various series queues and open Jackson Network.	1,2,3,4,10,11,12	1,2,3
C210.5	Apply the concept of Queuing Models in real life problem.	1,2,3,4,10,11,12	1,2,3
C210.6	Develop the fundamental knowledge of the concepts of probability and have knowledge of standard distributions which can describe real life phenomenon.	1,2,3,4,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C210.1	3	3	2	2	-	-	-	-	-	2	1	1	3	2	1
C210.2	3	3	2	2	-	-	-	-	-	2	1	1	3	2	1
C210.3	3	3	2	2	-	-	-	-	-	2	1	1	3	2	1
C210.4	3	3	2	2	-	-	-	-	-	2	1	1	3	2	1
C210.5	3	3	2	2	-	-	-	-	-	2	1	1	3	2	1
C210.6	3	3	2	2	-	-	-	-	-	2	1	1	3	2	1
C210	3	3	2	2	-	-	-	-	-	2	1	1	3	2	1

C211- CS8491 COMPUTER ARCHITECTURE

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C211.1	Explain the basics structure of computers, operations and instructions.	1,2,3,4,10,11,12	1,2,3
C211.2	Outline the parallel processing architectures.	1,2,3,4,10,11,12	1,2,3
C211.3	Apply the arithmetic algorithms to design Arithmetic and Logic Unit.	1,2,3,4,10,11,12	1,2,3
C211.4	Draw the data and control path for a pipelined processor.	1,2,3,4,10,11,12	1,2,3
C211.5	Explain the memory hierarchies also the functionalities of I/O devices.	1,2,3,4,10,11,12	1,2,3

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C211.6	Evaluate the performance of the system and its components.	1,2,3,4,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C211.1	3	2	2	1	-	-	-	-	-	2	1	1	2	2	1
C211.2	3	2	2	1	-	-	-	-	-	2	1	1	2	2	1
C211.3	3	2	2	1	-	-	-	-	-	2	1	1	2	2	1
C211.4	3	2	2	1	-	-	-	-	-	2	1	1	2	2	1
C211.5	3	2	2	1	-	-	-	-	-	2	1	1	2	2	1
C211.6	3	2	2	1	-	-	-	-	-	2	1	1	2	2	1
C211	3	2	2	1	-	-	-	-	-	2	1	1	2	2	1

C212- CS8492 DATABASE MANAGEMENT SYSTEM

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C212.1	Draw ER diagrams from relational model using the fundamental concepts.	1,2,3,4,10,11,12	1,2,3
C212.2	Examine the advanced concepts of security in databases systems.	1,2,3,4,10,11,12	1,2,3
C212.3	Discuss the concepts of transaction processing and concurrency control.	1,2,3,4,10,11,12	1,2,3
C212.4	Describe the fundamental concepts of relational database and SQL.	1,2,3,4,10,11,12	1,2,3
C212.5	Summarize the information retrieval process for the distributed database	1,2,3,4,10,11,12	1,2,3
C212.6	Distinguish various indexing and hashing strategies in different database systems.	1,2,3,4,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C212.1	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C212.2	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C212.3	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C212.4	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C212.5	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C212.6	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C212	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1

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C213- CS8451 DESIGN AND ANALYSIS OF ALGORITHMS

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C213.1	Analyze the different algorithm design techniques for a given problem.	1,2,3,4,10,11,12	1,2,3
C213.2	Modify the existing algorithms to improve efficiency.	1,2,3,4,10,11,12	1,2,3
C213.3	Apply brute force and divide and conquer technique for the given real time problem.	1,2,3,4,10,11,12	1,2,3
C213.4	Apply dynamic programming and greedy technique for the given real time problem	1,2,3,4,10,11,12	1,2,3
C213.5	Apply approximation algorithm and demonstrate branch and bound and backtracking techniques for the given real time problem	1,2,3,4,10,11,12	1,2,3
C213.6	Interpret the Fundamental needs of algorithms in problem solving and analyze the time and space complexity of algorithms.	1,2,3,4,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C213.1	3	3	3	2	-	-	-	-	-	2	1	1	3	2	1
C213.2	3	3	3	2	-	-	-	-	-	2	1	1	3	2	1
C213.3	3	3	3	2	-	-	-	-	-	2	1	1	3	2	1
C213.4	3	3	3	2	-	-	-	-	-	2	1	1	3	2	1
C213.5	3	3	3	2	-	-	-	-	-	2	1	1	3	2	1
C213.6	3	3	3	2	-	-	-	-	-	2	1	1	3	2	1
C213	3	3	3	2	-	-	-	-	-	2	1	1	3	2	1

C214- CS8493 OPERATING SYSTEMS

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C214.1	Implement administrative tasks on Linux servers.	1,2,3,4,10,11,12	1,2,3
C214.2	Explain the basic elements of a computer system and an operating system	1,2,3,4,10,11,12	1,2,3
C214.3	Demonstrate the administrative tasks on Linux Servers and compare the features of Android and iOS.	1,2,3,4,10,11,12	1,2,3
C214.4	Compare the memory management techniques for 32 and 64-bit architectures.	1,2,3,4,10,11,12	1,2,3
C214.5	Encapsulate the concepts of Mass Storage Structure, File System Structure and I/O Systems.	1,2,3,4,10,11,12	1,2,3
C214.6	Illustrate the operating system basic concepts, System call, structure and its functionalities.	1,2,3,4,10,11,12	1,2,3

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Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C214.1	3	3	2	2	-	-	-	-	-	2	1	1	3	2	1
C214.2	3	3	2	2	-	-	-	-	-	2	1	1	3	2	1
C214.3	3	3	2	2	-	-	-	-	-	2	1	1	3	2	1
C214.4	3	3	2	2	-	-	-	-	-	2	1	1	3	2	1
C214.5	3	3	2	2	-	-	-	-	-	2	1	1	3	2	1
C214.6	3	3	2	2	-	-	-	-	-	2	1	1	3	2	1
C214	3	3	2	2	-	-	-	-	-	2	1	1	3	2	1

