



DHAANISH AHMED INSTITUTE OF TECHNOLOGY



DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE: HS8151
COURSE NAME: COMMUNICATIVE ENGLISH
SEMESTER: I

CO	At the end of the course, the student should be able to
CO1	Read articles of a general kind in magazines and newspapers
CO2	Participate effectively in informal conversations; introduce themselves and their friends and express opinions in English
CO3	Comprehend conversations and short talks delivered in English
CO4	Write short essays of a general kind and personal letters and emails in English.
CO5	Communicate with one or many listeners using appropriate communicative strategies

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	-	-	-	2	3	-	2	-	-	-
CO2	-	-	-	-	-	-	-	-	2	3	-	2	-	-	-
CO3	-	-	-	-	-	-	-	-	2	3	-	2	-	-	-
CO4	-	-	-	-	-	-	-	-	2	3	-	2	-	-	-
CO5	-	-	-	-	-	-	-	-	2	3	-	2	-	-	-
AVG	-	-	-	-	-	-	-	-	2.00	3.00	-	2.00	-	-	-



DHAANISH AHMED
INSTITUTE OF TECHNOLOGY



DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE: MA8151
COURSE NAME: ENGINEERING MATHEMATICS I
SEMESTER: I

CO	At the end of the course, the student should be able to
CO1	Use both the limit definition and rules of differentiation to differentiate functions.
CO2	Apply differentiation to solve maxima and minima problems.
CO3	Evaluate integrals both by using Riemann sums and by using the Fundamental Theorem of Calculus.
CO4	Apply integration to compute multiple integrals, area, volume, integrals in polar coordinates, in addition to change of order and change of variables..
CO5	Evaluate integrals using techniques of integration, such as substitution, partial fractions and integration by parts

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	1	1	-	-	-	-	1	-	-	-	-	2	1	-
CO2	3	2	1	-	-	-	-	1	-	-	-	-	1	1	-
CO3	2	1	1	-	-	-	-	1	-	-	-	-	2	1	-
CO4	3	2	1	-	-	-	-	1	-	-	-	-	2	1	-
CO5	3	2	1	-	-	-	-	1	-	-	-	-	2	1	-
AVG	2.60	1.60	1.00	-	-	-	-	1.00	-	-	-	-	1.60	1.00	-



DHAANISH AHMED
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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE:PH8151
COURSE NAME: ENGINEERING PHYSICS
SEMESTER: I

CO	At the end of the course, the student should be able to
CO1	The students will gain knowledge on the basics of properties of matter and its applications,
CO2	The students will acquire knowledge on the concepts of waves and optical devices and their applications in fibre optics,
CO3	The students will have adequate knowledge on the concepts of thermal properties of materials and their applications in expansion joints and heat exchangers,
CO4	The students will get knowledge on advanced physics concepts of quantum theory and its applications in tunneling microscopes,
CO5	The students will understand the basics of crystals, their structures and different crystal growth techniques.

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	1	-	-	-	1	-	-	-	-	-	1	-	-	-
CO2	2	1	1	-	-	1	1	-	-	-	-	1	-	-	-
CO3	2	1	-	-	1	1	1	-	-	-	-	1	-	-	-
CO4	2	1	-	-	-	-	-	-	-	-	-	1	-	-	-
CO5	2	1	1	-	-	-	-	-	-	-	-	1	-	-	-
AVG	2.00	1.00	1.00	-	1.00	1.00	1.00	-	-	-	-	1.00	-	-	-



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE:PH8151
COURSE NAME: ENGINEERING PHYSICS
SEMESTER: I

CO	At the end of the course, the student should be able to
CO1	The knowledge gained on engineering materials, fuels, energy sources and water treatment techniques will facilitate better understanding of engineering processes and applications for further learning.
CO2	To make the student acquire sound knowledge of second law of thermodynamics and second law based derivations of importance in engineering applications in a
CO3	To acquaint the student with concepts of important photophysical and photochemical processes and spectroscopy.
CO4	To develop an understanding of the basic concepts of phase rule and its applications to single and two component system and appreciate the purpose and significance of alloys.
CO5	To acquaint the students with the basics of nano materials, their properties and applications

