

MA8351 DISCRETE MATHEMATICS / III SEM
[REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE/OUTCOME STATEMENTS	RBT Level
C201.1	Summarize the concept of elementary mathematical logical arguments.	K2
C201.2	Apply basic counting techniques to solve combinatorial problems.	K3
C201.3	Explain the applications of Graph theory models and data structures.	K2
C201.4	Explain the concepts and properties of algebraic structures such as groups, rings and fields.	K2
C201.5	Extend the concepts of Boolean algebra in the area of lattices.	K2

CO-PO MATRICES

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	1	-	-	-	-	-	-	-	-	-	1	1
CO2	3	2	1	-	-	-	-	-	-	-	-	-	1	1
CO3	3	2	1	-	-	-	-	-	-	-	-	-	1	1
CO4	3	2	-	-	-	-	-	-	-	-	-	-	1	1
CO5	3	1	1	-	-	-	-	-	-	-	-	-	1	1
AVG	3	1.8	1										1	1

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CS8351/DIGITAL PRINCIPLES AND SYSTEM DESIGN/ III SEM

[REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C202.1	Construct digital circuits using simplified Boolean functions.	K3
C202.2	Analyze and design combinational circuits and to write HDL code for combinational circuits	K4
C202.3	Analyze and design synchronous sequential circuits.	K4
C202.4	Analyze and design asynchronous sequential circuits.	K4
C202.5	Illustrate Programmable Logic Devices.	K2

CO-PO MATRICES

	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO1	PSO2
C202.1	3	2	1	—	—	—	—	—	—	—	—	—	—	—
C202.2	3	2	2	1	1	—	—	—	1	1	—	1	—	—
C202.3	3	2	2	1	1	—	—	—	1	1	—	1	—	—
C202.4	3	2	2	1	1	—	—	—	1	1	—	1	—	—
C202.5	3	2	2	1	1	—	—	—	—	—	—	—	—	—
AVG	3	2	1.8	1	1	—	—	—	1	1	—	1	—	—

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CS8391 DATA STRUCTURES / III SEM

[REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C203.1	Explain abstract data types for linear data structures.	K2
C203.2	Apply the algorithms of stacks and queues in linear data structures to analyse the given problems.	K3
C203.3	Apply various non-linear data structure algorithm using tree in given problem.	K3
C203.4	Construct the graph representation for the given problem in non-linear data structures using graph	K3
C203.5	Compare the various searching, sorting and hashing techniques for the given problems.	K2

CO-PO MATRICES

	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO1	PSO2
C203.1	3	3	2	-	1	-	-	-	-	-	-	1	1	3
C203.2	3	3	2	-	1	-	-	-	-	-	-	1	1	3
C203.3	3	3	2	-	1	-	-	-	-	-	-	1	1	3
C203.4	3	3	2	-	1	-	-	-	-	-	-	1	1	2
C203.5	3	2	2	-	1	-	-	-	-	-	-	1	1	2
AVG	3	2.8	2	-	1	-	-	-	-	-	-	1	1	2.6

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CS8392 - OBJECT ORIENTED PROGRAMMING /III SEM [REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C204.1	Develop simple java programs using basic OOP concepts	K3
C204.2	Develop java programs using inheritance and interface techniques	K3
C204.3	Develop java programs to collect user inputs and validate it through Exception handling and I/O concepts	K3
C204.4	Develop small java programs using multithreading concepts	K3
C204.5	Construct a complete interactive GUI application using Swings and event driven model	K3

CO-PO MATRICES

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

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EC8395/COMMUNICATION ENGINEERING II YEAR / III SEM


[REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C205.1	Explain different analog modulation techniques with applications.	K2
C205.2	Explain quantization and multiplexing techniques.	K2
C205.3	Compare types of phase shift keying and equalizers	K2
C205.4	Explain different digital modulation techniques and transmission.	K2
C205.5	Explain spread spectrum and multiple access techniques.	K2

CO-PO MATRICES

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


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CS8381 DATA STRUCTURES LABORATORY / III SEM