C215- CS8494 SOFTWARE ENGINEERING

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C215.1	Explain the basics of software process and project management.	1,2,3,4,10,11,12	1,2,3
C215.2	Relate the various software techniques for testing and implementation.	1,2,3,4,10,11,12	1,2,3
C215.3	Analyze the factors and risks involved in project.	1,2,3,4,10,11,12	1,2,3
C215.4	Identify the key activities in managing a software project and recognize different process model.	1,2,3,4,10,11,12	1,2,3
C215.5	Compare various testing and maintenance methods	1,2,3,4,10,11,12	1,2,3
C215.6	Explain the concepts of requirements engineering and Analysis Modeling.	1,2,3,4,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C215.1	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C215.2	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C215.3	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C215.4	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C215.5	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C215.6	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C215	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1

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C216- CS8481 DATABASE MANAGEMENT SYSTEMS LABORATORY

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C216.1	Design and develop the real time database application using ER modeling and normalization concepts.	1,2,3,4,5,9,10,11,12	1,2,3
C216.2	Build an application using DDL and DML queries and Write functions and procedures for database applications	1,2,3,4,5,9,10,11,12	1,2,3
C216.3	Design and implement database using ER model and normalization to design and implement database.	1,2,3,4,5,9,10,11,12	1,2,3
C216.4	Perform task as an individual and / or team member to manage the task in time.	1,2,3,4,5,9,10,11,12	1,2,3
C216.5	Compute typical data definitions and manipulation commands.	1,2,3,4,5,9,10,11,12	1,2,3
C216.6	Interpret the findings with appropriate technological / research citation.	1,2,3,4,5,9,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C216.1	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C216.2	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C216.3	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C216.4	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C216.5	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C216.6	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C216	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1

C217- CS8461 OPERATING SYSTEMS LABORATORY

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C217.1	Analyze the performance of the various page replacement algorithms.	1,2,3,4,5,9,10,11,12	1,2,3
C217.2	Illustrate the various CPU scheduling algorithms.	1,2,3,4,5,9,10,11,12	1,2,3
C217.3	Implement deadlock avoidance and detection algorithms.	1,2,3,4,5,9,10,11,12	1,2,3
C217.4	Develop, implement and validate operating system algorithms pertaining to management of processes, Memory, files and disks.	1,2,3,4,5,9,10,11,12	1,2,3
C217.5	Execute and validate UNIX commands and shell scripts in Linux.	1,2,3,4,5,9,10,11,12	1,2,3
C217.6	Express the Engineering activities with effective presentation and report.	1,2,3,4,5,9,10,11,12	1,2,3

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Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C217.1	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C217.2	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C217.3	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C217.4	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C217.5	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C217.6	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C217	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1

C218- HS8461 ADVANCED READING AND WRITING

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C218.1	Enhance the technical writing skills.	1,2,3,4,5,9,10,11,12	1,2,3
C218.2	Develop proposal writing skills.	1,2,3,4,5,9,10,11,12	1,2,3
C218.3	Perform critical thinking in various professional contexts.	1,2,3,4,5,9,10,11,12	1,2,3
C218.4	Summarize in writing ideas from a given text	1,2,3,4,5,9,10,11,12	1,2,3
C218.5	Comprehend information after reading in print and online sources	1,2,3,4,5,9,10,11,12	1,2,3
C218.6	Write winning job applications.	1,2,3,4,5,9,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C218.1	3	3	2	2	1	-	-	-	2	2	1	1	2	2	1
C218.2	3	3	2	2	1	-	-	-	2	2	1	1	2	2	1
C218.3	3	3	2	2	1	-	-	-	2	2	1	1	2	2	1
C218.4	3	3	2	2	1	-	-	-	2	2	1	1	2	2	1
C218.5	3	3	2	2	1	-	-	-	2	2	1	1	2	2	1
C218.6	3	3	2	2	1	-	-	-	2	2	1	1	2	2	1
C218	3	3	2	2	1	-	-	-	2	2	1	1	2	2	1

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SEM –V

C301- MA8551 ALGEBRA AND NUMBER THEORY

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C301.1	Explain the concepts of finite fields and polynomials to solve problems in advanced algebra.	1,2,3,4,10,11,12	1,2,3
C301.2	Extend the concepts of multiplicative functions and classical theorems. Also Associate the knowledge of integrated approach to Number theory and abstract algebra.	1,2,3,4,10,11,12	1,2,3
C301.3	Describe the concept of Diophantine equations and congruences and exhibit the efficient use of advanced algebraic techniques in number theory.	1,2,3,4,10,11,12	1,2,3
C301.4	Explain the basic concepts of group and rings, and use appropriate techniques and reasoning to derive properties of groups, rings.	1,2,3,4,10,11,12	1,2,3
C301.5	Prove classical theorems and apply properties of multiplicative functions such as the Euler phi-function and quadratic residues.	1,2,3,4,10,11,12	1,2,3
C301.6	Define and interpret the concepts of divisibility, base-b representations, greatest common divisor, least common multiple, prime, and prime-factorization.	1,2,3,4,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C301.1	3	3	3	3	-	-	-	-	-	2	1	1	2	2	1
C301.2	3	3	3	3	-	-	-	-	-	2	1	1	2	2	1
C301.3	3	3	3	3	-	-	-	-	-	2	1	1	2	2	1
C301.4	3	3	3	3	-	-	-	-	-	2	1	1	2	2	1
C301.5	3	3	3	3	-	-	-	-	-	2	1	1	2	2	1
C301.6	3	3	3	3	-	-	-	-	-	2	1	1	2	2	1
C301	3	3	3	3	-	-	-	-	-	2	1	1	2	2	1