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	1	-	-	-	1	-	-	-	-	-	1	-	-	-
CO2	2	1	1	-	-	1	1	-	-	-	-	1	-	-	-
CO3	2	1	-	-	1	1	1	-	-	-	-	1	-	-	-
CO4	2	1	-	-	-	-	-	-	-	-	-	1	-	-	-
CO5	2	1	1	-	-	-	-	-	-	-	-	1	-	-	-
AVG	2.00	1.00	1.00	-	1.00	1.00	1.00	-	-	-	-	1.00	-	-	-



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE:GE8151
COURSE NAME:PROBLEM SOLVING AND PYTHON PROGRAMMING
SEMESTER: I

CO	At the end of the course, the student should be able to
CO1	Develop algorithmic solutions to simple computational problems
CO2	Read, write, execute by hand simple Python programs..
CO3	Decompose a Python program into functions.
CO4	Represent compound data using Python lists, tuples, dictionaries.
CO5	Read and write data from/to files in Python Programs

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	1	1	-	-	1	1	3	-	3	3	2	3
CO2	3	2	2	1	1	-	-	1	1	2	-	3	3	2	3
CO3	3	2	2	1	1	-	-	1	1	2	-	3	3	2	3
CO4	3	2	2	1	1	-	-	1	1	2	-	3	3	2	3
CO5	3	2	2	1	1	-	-	1	1	2	-	3	3	2	3
AVG	3.00	2.00	2.00	1.00	1.00	-	-	1.00	1.00	2.20	-	3.00	3.00	2.00	3.00



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation



COURSE CODE:GE8152
COURSE NAME:ENGINEERING GRAPHICS
SEMESTER: I

CO	At the end of the course, the student should be able to
CO1	Summarize with the fundamentals and standards of Engineering graphics
CO2	Perform freehand sketching of basic geometrical constructions and multiple views of objects.
CO3	Project orthographic projections of lines and plane surfaces.
CO4	Draw projections and solids and development of surfaces.
CO5	Visualize and to project isometric and perspective sections of simple solids.

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	-	-	-	-	-	-	-	-	2	-	-	-	-	-
CO2	2	-	-	-	-	-	-	-	-	2	-	-	-	-	-
CO3	3	2	1	-	-	-	-	-	-	3	-	-	-	-	-
CO4	3	2	1	-	-	-	-	-	-	3	-	-	-	-	-
CO5	3	2	1	-	-	-	-	-	-	3	-	-	-	-	-
AVG	2.60	2.00	1.00	-	-	-	-	-	-	2.60	-	-	-	-	-



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation



COURSE CODE:GE8161
COURSE NAME:PROBLEM SOLVING AND PYTHON PROGRAMMING LABORATORY
SEMESTER: I

CO	At the end of the course, the student should be able to
CO1	write, test, and debug simple Python programs.
CO2	Implement Python programs with conditionals and loops
CO3	Develop Python programs step-wise by defining functions and calling them.
CO4	Use Python lists, tuples, dictionaries for representing compound data.
CO5	Read and write data from/to files in Python

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	3	-	-	2	2	2	-	3	3	2	3
CO2	3	2	2	2	3	-	-	2	2	2	-	3	3	2	3
CO3	3	2	2	2	3	-	-	2	2	2	-	3	3	2	3
CO4	3	2	2	2	3	-	-	2	2	2	-	3	3	2	3
CO5	3	2	2	2	3	-	-	2	2	2	-	3	3	2	3
AVG	3.00	2.00	2.00	2.00	3.00	-	-	2.00	2.00	2.00	-	3.00	3.00	2.00	3.00



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation



COURSE CODE:BS8161
COURSE NAME:PHYSICS AND CHEMISTRY LABORATORY
SEMESTER: I

CO	At the end of the course, the student should be able to
CO1	Apply principles of elasticity, optics and thermal properties for engineering applications.
CO2	The students will be outfitted with hands-on knowledge in the quantitative chemical analysis of water quality related parameters.
CO3	To provide the basic practical exposure to all the engineering and technological streams in the field of chemistry
CO4	To gain the knowledge about light, sound, laser, fiber optics and magnetism.
CO5	To develop the knowledge of conductometric titration and viscometry