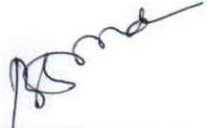
[REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C206.1	Outline functions to implement linear and non-linear data structure operations.	K2
C206.2	Identify appropriate linear / non-linear data structure operations for solving a given problem	K2
C206.3	Apply algorithms to implement various searching, sorting, and hash techniques for a given problem	K3

CO-PO MATRICES

	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO1	PSO2
C206.1	3	3	3	1	2	-	-	1	2	1	-	1	2	3
C206.2	3	3	3	1	2	-	-	1	2	1	-	1	2	3
C206.3	3	3	3	1	2	-	-	1	2	1	-	1	2	3
AVG	3	3	3	1	2	-	-	1	2	1	-	1	2	3


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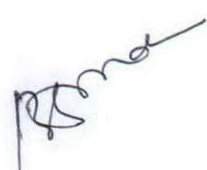
CS8383 OBJECT ORIENTED PROGRAMMING LABORATORY
III YEAR / VI SEM [REGULATION 2017]

At the end of the course, the student should be able to

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C207.1	Develop and implement Java programs for simple applications that make use of classes and Array List	K3
C207.2	Apply the concepts of packages, interfaces, exception and file handling	K3
C207.3	Develop applications using generic programming and event handling	K3

CO-PO MATRICES

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2	PSO 1	PSO 2
C207.1	3	3	3	1	3	-	-	1	2	1	-	2	3	3
C207.2	3	3	3	1	3	-	-	1	2	1	-	2	3	3
C207.3	3	3	3	1	3	-	-	1	2	1	-	2	3	3
AVG	3	3	3	1	3	-	-	1	2	1	-	2	3	3


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CS8382-DIGITAL SYSTEM LABORATORY
III YEAR / VI SEM [REGULATION 2017]

At the end of the course, the student should be able to

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C208.1	Construct digital circuits using simplified Boolean functions.	K3
C208.2	Analyze and design combinational circuits and to write HDL code for combinational circuits	K4
C208.3	Analyze and design sequential circuits and to write HDL code for sequential circuits.	K4

CO-PO MATRICES

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2	PSO 1	PSO 2
C208.1	3	2	2	1	1	-	-	1	1	1	-	-	-	-
C208.2	3	2	2	1	1	-	-	1	1	1	-	-	-	-
C208.3	3	2	2	1	1	-	-	1	1	1	-	-	-	-
AVG	3	2	2	1	1	-	-	1	1	1	-	-	-	-


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LABORATORY
III YEAR / VI SEM [REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS
C209.1	Equip students with the English language skills required for the successful undertaking of academic studies with primary emphasis on academic speaking and listening skills
C209.2	Provide guidance and practice in basic general and classroom conversation and to engage in specific academic speaking activities.
C209.3	Improve general and academic listening skills, Make effective presentations and Listen to follow and respond to explanations, directions and instructions

Contribution **1: Reasonable** **2: Significant** **3: High**
Strong

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2	PSO 1	PSO 2
C209.1	2	2	—	1	2	—	1	2	—	3	—	3	1	2
C209.2	2	1	—	1	—	2	2	1	3	2	—	—	1	2
C209.3	1	—	—	—	2	2	2	1	—	2	—	1	1	2

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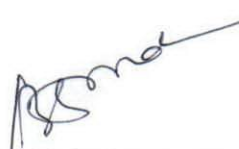
GE8076 PROFESSIONAL ETHICS IN ENGINEERING
IV YEAR / VIII SEM [REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
CS424.1	Define and describe the content of Human values	K1
CS424.2	Identify the ethical dilemmas and variety of moral issues in engineering ethics.	K3
CS424.3	Apply the content of the code of ethics/conduct of at least one professional society	K3
CS424.4	Classify the responsibilities of an engineer for safety and risk benefit analysis.	K2
CS424.5	Acquire knowledge on various global issues	K2

CO-PO MATRICES

Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CS424.1								3				2		
CS424.2								3				2		
CS424.3								3				2		
CS424.4								3				2		
CS424.5								3				2		
AVG								3				2		


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CS8080 INFORMATION RETRIEVAL TECHNIQUES


IV YEAR /VIII SEM [REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
410.1	Make use of an open source search engine framework and explore its capabilities.	K3
410.2	Apply appropriate method of classification or clustering.	K3
410.3	Construct and implement innovative features in a search engine.	K3
410.4	Build and implement a recommender system.	K3
410.5	Find appropriate classification methods and clustering methods.	K1