C302- CS8591 COMPUTER NETWORKS

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C302.1	Identify various layers of network and discuss the functions of physical layer.	1,2,3,4,10,11,12	1,2,3
C302.2	Explain the different services of network layer.	1,2,3,4,10,11,12	1,2,3
C302.3	Compare the different transport layer protocols and their applicability based on user requirements.	1,2,3,4,10,11,12	1,2,3
C302.4	Explain the basics of how data flows from one node to another	1,2,3,4,10,11,12	1,2,3
C302.5	Design, calculate, and apply subnet masks and addresses to fulfill	1,2,3,4,10,11,12	1,2,3

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	networking requirements		
C302.6	Identify the different types of network devices and their functions within a network	1,2,3,4,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C302.1	3	3	2	1	-	-	-	-	-	2	1	1	2	1	1
C302.2	3	3	2	1	-	-	-	-	-	2	1	1	2	1	1
C302.3	3	3	2	1	-	-	-	-	-	2	1	1	2	1	1
C302.4	3	3	2	1	-	-	-	-	-	2	1	1	2	1	1
C302.5	3	3	2	1	-	-	-	-	-	2	1	1	2	1	1
C302.6	3	3	2	1	-	-	-	-	-	2	1	1	2	1	1
C302	3	3	2	1	-	-	-	-	-	2	1	1	2	1	1

C303- EC8691 MICROPROCESSORS AND MICROCONTROLLERS

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C303.1	Discuss about system bus structure of 8086 Microprocessor	1,2,3,4,10,11,12	1,2,3
C303.2	Explain the various interfacing modules with 8086 Microprocessor	1,2,3,4,10,11,12	1,2,3
C303.3	Develop 8051 Microcontroller based real time systems by interfacing with memory and I/O devices.	1,2,3,4,10,11,12	1,2,3
C303.4	Design 8086 Microprocessor based real time systems by interfacing with memory and I/O devices.	1,2,3,4,10,11,12	1,2,3
C303.5	Discuss the internal architecture of 8086 Microprocessor and 8051 Microcontroller along with their instruction sets	1,2,3,4,10,11,12	1,2,3
C303.6	Explain about various interfacing modules with 8051 microcontroller	1,2,3,4,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C303.1	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C303.2	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C303.3	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C303.4	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C303.5	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C303.6	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C303	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1

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C304- CS8310 THEORY OF COMPUTATION

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C304.1	Discuss the different kinds of proof and construct automata for any pattern.	1,2,3,4,10,11,12	1,2,3
C304.2	Design Turing machines for any language and propose computation solutions.	1,2,3,4,10,11,12	1,2,3
C304.3	Construct regular expression for any pattern and find minimization of automata.	1,2,3,4,10,11,12	1,2,3
C304.4	Illustrate the concept of automata, regular expression for any pattern to get the specified transition diagram.	1,2,3,4,10,11,12	1,2,3
C304.5	Discuss decidable and undecidable problems, solvable and unsolvable problems to solve the NP complete.	1,2,3,4,10,11,12	1,2,3
C304.6	Demonstrate Context free grammar for any construct and to design the parse tree for the given grammar.	1,2,3,4,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C304.1	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C304.2	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C304.3	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C304.4	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C304.5	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C304.6	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C304	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1

C305- CS8592 OBJECT ORIENTED ANALYSIS AND DESIGN

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C305.1	Explain about the fundamentals of object modeling and differentiate Unified Process from other approaches.	1,2,3,4,10,11,12	1,2,3
C305.2	Apply the different static UML diagrams for the given scenario.	1,2,3,4,10,11,12	1,2,3
C305.3	Interpret the UML based software design into pattern-based design.	1,2,3,4,10,11,12	1,2,3
C305.4	Analyze the strengths and weakness of the design specification.	1,2,3,4,10,11,12	1,2,3
C305.5	Construct software design for a real-life problem	1,2,3,4,10,11,12	1,2,3
C305.6	Describe the Object-Oriented concepts and its applications.	1,2,3,4,10,11,12	1,2,3

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Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C305.1	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C305.2	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C305.3	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C305.4	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C305.5	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C305.6	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C305	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1

C306- OCE551 AIR POLLUTION AND CONTROL ENGINEERING

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C306.1	Explain the nature and characteristics of air pollutants and basic concepts of air quality management.	1,2,3,4,7,10,11,12	1,2,3
C306.2	Design stacks and particulate air pollution control devices to meet applicable standards	1,2,3,4,7,10,11,12	1,2,3
C306.3	Explain the gaseous pollutant control by adsorption, absorption, condensation and combustion	1,2,3,4,7,10,11,12	1,2,3
C306.4	Demonstrate the environmental impact assessment and air quality	1,2,3,4,7,10,11,12	1,2,3
C306.5	Identify and solve noise pollution problems	1,2,3,4,7,10,11,12	1,2,3
C306.6	Discuss about the air pollution causes to the human beings , animals and plants	1,2,3,4,7,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C306.1	3	3	2	1	-	-	2	-	-	2	2	1	2	2	1
C306.2	3	3	2	1	-	-	2	-	-	2	2	1	2	2	1
C306.3	3	3	2	1	-	-	2	-	-	2	2	1	2	2	1
C306.4	3	3	2	1	-	-	2	-	-	2	2	1	2	2	1
C306.5	3	3	2	1	-	-	2	-	-	2	2	1	2	2	1
C306.6	3	3	2	1	-	-	2	-	-	2	2	1	2	2	1
C306	3	3	2	1	-	-	2	-	-	2	2	1	2	2	1