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	1	1	-	-	-	-	-	1	-	-	1	-	-	-
CO2	2	1	-	-	-	-	-	-	1	-	-	1	-	-	-
CO3	2	1	-	-	1	-	1	-	1	-	-	1	-	-	-
CO4	2	1	-	-	1	-	1	-	1	-	-	1	-	-	-
CO5	2	1	-	-	1	-	1	-	1	-	-	1	-	-	-
AVG	2.00	1.00	1.00	-	1.00	-	1.00	-	1.00	-	-	1.00	-	-	-



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CO-PO MAPPING

2017 Regulation



COURSE CODE:HS8251
COURSE NAME:TECHNICAL ENGLISH
SEMESTER: II

CO	At the end of the course, the student should be able to
CO1	Read technical texts and write area- specific texts effortlessly.
CO2	Listen and comprehend lectures and talks in their area of specialisation successfully.
CO3	Speak appropriately and effectively in varied formal and informal contexts..
CO4	Write reports and winning job applications.
CO5	Initiate a discussion, negotiate, argue using appropriate communicative strategies

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	-	-	-	3	3	-	3	-	-	-
CO2	-	-	-	-	-	-	-	-	3	3	-	3	-	-	-
CO3	-	-	-	-	-	-	-	-	3	3	-	3	-	-	-
CO4	-	-	-	-	-	-	-	-	3	3	-	3	-	-	-
CO5	-	-	-	-	-	-	-	-	3	3	-	3	-	-	-
AVG	-	-	-	-	-	-	-	-	3.00	3.00	-	3.00	-	-	-



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CO-PO MAPPING

2017 Regulation



COURSE CODE:MA8251
COURSE NAME:ENGINEERING MATHEMATICS II
SEMESTER: II

CO	At the end of the course, the student should be able to
CO1	Eigen values and eigenvectors, diagonalization of a matrix, Symmetric matrices, Positive definite matrices and similar matrices.
CO2	Gradient, divergence and curl of a vector point function and related identities.
CO3	Evaluation of line, surface and volume integrals using Gauss, Stokes and Green's theorems and their verification.
CO4	Analytic functions, conformal mapping and complex integration.
CO5	Laplace transform and inverse transform of simple functions, properties, various related theorems and application to differential equations with constant coefficients

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	1	1	-	-	-	-	1	-	-	-	-	2	1	-
CO2	2	1	1	-	-	-	-	1	-	-	-	-	2	1	-
CO3	2	1	1	-	-	-	-	1	-	-	-	-	2	1	-
CO4	2	1	1	-	-	-	-	1	-	-	-	-	2	1	-
CO5	2	1	1	-	-	-	-	1	-	-	-	-	2	1	-
AVG	2.00	1.00	1.00	-	-	-	-	1.00	-	-	-	-	2.00	1.00	-



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2017 Regulation

COURSE CODE:PH8253
COURSE NAME: PHYSICS FOR ELECTRONICS ENGINEERING
SEMESTER: II

CO	At the end of the course, the student should be able to
CO1	Gain knowledge on classical and quantum electron theories, and energy band structures
CO2	Acquire knowledge on basics of semiconductor physics and its applications in various devices,
CO3	Get knowledge on magnetic and dielectric properties of materials
CO4	Have the necessary understanding on the functioning of optical materials for optoelectronics,
CO5	Understand the basics of quantum structures and their applications in spintronics and carbon electronics..