CO-PO MATRICES

Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
410.1	3	1	1									1	1	1
410.2	3	1	1									1	1	1
410.3	3	1	1									1	1	1
410.4	3	1	1									1	1	1
410.5	3	1	1									1	1	1
AVG	3	1	1									1	1	1



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CS8811 Project Work

IV YEAR / VIII SEM [REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C411.1	Identify technically and economically feasible problems of social relevance	K3
C411.2	Plan and build the project team with assigned responsibilities	K3
C411.3	Identify and survey the relevant literature for getting exposed to related solutions	K3
C411.4	Analyze, design and develop adaptable and reusable solutions of minimal complexity by using modern tools	K4
C411.5	Examine and test solutions to trace against the user requirements	K4
C411.6	Analyze and support the solutions for better manageability of the solution and provide scope for improvability.	K4

CO-PO MATRICES


Course Outcome	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
C411.1	3	2	2	1		2	2	2	2	2	2	1	1	2
C411.2	3	3	3	3	2	2	2	2	2	2	2	1	1	2
C411.3	3	3	3	2	2	2	2	2	2	2	2	1	1	2
C411.4	3	3	3	3	2	2	2	2	2	2	2	1	1	2
C411.5	3	3	3	2	2	2	2	2	2	2	2	1	1	2
C411.6	3	3	3	3	2	2	2	2	2	2	2	1	1	2
AVG	3	3	3	3	2	2	2	2	2	2	2	1	1	2

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C301.1	Explain the basic concepts of Groups,Rings,Fields which will then be used to solve relates problems	K2
C301.2	Demonstrate the concepts of Rings,Fields and Polynomials.	K2
C301.3	Explain the basic concepts in number theory	K2
C301.4	Apply the key questions in Theory of Numbers	K3
C301.5	Apply an integrated approach to number theory and abstract algebra	K3

CO-PO MATRICES

Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C301.1	3	2	1											
C301.2	2	3	1											
C301.3	3	2	2											
C301.4	2	2	1											
C301.5	3	2	1											
AVG	2.6	2.2	1.2											


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CS8591 COMPUTER NETWORKS III YEAR / V SEM

[REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C302.1	Explain the basic layers and its functions in computer networks.	K2
C302.2	Demonstrate the basics of how data flows from one node to another.	K2
C302.3	Explain design protocols for various functions in the network layer	K2
C302.4	Explain the working of various transport layer protocols	K2
C302.5	Explain the working of various application layer protocols.	K2

CO-PO MATRICES

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


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EC8691-MICROPROCESSORS AND MICROCONTROLLERS


- III YEAR / V SEM [REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C303.1	Explain the interpret and execute programs based on 8086 microprocessor	K2
C303.2	Construct Design Memory Interfacing Circuits	K3
C303.3	Apply Interface I/O Circuits	K3
C303.4	Demonstrate the programs based on 8051 microcontroller	K2
C303.5	Identify 8051 microcontroller based systems	K3

CO-PO MATRICES

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


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At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C304.1	Explain Finite Automata and solve real world problems that can be represented in regular languages.	K2
C304.2	Illustrate Context Free Grammars, Derivation trees and derive its Normal forms.	K2
C304.3	Infer Pushdown Automata and identify whether the given language is context free or not using pumping lemma.	K2
C304.4	Extend Turing Machine using different techniques for any computable problem.	K2
C304.5	Identify the decidability and un-decidability of various problems.	K2

CO-PO MATRICES

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


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CS8592 OBJECT ORIENTED ANALYSIS AND DESIGN- III YEAR / V SEM

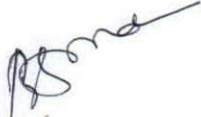
[REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C305.1	Explain implement projects using OO concepts	K2
C305.2	Illustrate UML analysis and design diagrams	K2
C305.3	Apply appropriate design patterns	K3
C305.4	Build code from design	K3
C305.5	Compare and contrast various testing techniques	K2