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C307- EC8681 MICROPROCESSORS AND MICROCONTROLLERS LABORATORY

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C307.1	Write and execute ALP Program using Microprocessor.	1,2,3,4,5,9,10,11,12	1,2,3
C307.2	Develop a program to communicate Microprocessor with Personal Computer.	1,2,3,4,5,9,10,11,12	1,2,3
C307.3	Use a combination of Hardware and software to solve a real time problem.	1,2,3,4,5,9,10,11,12	1,2,3
C307.4	Write and validate Assembly language programs using the instruction set of 8086 Microprocessor and 8051 Microcontroller.	1,2,3,4,5,9,10,11,12	1,2,3
C307.5	Design, implement and validate 8086 based real time systems by interfacing with I/O devices.	1,2,3,4,5,9,10,11,12	1,2,3
C307.6	Generate waveforms using Microprocessor.	1,2,3,4,5,9,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C307.1	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C307.2	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C307.3	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C307.4	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C307.5	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C307.6	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C307	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1

C308- CS8582 OBJECT ORIENTED ANALYSIS AND DESIGN LABORATORY

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C308.1	Identify and map basic software requirements in UML mapping	1,2,3,4,5,9,10,11,12	1,2,3
C308.2	Explain Object Oriented analysis and design concept for a given problem specification	1,2,3,4,5,9,10,11,12	1,2,3
C308.3	Predict the software quality using design patterns	1,2,3,4,5,9,10,11,12	1,2,3
C308.4	Differentiate the interaction between objects and represent them using UML Sequence and Collaboration Diagrams for the given scenario	1,2,3,4,5,9,10,11,12	1,2,3
C308.5	Develop a dynamic application that includes test cases.	1,2,3,4,5,9,10,11,12	1,2,3
C308.6	Design the UML diagrams for the problem statements.	1,2,3,4,5,9,10,11,12	1,2,3

Mapping of COs, POs with PSOs

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Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C308.1	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C308.2	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C308.3	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C308.4	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C308.5	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C308.6	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C308	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1

C309- CS8581 NETWORKS LABORATORY

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C309.1	Implement various protocols using TCP and UDP.	1,2,3,4,5,9,10,11,12	1,2,3
C309.2	Illustrate Network simulator (NS) and Simulate Congestion Control Algorithms using NS.	1,2,3,4,5,9,10,11,12	1,2,3
C309.3	Use simulation tools to analyze the performance of various network protocols.	1,2,3,4,5,9,10,11,12	1,2,3
C309.4	Analyze various routing algorithms.	1,2,3,4,5,9,10,11,12	1,2,3
C309.5	Implement networking commands and various protocols using TCP and UDP.	1,2,3,4,5,9,10,11,12	1,2,3
C309.6	Use simulation tools to analyze the performance of various network protocols.	1,2,3,4,5,9,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C309.1	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C309.2	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C309.3	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C309.4	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C309.5	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C309.6	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C309	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1

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SEM –VI

C310 - CS8651 INTERNET PROGRAMMING

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C310.1	Interpret a basic website using HTML and cascading style sheets	1,2,3,4,10,11,12	1,2,3
C310.2	Demonstrate dynamic web page with validation using JavaScript objects and by applying different event handling mechanisms	1,2,3,4,10,11,12	1,2,3
C310.3	Design Simple web pages in PHP and to present data in XML format	1,2,3,4,10,11,12	1,2,3
C310.4	Use AJAX and web services to develop interactive web applications.	1,2,3,4,10,11,12	1,2,3
C310.5	Develop server-side programs using Servlets and JSP.	1,2,3,4,10,11,12	1,2,3
C310.6	Build dynamic web page with validation using Java Script objects and by applying different event handling mechanisms.	1,2,3,4,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C310.1	3	2	2	2	-	-	-	-	-	2	1	1	2	2	1
C310.2	3	2	2	2	-	-	-	-	-	2	1	1	2	2	1
C310.3	3	2	2	2	-	-	-	-	-	2	1	1	2	2	1
C310.4	3	2	2	2	-	-	-	-	-	2	1	1	2	2	1
C310.5	3	2	2	2	-	-	-	-	-	2	1	1	2	2	1
C310.6	3	2	2	2	-	-	-	-	-	2	1	1	2	2	1
C310	3	2	2	2	-	-	-	-	-	2	1	1	2	2	1

C311 - CS8691 ARTIFICIAL INTELLIGENCE

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C311.1	Use appropriate search algorithms for any AI problem	1,2,3,4,10,11,12	1,2,3
C311.2	Design applications for NLP that use Artificial Intelligence.	1,2,3,4,10,11,12	1,2,3
C311.3	Represent a problem using first order and predicate logic	1,2,3,4,10,11,12	1,2,3
C311.4	Prepare for the ability to explore a variety of representational formalisms and associated algorithms.	1,2,3,4,10,11,12	1,2,3
C311.5	Describe the role of heuristics and solve various types of search problems.	1,2,3,4,10,11,12	1,2,3
C311.6	Illustrate the complications of planning and intelligent agents acting in the Real world.	1,2,3,4,10,11,12	1,2,3

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Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C311.1	3	3	2	1	-	-	-	-	-	2	1	1	3	2	1
C311.2	3	3	2	1	-	-	-	-	-	2	1	1	3	2	1
C311.3	3	3	2	1	-	-	-	-	-	2	1	1	3	2	1
C311.4	3	3	2	1	-	-	-	-	-	2	1	1	3	2	1
C311.5	3	3	2	1	-	-	-	-	-	2	1	1	3	2	1
C311.6	3	3	2	1	-	-	-	-	-	2	1	1	3	2	1
C311	3	3	2	1	-	-	-	-	-	2	1	1	3	2	1