CO-PO MATRICES

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


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EC8681 MICROPROCESSORS AND MICROCONTROLLERS LABORATORY


III YEAR / V SEM [REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
306.1	Apply programs on 8086 microprocessor	K3
306.2	Identify different I/O devices with microprocessor	K3
306.3	Construct programs on 8051 microcontroller	K3

CO-PO MATRICES

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
306.1	3	2	3		2			1	1	1		1	1	1
306.2	3	2	3					1	1	1		1	1	1
306.3	3	2	3		2			1	1	1		1	1	1
AVG	3	2	3		2			1	1	1		1	1	1


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CS8582 OOAD LAB- III YEAR / V SEM

[REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C307.1	Illustrate and implement projects using OO concepts.	K2
C307.2	Construct the UML analysis and design diagrams, Apply appropriate design patterns	K2
C307.3	Select code from design and Compare and contrast various testing techniques	K3

CO-PO MATRICES

Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C307.1	3	2	2	1	3				1	1		2	2	2
C307.2	3	2	2	1	3				1	1		2	2	2
C307.3	3	2	2	1	3				1	1		2	2	2
AVG	3	2	2	1	3				1	1		2	2	2

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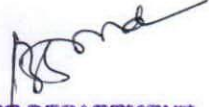
CS8581 NETWORK LABORATORY- III YEAR / V SEM [REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C308.1	Implement and compare the performance various protocols using TCP and UDP	K3
C308.2	Use simulation tools to analyze the performance of various network protocols	K3
C308.3	Analyze various routing algorithms and implement error correction codes	K3

CO-PO MATRICES

Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C308.1	3	3	2	1	1				1	1		1	1	1
C308.2	3	3	2	1	1				1	1		1	1	1
C308.3	3	3	2	1	1				1	1		1	1	1
AVG	3	3	2	1	1				1	1		1	1	1


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PROBABILITY AND QUEUING THEORY- II YEAR / IV SEM
[REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C210.1	Explain the fundamental knowledge of the concepts of probability and have knowledge Of standard distributions which can describe real life phenomenon.	K2
C210.2	Describe the basic concepts of one and two dimensional random variables and apply in Engineering applications.	K1
C210.3	Apply the concept of random processes in engineering disciplines.	K3
C210.4	Acquire skills in analyzing queueing models	K2
C210.5	Illustrate and characterize phenomenon which evolve with respect to time in a Probabilistic manner	K3

CO-PO MATRICES

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C210.1	3	3	2									1		
C210.2	3	3	3									1	1	
C210.3	3	2	2									1		
C210.4	3	2	2									1	1	
C210.5	3	2	1									1		
AVG	3	2,4	2									1	1	


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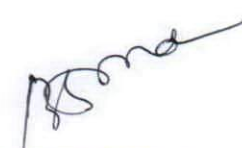
**CS8491 COMPUTER ARCHITECTURE -II YEAR / IV SEM
[REGULATION 2017]**

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C211.1	Describe the basic structures of a computer system, operation and instructions.	K2
C211.2	Explain the various arithmetic and Logic unit for computers.	K2
C211.3	Analyze pipelined control units and the different types of hazards in the Instructions.	K3
C211.4	Interpret the concepts of parallel processing architecture	K2
C211.5	Summarize the fundamentals of memory and I/O system.	K2

CO-PO MATRICES

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


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**CS8492 - DATABASE MANAGEMENT SYSTEMS II YEAR / IV SEM
[REGULATION 2017]**

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C212.1	Make use the relational database model for designing a relational database using various SQL queries	K3
C212.2	Construct ER model and normalization techniques to perform database design effectively	K3
C212.3	Apply concurrency control and recovery mechanisms for practical problems in database design	K3
C212.4	Compare and contrast various indexing and query optimization strategies in different database systems	K3
C212.5	Compare advanced databases differ from traditional databases	K2

CO-PO MATRICES

Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C212.1	3	3	2		2							1	2	1
C212.2	3	2	3	1	1							1	2	1
C212.3	3	2												
C212.4	3	2	2											
C212.5	3	2	1		1							1	2	2
AVG	3	2.2	2	1	1.33							1	2	1.33


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CS8451 DESIGN AND ANALYSIS OF ALGORITHMS -II YEAR / IV SEM

[REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C213-1	Interpret the fundamental needs of algorithm for problem solving and complexity analysis	K2
C213-2	Demonstrate Different algorithm design techniques like brute force methods and Divide & Conquer methods	K2
C213-3	Develop algorithm for various solving techniques Dynamic programming and Greedy methods	K3
C213-4	Identify the solution for various problem solving methods and to select the optimal solutions using Iterating methods	K3
C213-5	Construct Backtracking & Branch and Bound techniques ,analyze ,formulate and compare the efficiency	K3

CO-PO MATRICES

Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C213-1	3	3	2	1					1			1	1	2
C213-2	3	3	1	1					1			1	1	2
C213-3	3	2	2	1					1			1	1	2
C213-4	3	2	3	1					1			1	1	2
C213-5	3	2	2	1					1			1	1	2
AVG	3	2.4	2	1					1			1	1	2

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CS8493 OPEARTING SYSTEM - II YEAR / IV SEM


[REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C214.1	Analyse various scheduling algorithms.	K4
C214.2	Illustrate deadlock, prevention and avoidance algorithms.	K2
C214.3	Compare and contrast various memory management schemes.	K2
C214.4	Explain the functionality of file systems.	K2
C214.5	Solve administrative tasks on Linux Servers and Compare iOS and Android Operating Systems.	K2

CO-PO MATRICES

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


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CS 8494 SOFTWARE ENGINEERING - II YEAR / IV SEM


[REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C215.1	Summarize different process models and identify key activities in software project management.	K2
C215.2	Illustrate requirement engineering and analysis modeling.	K2
C215.3	Apply systematic procedure for software design and deployment.	K3
C215.4	Compare and contrast the various testing and maintenance.	K2
C215.5	Organize project schedule, estimate project cost and effort required	K3

CO-PO MATRICES

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


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CS8481 - DATABASE MANAGEMENT SYSTEMS LABORATORY


II YEAR / IV SEM [REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C216.1	Construct basic and complex SQL queries using various SQL commands to create and manipulate a database.	K3
C216.2	Demonstrate the use of Tables, Views, Functions, Procedures, Triggers and Cursors using PL/SQL	K2
C216.3	Illustrate the database design by using ER modeling and normalization concepts	K2

CO-PO MATRICES

Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C216.1	3	3	3	2	3				1	1		3	2	2
C216.2	3	2	3	2	3				1	1		3	2	2
C216.3	3	3	3	2	3				1	1		3	2	2
AVG	3	2.67	3	2	3				1	1		3	2	2


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CS8461 OPERATING SYSTEM LABORATORY - II YEAR / IV SEM

[REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C217.1	Learn Unix Commands and Shell Programming.	K3
C217.2	Select appropriate CPU Scheduling algorithm and IPC for solving a given problem	K3
C217.3	Apply algorithms to implement various Page Replacement Algorithm for a given pages and implement deadlock detection and avoidance algorithms.	K3

CO-PO MATRICES

Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C217.1	3	3	1		2				1	1		1	1	2
C217.2	3	3	1		2				1	1		1	1	2
C217.3	3	3	1		2				1	1		1	1	2
AVG	3	3	1		2				1	1		1	1	2

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LABORATORY - II YEAR / IV SEM


[REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C218.1	Develop reading competence. Write different types of essays	K3
C218.2	Outline winning job applications, Read and evaluate texts critically	K2
C218.3	Illustrate critical thinking in various professional contexts	K2

CO-PO MATRICES

Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C218.1	3	2			3	2	2	3	1	3		3	1	2
C218.2	3	2			2			3		3		2	1	2
C218.3	2	1		3		1				1			1	1
AVG	2.6	1.6		3	1.6	1.5	2	3	1	2.3		2.5	1	1.6


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Department of Computer Science and Engineering

MG8591 PRINCIPLES OF MANAGEMENT


IV YEAR /VII SEM [REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C401.1	Explain the basic of management and its types, skills, management roles, types of business organization and current trends in business.	K2
C401.2	Explain the nature and purpose of planning, types, objectives of planning and decision process.	K3
C401.3	Compare the different organization structures, authorities and responsibilities, human resource management and training and development.	K2
C401.4	Estimate the individual and group behaviour, motivation, job satisfaction types and theories of leadership, communication and IT.	K5
C401.5	Apply the knowledge using the various system and process of controlling, budgetary and non-budgetary control techniques, use of computer and IT in management control, reporting.	K3