C312- CS8401 MOBILE COMPUTING

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C312.1	Summarize the basic concepts of mobile computing and MAC protocol.	1,2,3,4,10,11,12	1,2,3
C312.2	Identify routing protocols for adhoc networks	1,2,3,4,10,11,12	1,2,3
C312.3	Experiment various mobile applications and m-commerce payment modules.	1,2,3,4,10,11,12	1,2,3
C312.4	Develop a mobile application in different mobile platforms	1,2,3,4,10,11,12	1,2,3
C312.5	Choose the appropriate routing protocols based on the network layer.	1,2,3,4,10,11,12	1,2,3
C312.6	Explain the MAC Protocols and generation of Mobile communication technologies	1,2,3,4,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C312.1	3	3	2	2	-	-	-	-	-	2	1	1	2	2	2
C312.2	3	3	2	2	-	-	-	-	-	2	1	1	2	2	2
C312.3	3	3	2	2	-	-	-	-	-	2	1	1	2	2	2
C312.4	3	3	2	2	-	-	-	-	-	2	1	1	2	2	2
C312.5	3	3	2	2	-	-	-	-	-	2	1	1	2	2	2
C312.6	3	3	2	2	-	-	-	-	-	2	1	1	2	2	2
C312	3	3	2	2	-	-	-	-	-	2	1	1	2	2	2

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C313 - CS8402 COMPILER DESIGN

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C313.1	Implement the parser for a given Context Free Grammar using various parsing methods.	1,2,3,4,10,11,12	1,2,3
C313.2	Implement the functionalities of lexical analysis phase like conversion of regular expression to DFA and minimization of DFA.	1,2,3,4,10,11,12	1,2,3
C313.3	Construct a lexical analyzer using Deterministic Finite Automata and Non-Deterministic Finite Automata.	1,2,3,4,10,11,12	1,2,3
C313.4	Develop semantic analyzers for type-checking and intermediate code generators to translate the source program into an intermediate code.	1,2,3,4,10,11,12	1,2,3
C313.5	Demonstrate the different phases of compiler using various programming language	1,2,3,4,10,11,12	1,2,3
C313.6	Construct parsers like top-down, bottom-up with an understanding of Context Free Grammars.	1,2,3,4,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C313.1	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C313.2	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C313.3	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C313.4	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C313.5	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C313.6	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C313	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1

C314 - CS8603 DISTRIBUTED SYSTEMS

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C314.1	Interpret the real-time distributed system applications	1,2,3,4,10,11,12	1,2,3
C314.2	Show the use of agreement protocols and fault tolerance mechanisms in distributed systems.	1,2,3,4,10,11,12	1,2,3
C314.3	Explain the various synchronization issues and global state for distributed systems.	1,2,3,4,10,11,12	1,2,3
C314.4	Explain the features of peer-to-peer and distributed shared memory systems	1,2,3,4,10,11,12	1,2,3
C314.5	Illustrate group communication models and global state for distributed systems.	1,2,3,4,10,11,12	1,2,3
C314.6	Describe the fundamentals of distributed systems.	1,2,3,4,10,11,12	1,2,3

Mapping of COs, POs with PSOs

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Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C314.1	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C314.2	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C314.3	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C314.4	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C314.5	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C314.6	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C314	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1

C315 - CS8075 DATA WAREHOUSING AND DATA MINING

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C315.1	Design Data warehouse system with OLAP tools	1,2,3,4,10,11,12	1,2,3
C315.2	Design suitable pre-processing and visualization techniques for data analysis	1,2,3,4,10,11,12	1,2,3
C315.3	Develop frequent pattern and association rule mining techniques for data analysis	1,2,3,4,10,11,12	1,2,3
C315.4	Develop algorithms for finding hidden and interesting patterns in data	1,2,3,4,10,11,12	1,2,3
C315.5	Illustrate appropriate classification and clustering techniques for data analysis	1,2,3,4,10,11,12	1,2,3
C315.6	Develop business analysis with OLAP tools	1,2,3,4,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C315.1	3	3	2	1	-	-	-	-	-	2	1	1	2	2	1
C315.2	3	3	2	1	-	-	-	-	-	2	1	1	2	2	1
C315.3	3	3	2	1	-	-	-	-	-	2	1	1	2	2	1
C315.4	3	3	2	1	-	-	-	-	-	2	1	1	2	2	1
C315.5	3	3	2	1	-	-	-	-	-	2	1	1	2	2	1
C315.6	3	3	2	1	-	-	-	-	-	2	1	1	2	2	1
C315	3	3	2	1	-	-	-	-	-	2	1	1	2	2	1

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C316 - CS8661 INTERNET PROGRAMMING LABORATORY

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C316.1	Perform task as an individual and / or team member to manage the task in time	1,2,3,4,5,9,10,11,12	1,2,3
C316.2	Demonstrate PHP programming to develop web applications.	1,2,3,4,5,9,10,11,12	1,2,3
C316.3	Design web pages usng HTML/XML and style sheets.	1,2,3,4,5,9,10,11,12	1,2,3
C316.4	create dynamic web pages using server side scripting.	1,2,3,4,5,9,10,11,12	1,2,3
C316.5	Construct web pages using HTML/XML, CSS and Java Script.	1,2,3,4,5,9,10,11,12	1,2,3
C316.6	Develop web applications using Servlets, JSP, PHP and web services.	1,2,3,4,5,9,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C316.1	3	3	2	2	2	-	-	-	2	2	1	1	3	2	2
C316.2	3	3	2	2	2	-	-	-	2	2	1	1	3	2	2
C316.3	3	3	2	2	2	-	-	-	2	2	1	1	3	2	2
C316.4	3	3	2	2	2	-	-	-	2	2	1	1	3	2	2
C316.5	3	3	2	2	2	-	-	-	2	2	1	1	3	2	2
C316.6	3	3	2	2	2	-	-	-	2	2	1	1	3	2	2
C316	3	3	2	2	2	-	-	-	2	2	1	1	3	2	2

C317 - CS8662 MOBILE APPLICATIONS DEVELOPMENT

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C317.1	Perform task as an individual and / or team member to manage the task in time	1,2,3,4,5,9,10,11,12	1,2,3
C317.2	Apply applications to hand-held devices	1,2,3,4,5,9,10,11,12	1,2,3
C317.3	Discover mobile applications using various layout and widgets.	1,2,3,4,5,9,10,11,12	1,2,3
C317.4	Demonstrate the architecture of mobile application development frameworks	1,2,3,4,5,9,10,11,12	1,2,3
C317.5	Model new applications to hand held devices	1,2,3,4,5,9,10,11,12	1,2,3
C317.6	Build a native application using GUI components and Mobile application development framework	1,2,3,4,5,9,10,11,12	1,2,3

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Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C317.1	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C317.2	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C317.3	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C317.4	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C317.5	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C317.6	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C317	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1

C318 - CS8611 MINI PROJECT

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C318.1	Elaborate the completed task and compile the project report.	1 -12	1,2,3
C318.2	Combine all the modules through effective team work after efficient testing.	1 -12	1,2,3
C318.3	Choose efficient tools for designing project modules.	1 -12	1,2,3
C318.4	Analyze and categorize executable project modules after considering risks.	1 -12	1,2,3
C318.5	Identify the problem by applying acquired knowledge and survey the relevant literature for getting exposed to related solutions.	1 -12	1,2,3
C318.6	Implement and test solutions to trace against the user requirements.	1 -12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C318.1	3	3	2	2	2	3	3	2	2	2	1	1	3	3	2
C318.2	3	3	2	2	2	3	3	2	2	2	1	1	3	3	2
C318.3	3	3	2	2	2	3	3	2	2	2	1	1	3	3	2
C318.4	3	3	2	2	2	3	3	2	2	2	1	1	3	3	2
C318.5	3	3	2	2	2	3	3	2	2	2	1	1	3	3	2
C318.6	3	3	2	2	2	3	3	2	2	2	1	1	3	3	2
C318	3	3	2	2	2	3	3	2	2	2	1	1	3	3	2

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C319 - HS8581 & PROFESSIONAL COMMUNICATION

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C319.1	Use rhetorical strategies to produce persuasive research reports and presentations	1,2,3,4,5,9,10,11,12	1,2,3
C319.2	Demonstrate effective use of teamwork skills to complete Communication tasks.	1,2,3,4,5,9,10,11,12	1,2,3
C319.3	Classify the content material and make effective presentations.	1,2,3,4,5,9,10,11,12	1,2,3
C319.4	Express adequate soft skills to successfully execute the job on hand.	1,2,3,4,5,9,10,11,12	1,2,3
C319.5	Express the body language in a very pleasant manner and react to even tough situations with ease.	1,2,3,4,5,9,10,11,12	1,2,3
C319.6	Exhibit ethical principles in engineering practices.	1,2,3,4,5,9,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C319.1	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C319.2	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C319.3	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C319.4	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C319.5	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C319.6	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1
C319	3	3	2	2	2	-	-	-	2	2	1	1	2	2	1

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SEM –VII

C401 - MG6851 PRINCIPLES OF MANAGEMENT

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C401.1	Discuss the evolution of management thoughts and the challenges of managerial activities in a global business environment.	1,2,3,4,8,10,11,12	1,2,3
C401.2	Summarize the budgetary and non-budgetary control techniques	1,2,3,4,8,10,11,12	1,2,3
C401.3	Discuss the motivational and leadership theories for effective direction of organization	1,2,3,4,8,10,11,12	1,2,3
C401.4	Explain the organizing and recruitment process in the organization	1,2,3,4,8,10,11,12	1,2,3
C401.5	Illustrate the planning process in the organization	1,2,3,4,8,10,11,12	1,2,3
C401.6	Describe the evolution and functions of management	1,2,3,4,8,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C.401.1	3	3	2	1	-	-	-	2	-	2	1	1	2	2	1
C401.2	3	3	2	1	-	-	-	2	-	2	1	1	2	2	1
C401.3	3	3	2	1	-	-	-	2	-	2	1	1	2	2	1
C401.4	3	3	2	1	-	-	-	2	-	2	1	1	2	2	1
C401.5	3	3	2	1	-	-	-	2	-	2	1	1	2	2	1
C401.6	3	3	2	1	-	-	-	2	-	2	1	1	2	2	1
C401	3	3	2	1	-	-	-	2	-	2	1	1	2	2	1

C402 - CS8792 CRYPTOGRAPHY AND NETWORK SECURITY

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C402.1	Apply the various Authentication schemes and security practices to simulate different applications	1,2,3,4,7,10,11,12	1,2,3
C402.2	Explain symmetric key cryptographic algorithms for cryptographic operations	1,2,3,4,7,10,11,12	1,2,3
C402.3	Implement security services in the applications	1,2,3,4,7,10,11,12	1,2,3
C402.4	Apply cryptographic algorithms for given data and applications	1,2,3,4,7,10,11,12	1,2,3
C402.5	Classify block ciphers, stream ciphers, authentication techniques, Firewalls and Email security	1,2,3,4,7,10,11,12	1,2,3
C402.6	Illustrate cryptographic number theory, symmetric and asymmetric cryptographic techniques	1,2,3,4,7,10,11,12	1,2,3

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Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C.402.1	3	3	2	2	-	-	2	-	-	2	1	1	2	2	1
C402.2	3	3	2	2	-	-	2	-	-	2	1	1	2	2	1
C402.3	3	3	2	2	-	-	2	-	-	2	1	1	2	2	1
C402.4	3	3	2	2	-	-	2	-	-	2	1	1	2	2	1
C402.5	3	3	2	2	-	-	2	-	-	2	1	1	2	2	1
C402.6	3	3	2	2	-	-	2	-	-	2	1	1	2	2	1
C402	3	3	2	2	-	-	2	-	-	2	1	1	2	2	1