CO-PO MATRICES

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C401.1						1	1		3			1	1	
C401.2											2	1	1	
C401.3												1	1	
C401.4											3	1	1	
C401.5					1				3	1	3	1	1	
AVG					1	1	1		3	1	2.6	1	1	


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CS8792 - CRYPTOGRAPHY AND NETWORK SECURITY


IV YEAR /VII SEM [REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
402.1	Illustrate the principles of number theory and compare various cryptographic techniques.	K2
402.2	Demonstrate how Block Ciphers such as DES, AES, Triple DES, RC5 and public key crypto-systems are implemented.	K3
402.3	Apply hash function and digital signatures to implement authentication protocols	K3
402.4	Illustrate the role of firewall in implementing trusted systems	K2
402.5	Analyze how applications can be secured	K3

CO-PO MATRICES

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
402.1	3	2	2					1				2	2	2
402.2	3	2	2					1				2	2	2
402.3	3	2	2					1				2	2	2
402.4	3	2	2					1				2	2	2
402.5	3	2	2					1				2	2	2
AVG	3	2	2					1				2	2	2


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CS8791 - CLOUD COMPUTING
IV YEAR /VII SEM [REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C403.1	Demonstrate the main concepts, key technologies, strengths and limitations of cloud computing.	K2
C403.2	Explain the key and enabling technologies that help in the development of cloud.	K2
C403.3	Make use of NIST cloud computing architecture to solve architecture design challenges	K3
C403.4	Explain the core issues of cloud computing such as resource management and security.	K2
C403.5	Develop and use current cloud technologies. Illustrate and choose the appropriate technologies, algorithms and approaches for implementation and use of cloud	K3

CO-PO MATRICES

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C403.1	3	1	1		1							1	2	2
C403.2	3	1	1		1							1	2	2
C403.3	3	1	1		1							1	2	2
C403.4	3	1	1		1							1	2	2
C403.5	3	1	1		1							1	2	2
AVG	3	1	1		1							1	2	2


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CS8711 – CLOUD COMPUTING LABORATORY


IV YEAR /VII SEM [REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C404.1	List various virtualization tools such as Virtual box, VMware workstation	K4
C404.2	Construct and deploy a web application in a Pass Environment	K3
C404.3	How to simulate a cloud environment to implement new schedulers which can be used as a private cloud	K1

CO-PO MATRICES

Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C404.1	3	2	2	1	2			1	1	1		1	1	1
C404.2	3	2	2	1	2			1	1	1		1	1	1
C404.3	3	2	2	1	2			1	1	1		1	1	1
AVG	3	2	2	1	2			1	1	1		1	1	1


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OEC 754 - MEDICAL ELECTRONICS

IV YEAR /VII SEM [REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C406.1	Explain the human body electro-physiological parameters and recording of bio-potentials	K2
C406.2	Demonstrate the non-electrical physiological parameters and their measurement – body temperature, blood pressure, pulse, blood cell count, blood flow meter etc.	K2
C406.3	Interpret the various assist devices used in the hospitals viz. pacemakers, defibrillators, dialyzers and ventilators	K2
C406.4	Illustrate physical medicine methods eg. Ultrasonic, shortwave, microwave surgical diathermies and bio-telemetry principles and methods	K2
C406.5	Outline recent trends in medical instrumentation.	K2

CO-PO MATRICES

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


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CS8083- MULTICORE ARCHITECTURE AND PROGRAMMING


IV YEAR /VII SEM [REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C417.1	Classify the interconnection networks	K4
C417.2	Analyze the changes from serial program to parallel program	K4
C417.3	Develop program using Open MP and MPI	K3
C417.4	Analyze the Distributed Memory Programming with MPI	K4
C417.5	Classify the n Body solver and Execution	K4

CO-PO MATRICES

Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C417.1	3	1	1											
C417.2	3	1	2		2									
C417.3	3	2	1		2									1
C417.4	3	2	2		2									1
C417.5	3	2	1		1									1
AVG	3	1.6	1.4		1.7									1



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CS8601 Mobile Computing III YEAR /VI SEM


[REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C313.1	Demonstrate the fundamental design paradigms and technologies to Mobile Computing Systems	K2
C313.2	Can explain the structure and components of Mobile IP and Mobility Management	K2
C313.3	Analyze the measures to optimize the capacity of various mobile telecommunications (GSM,GPRS and UMTS)	K4
C313.4	Make use of simulator tools to design ADHOC networks	K3
C313.5	Develop a mobile application using android/blackberry/ios/Windows SDK	K3

CO-PO MATRICES

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


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CS8602 COMPILER DESIGN - III YEAR /VI SEM


[REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C314.1	Construct and implement a prototype compiler.	K3
C314.2	Apply the various optimization techniques.	K3
C314.3	Make Use the different compiler construction tools.	K3
C314.4	Apply lexical rules and grammars for a programming language.	K3
C314.5	Apply semantic rules into a parser that performs attribution while parsing.	K3

CO-PO MATRICES

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


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CS8651 INTERNET PROGRAMMING III YEAR /VI SEM


[REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C311.1	Construct a basic website using HTML and Cascading Style Sheets.	K3
C311.2	Build dynamic web page with validation using Java Script objects and by applying different event handling mechanisms.	K3
C311.3	Develop server-side programs using Servlets and JSP.	K3
C311.4	Develop simple web pages in PHP and to represent data in XML format.	K3
C311.5	Make Use AJAX and web services to develop interactive web applications	K3

CO-PO MATRICES

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



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CS8691–ARTIFICIAL INTELLIGENCE IIIYEAR /VI SEM [REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C312.1	Explain the various characteristics of intelligent agents.	K2
C312.2	Compare different search strategies in AI.	K2
C312.3	Apply knowledge representation in solving AI problems.	K3
C312.4	Classify the different ways of designing software agents.	K4
C312.5	Outline the various applications of AI.	K2

Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C312.1	2	2	2	1								1	1	1
C312.2	2	2	2	2								1	1	1
C312.3	3	3	1	2								1	1	1
C312.4	2	3	3	1								1	1	1
C312.5	2	2	1	1								1	1	1
AVG	2.2	2.4	1.8	1.4								1	1	1


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CS8603 DISTRIBUTED SYSTEM - III YEAR /VI SEM


[REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C315.1	Explain the distributed systems architecture.	K2
C315.2	Outline the inter process communication in distributed systems.	K2
C315.3	Illustrate the file accessing model and various services in distributed system.	K2
C315.4	Demonstrate concurrency control and properties of transaction in Distributed systems.	K2
C315.5	Demonstrate resource and process management in distributed system	K2

CO-PO MATRICES

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


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CS8661 INTERNET PROGRAMMING LABORATORY-III YEAR /VI SEM

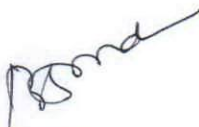
[REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C316.1	Construct Web pages using HTML/XML and style sheets.	K3
C316.2	Build dynamic web pages with validation using Java Script and applying different AJAX techniques to update the content in the web pages.	K3
C316.3	Develop dynamic web pages using Servlet, JSP, PHP and web services.	K3

CO-PO MATRICES

Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C316.1	3	3	2	1	3				1	1		1	3	3
C316.2	3	3	2	1	3				1	1		1	3	3
C316.3	3	3	2	1	3				1	1		1	3	3
AVG	3	3	2	1	3				1	1		1	3	3


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CS8662/ MOBILE APPLICATION DEVELOPMENT LABORATORY III YEAR /VI SEM

[REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT LEVEL
C317.1	Construct the application that uses GUI components, layout managers, event listeners that uses basic graphical primitives and database.	K3
C317.2	Develop the application that implements multi-threading and makes use of RSS Feed	K3
C317.3	Build the application that manipulates SD card and uses GPS location information and handles notification & discover own mobile app for simple needs	K3

CO-PO MATRICES

Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C317.1	3	3	2	1	3				1	1		2	1	3
C317.2	3	3	2	1	3				1	1		2	1	3
C317.3	3	3	2	1	3				1	1		2	1	3
AVG	3	3	2	1	3				1	1		2	1	3

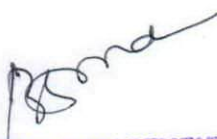

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At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C320.1	Build a Data warehouse system and perform business analysis with OLAP tools	K3
C320.2	Apply suitable pre-processing and visualization techniques for data analysis	K3
C320.3	Explain frequent pattern and association rule mining techniques for data analysis	K3
C320.4	Identify appropriate classification and clustering techniques for data analysis	K3
C320.5	Examine appropriate techniques for data analysis using tools	K4

CO-PO MATRICES

Course outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C320.1	3	3	2									1	1	1
C320.2	3	3	2									1	1	1
C320.3	3	3	2									1	1	1
C320.4	3	3	2									1	1	1
C320.5	3	3	2									1	1	1
AVG	3	3	2									1	1	1



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At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C318.1	Choose problems with technical important and societal contribution	K3
C318.2	Identify and survey the relevant literature for getting exposed to related solutions	K3
C318.3	Analyze design and develop adaptable and reusable solutions	K4
C318.4	Examine and test solutions to trace against user requirements and provide scope for better manageability and improvability	K4

CO-PO MATRICES

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2	PSO 1	PSO 2
C318.1	3	3	3	2	3	2		2	3	3	1	1	2	2
C318.2	3	3	3	2	3	2		2	3	3	1	1	2	2
C318.3	3	3	3	2	3	2		2	3	3	1	1	2	2
C318.4	3	3	3	2	3	2		2	3	3	1	1	2	2
AVG	3	3	3	2	3	2		2	3	3	1	1	2	2


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OMD551 – BASICS OF BIO MEDICAL INSTRUMENTATION


III YEAR / VI SEM [REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C310.1	Explain the different bio potential and its propagation	K2
C310.2	Classify the different electrode placement for various physiological recording	K2
C310.3	Apply the bio amplifier for various physiological recording	K3
C310.4	Compare the various technique non electrical physiological measurements	K2
C310.5	Explain the different bio chemical measurements	K2

CO-PO MATRICES

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2	PSO 1	PSO 2
C310.1	2		1		2									
C310.2	3		2	2			2							
C310.3	1	3	3		1	1								
C310.4	1		1		2	2								
C310.5	1		1		2	2								
G	1	3	1	2	2	2	2							


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HS8581 – PROFESSIONAL COMMUNICATION


III YEAR / VI SEM [REGULATION 2017]

At the end of the course, the student should be able to:

SNO	COURSE OUTCOME STATEMENTS	RBT Level
C309.1	Demonstrate understanding of facts and ideas by organizing, comparing, translating and stating man ideas.	K2
C309.2	Explain the ideas by interpreting and by giving descriptions.	K2
C309.3	Interpret the ideas by understand group dynamics brainstorming the topic questioning and clarifying	K2
C309.4	Show that talent of what you have learned throughout the program to get placed in the interviews.	K1
C309.5	Relate to the interpersonal and interview skills students should follow time management ,stress management and adopting to the needs of the society.	K1

CO-PO MATRICES

Course Outcome	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
C309.1								2				1		
C309.2									2	3		1		
C309.3									2	3		1		
C309.4								2	2	3		1		
C309.5								2				1		
AVG								2	2	3		1		


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Program Outcomes with Graduate Attribute

S.No	Graduate Attribute	Program Outcomes
1.	Engineering knowledge	Apply the knowledge of Mathematics and Science with fundamentals of Mechatronics Engineering to solve complex engineering problems.
2.	Problem analysis	Identify, formulate, review research literature, and analyze complex engineering problems related to Mechatronics Engineering and reaching substantiated conclusions using first principles of Mathematics, natural sciences, and engineering sciences.
3.	Design/Development of solutions	Design solutions for complex engineering problems related to Mechatronics Engineering and develop 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 Mechatronics Engineering related 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 Mechatronics Engineering professional practice.
7.	Environment and sustainability	Understand the impact of the professional Mechatronics 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.

S.No	Graduate Attribute	Program Outcomes
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 Outcomes(PSOs)

S.No	Programme Specific Outcomes
PSO1	To analyze, design and develop solutions in the areas of Business Process management to build the quality products for industry and societal needs.
PSO2	To innovate ideas and solutions for real time problems in the field of software engineering and mobile applications by adapting the emerging technologies and tools.