C403 - CS8791 CLOUD COMPUTING

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C403.1	Describe the various issues in cloud computing and its Architecture.	1,2,3,4,10,11,12	1,2,3
C403.2	Explain the evolution of cloud from the existing technologies.	1,2,3,4,10,11,12	1,2,3
C403.3	Discuss the concepts,key technologies of cloud computing.	1,2,3,4,10,11,12	1,2,3
C403.4	Evaluate and choose the appropriate technologies, algorithms and approaches for implementation and use of cloud.	1,2,3,4,10,11,12	1,2,3
C403.5	Develop the ability to understand and use the architecture of compute and storage cloud, service and delivery models.	1,2,3,4,10,11,12	1,2,3
C403.6	Articulate the main concepts, key technologies, strengths and limitations of cloud computing	1,2,3,4,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C.403.1	3	2	2	1	-	-	-	-	-	2	1	1	2	2	1
C403.2	3	2	2	1	-	-	-	-	-	2	1	1	2	2	1
C403.3	3	2	2	1	-	-	-	-	-	2	1	1	2	2	1
C403.4	3	2	2	1	-	-	-	-	-	2	1	1	2	2	1
C403.5	3	2	2	1	-	-	-	-	-	2	1	1	2	2	1
C403.6	3	2	2	1	-	-	-	-	-	2	1	1	2	2	1
C403	3	2	2	1	-	-	-	-	-	2	1	1	2	2	1

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C404 - OME753 - SYSTEMS ENGINEERING

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C404.1	Analyze the system engineering concepts	1,2,3,4,10,11,12	1,2,3
C404.2	Design the manufacturing system for optimum utilization of source for effective functioning	1,2,3,4,10,11,12	1,2,3
C404.3	Analyze the alternatives in Modeling	1,2,3,4,10,11,12	1,2,3
C404.4	Develop systems engineering principles to make decision for optimization.	1,2,3,4,10,11,12	1,2,3
C404.5	Examine the core principles and processes for designing effective system.	1,2,3,4,10,11,12	1,2,3
C404.6	Analyze the Models of manufacturing system for optimum	1,2,3,4,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C.404.1	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C404.2	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C404.3	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C404.4	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C404.5	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C404.6	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C404	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1

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C405 - IT8075- SOFTWARE PROJECT MANAGEMENT

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C405.1	Discuss Project Management principles while developing software	1,2,3,4,10,11,12	1,2,3
C405.2	Design extensive knowledge about the basic project management concepts, framework and the process models	1,2,3,4,10,11,12	1,2,3
C405.3	Develop software process models and software effort estimation techniques	1,2,3,4,10,11,12	1,2,3
C405.4	Examine the risks involved in various project activities	1,2,3,4,10,11,12	1,2,3
C405.5	Discuss the checkpoints, project reporting structure, project progress and tracking mechanisms using project management principles	1,2,3,4,10,11,12	1,2,3
C405.6	Summarize staff selection process and the issues related to people management	1,2,3,4,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C.405.1	3	2	2	2	-	-	-	-	-	2	1	1	2	2	1
C405.2	3	2	2	2	-	-	-	-	-	2	1	1	2	2	1
C405.3	3	2	2	2	-	-	-	-	-	2	1	1	2	2	1
C405.4	3	2	2	2	-	-	-	-	-	2	1	1	2	2	1
C405.5	3	2	2	2	-	-	-	-	-	2	1	1	2	2	1
C405.6	3	2	2	2	-	-	-	-	-	2	1	1	2	2	1
C405	3	2	2	2	-	-	-	-	-	2	1	1	2	2	1

C406 - CS8079-HUMAN COMPUTER INTERACTION

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C406.1	Design user interface for various applications.	1,2,3,4,10,11,12	1,2,3
C406.2	Develop mobile HCI using mobile elements and tools by considering mobile eco system.	1,2,3,4,10,11,12	1,2,3
C406.3	Analyze the stake holders requirements and choose the appropriate models	1,2,3,4,10,11,12	1,2,3
C406.4	Demonstrate the interactive design basics and HCI software process.	1,2,3,4,10,11,12	1,2,3
C406.5	Interpret the computer devices and HCI models.	1,2,3,4,10,11,12	1,2,3
C406.6	Interpret the computer devices and HCI functions.	1,2,3,4,10,11,12	1,2,3

Mapping of COs, POs with PSOs

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Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C406.1	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C406.2	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C406.3	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C406.4	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C406.5	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C406.6	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1
C406	3	3	2	2	-	-	-	-	-	2	1	1	2	2	1

C407 - CS8711 CLOUD COMPUTING LABORATORY

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C407.1	Demonstrate a generic cloud environment and manipulate large data sets in a parallel environment	1,2,3,4,5,9,10,11,12	1,2,3
C407.2	Experiment various virtualization tools such as Virtual Box, VMware workstation and deploy a web application in a PaaS environment	1,2,3,4,5,9,10,11,12	1,2,3
C407.3	Interpret large data sets in a parallel environment	1,2,3,4,5,9,10,11,12	1,2,3
C407.4	Illustrate the simulation of a cloud environment to implement new schedulers.	1,2,3,4,5,9,10,11,12	1,2,3
C407.5	Design and deploy web application in a PaaS environment.	1,2,3,4,5,9,10,11,12	1,2,3
C407.6	Implement various virtualization tools such as Virtual Box, VMware workstation.	1,2,3,4,5,9,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C407.1	3	3	3	2	2	-	-	-	2	2	1	1	2	2	1
C407.2	3	3	3	2	2	-	-	-	2	2	1	1	2	2	1
C407.3	3	3	3	2	2	-	-	-	2	2	1	1	2	2	1
C407.4	3	3	3	2	2	-	-	-	2	2	1	1	2	2	1
C407.5	3	3	3	2	2	-	-	-	2	2	1	1	2	2	1
C407.6	3	3	3	2	2	-	-	-	2	2	1	1	2	2	1
C407	3	3	3	2	2	-	-	-	2	2	1	1	2	2	1

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C408 - IT8761- SECURITY LABORATORY

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C408.1	Implement Classical Cipher Techniques, Block Ciphers and Public key Cryptographic algorithms	1,2,3,4,5,7,9,10,11,12	1,2,3
C408.2	Use different open-source tools for network security and analysis	1,2,3,4,5,7,9,10,11,12	1,2,3
C408.3	Construct code for authentication algorithms	1,2,3,4,5,7,9,10,11,12	1,2,3
C408.4	Build crypto systems by applying symmetric and public key generation algorithms.	1,2,3,4,5,7,9,10,11,12	1,2,3
C408.5	Develop code for classical Encryption techniques to solve the problems.	1,2,3,4,5,7,9,10,11,12	1,2,3
C408.6	Exhibit ethical principles in engineering practices.	1,2,3,4,5,7,9,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C408.1	3	3	2	2	2	-	2	-	2	2	1	1	2	2	1
C408.2	3	3	2	2	2	-	2	-	2	2	1	1	2	2	1
C408.3	3	3	2	2	2	-	2	-	2	2	1	1	2	2	1
C408.4	3	3	2	2	2	-	2	-	2	2	1	1	2	2	1
C408.5	3	3	2	2	2	-	2	-	2	2	1	1	2	2	1
C408.6	3	3	2	2	2	-	2	-	2	2	1	1	2	2	1
C408	3	3	2	2	2	-	2	-	2	2	1	1	2	2	1

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SEM –VIII

C409 - GE8076- PROFESSIONAL ETHICS IN ENGINEERING

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C409.1	Illustrate the moral issues and models of professional roles.	1,2,3,4,8,10,11,12	1,2,3
C409.2	Demonstrate code of Ethics applied in Engineering.	1,2,3,4,8,10,11,12	1,2,3
C409.3	Discuss the Ethical issues, responsibilities and rights in the society.	1,2,3,4,8,10,11,12	1,2,3
C409.4	Summarize the social responsibility on multinational corporations related to engineering.	1,2,3,4,8,10,11,12	1,2,3
C409.5	Design an awareness on Engineering Ethics and Human Values,	1,2,3,4,8,10,11,12	1,2,3
C409.6	Develop a Moral and Social Values and Loyalty and to appreciate the rights of others.	1,2,3,4,8,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C.409.1	3	3	2	2	-	-	-	3	-	2	1	1	2	2	1
C409.2	3	3	2	2	-	-	-	3	-	2	1	1	2	2	1
C409.3	3	3	2	2	-	-	-	3	-	2	1	1	2	2	1
C409.4	3	3	2	2	-	-	-	3	-	2	1	1	2	2	1
C409.5	3	3	2	2	-	-	-	3	-	2	1	1	2	2	1
C409.6	3	3	2	2	-	-	-	3	-	2	1	1	2	2	1
C409	3	3	2	2	-	-	-	3	-	2	1	1	2	2	1

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C410 - CS8080 INFORMATION RETRIEVAL TECHNIQUES

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C410.1	Explain the basic concept of information retrieval.	1,2,3,4,10,11,12	1,2,3
C410.2	Explain the various models and retrieval evaluation	1,2,3,4,10,11,12	1,2,3
C410.3	Develop the machine learning techniques for text classification and clustering.	1,2,3,4,10,11,12	1,2,3
C410.4	Design the various search engine system operations.	1,2,3,4,10,11,12	1,2,3
C410.5	Examine the different techniques of recommender system.	1,2,3,4,10,11,12	1,2,3
C410.6	Discuss the basics of Information Retrieval.	1,2,3,4,10,11,12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C.410.1	3	3	2	1	-	-	-	-	-	2	1	1	2	2	1
C410.2	3	3	2	1	-	-	-	-	-	2	1	1	2	2	1
C410.3	3	3	2	1	-	-	-	-	-	2	1	1	2	2	1
C410.4	3	3	2	1	-	-	-	-	-	2	1	1	2	2	1
C410.5	3	3	2	1	-	-	-	-	-	2	1	1	2	2	1
C410.6	3	3	2	1	-	-	-	-	-	2	1	1	2	2	1
C410	3	3	2	1	-	-	-	-	-	2	1	1	2	2	1

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C411 - CS8811- PROJECT WORK

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C411.1	Elaborate the completed task and compile the project report	1 - 12	1,2,3
C411.2	Implement and test solutions to trace against the user requirements.	1 - 12	1,2,3
C411.3	Combine all the modules through effective team work after efficient testing.	1 - 12	1,2,3
C411.4	Choose efficient tools for designing project modules	1 - 12	1,2,3
C411.5	Analyze and categorize executable project modules after considering risks	1 - 12	1,2,3
C411.6	Identify the problem by applying acquired knowledge and survey the relevant literature for getting exposed to related solutions.	1 - 12	1,2,3

Mapping of COs, POs with PSOs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C.411.1	3	3	2	2	2	2	2	1	2	2	1	1	2	2	1
C411.2	3	3	2	2	2	2	2	1	2	2	1	1	2	2	1
C411.3	3	3	2	2	2	2	2	1	2	2	1	1	2	2	1
C411.4	3	3	2	2	2	2	2	1	2	2	1	1	2	2	1
C411.5	3	3	2	2	2	2	2	1	2	2	1	1	2	2	1
C411.6	3	3	2	2	2	2	2	1	2	2	1	1	2	2	1
C411	3	3	2	2	2	2	2	1	2	2	1	1	2	2	1

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