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	-	-	-	-	-	-	-	-	-	1	-	-	-
CO2	3	2	-	-	-	-	-	-	-	-	-	1	-	-	-
CO3	3	2		-	-	1	1	-	-	-	-	1	-	-	-
CO4	3	2		-	-	1	1	-	-	-	-	1	-	-	-
CO5	3	2	-	-	-	1	-	-	-	-	-	1	-	-	-
AVG	2.00	1.00		-	-	1.00	1.00	-	-	-	-	1.00	-	-	-



DHAANISH AHMED INSTITUTE OF TECHNOLOGY



DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE:BM8201
COURSE NAME: FUNDAMENTALS OF BIO CHEMISTRY
SEMESTER: II

CO	At the end of the course, the student should be able to
CO1	Explain the fundamentals of biochemistry
CO2	Clinical application of Biochemistry
CO3	The primary objective of this course is to give students a solid foundation in biochemical processes
CO4	The course is designed to give students basic concepts of biochemistry and its nature of interdisciplinary importance
CO5	To let students understand the physical and chemical properties of molecules, and their status of occurrence in biological system.

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	1				1	2					1			
CO2	2	1				1	3					1			
CO3	2	1				1	2					1			
CO4	3	2				1	2					1			
CO5	2	1				1	3					1			
AVG	2.20	1.20	0.00	0.00	0.00	1.00	2.40	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE:BM8251
COURSE NAME: ENGINEERING MECHANICS FOR BIOMEDICAL ENGINEERS
SEMESTER: II

CO	At the end of the course, the student should be able to
CO1	Use scalar and vector analytical techniques for analysing forces in statically determinate structures
CO2	Apply fundamental concepts of kinematics and kinetics of particles to the analysis of simple, practical problems
CO3	To learn basics of fluid mechanics and relate it to bio-fluids
CO4	To understand the action of friction and motion
CO5	To understand the dynamics of particles

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	1	1	-	-	1	1	2	-	2	3	2	3
CO2	3	2	2	1	1	-	-	1	1	2	-	2	3	2	3
CO3	3	2	2	1	1	-	-	1	1	2	-	2	3	2	3
CO4	3	2	2	1	1	-	-	1	1	2	-	2	3	2	3
CO5	3	2	2	1	1	-	-	1	1	2	-	2	3	2	3
AVG	3.00	2.00	2.00	1.00	1.00	-	-	1.00	1.00	2.00	-	2.00	3.00	2.00	3.00



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE:GE8261
COURSE NAME: ENGINEERING PRACTICES LABORATORY
SEMESTER: II

CO	At the end of the course, the student should be able to
CO1	Fabricate carpentry components and pipe connections including plumbing works.
CO2	Use welding equipments to join the structures.
CO3	Carry out the cable machining operations
CO4	Make the models using sheet metal works
CO5	Illustrate on centrifugal pump, Air conditioner, operations of smithy, foundary and fittings

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3							1	1	1		2			
CO2	3							1	1	1		2			
CO3	3							1	1	1		2			
CO4	3							1	1	1		2			
CO5	3							1	1	1		2			
AVG	3.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	2.00	0.00	0.00	0.00



COURSE CODE:BM8211
COURSE NAME: BIOCHEMISTRY LABORATORY
SEMESTER: II

CO	At the end of the course, the student should be able to
CO1	Understand the Biochemistry laboratory functional components
CO2	Understand the basics principle of preparation of buffers.
CO3	Have a sound knowledge of qualitative test of different biomolecules.
CO4	Understand the basics knowledge of Biochemical parameter and their interpretation in Blood sample.
CO5	Have a sound knowledge of separation technology of proteins and aminoacids

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	1	-	-	2	2	2	-	2	3	2	3
CO2	3	2	2	2	1	-	-	2	2	2	-	2	3	2	3
CO3	3	2	2	2	1	-	-	2	2	2	-	2	3	2	3
CO4	3	2	2	2	1	-	-	2	2	2	-	2	3	2	3
CO5	3	2	2	2	1	-	-	2	2	2	-	2	3	2	3
AVG	3.00	2.00	2.00	2.00	1.00	-	-	2.00	2.00	2.00	-	2.00	3.00	2.00	3.00



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE:BM8351
COURSE NAME: ANATOMY AND HUMAN PHYSIOLOGY
SEMESTER: III

CO	At the end of the course, the student should be able to
CO1	Students would be able to explain basic structure and functions of cell
CO2	Students would be learnt about anatomy and physiology of various systems of human body
CO3	Students would be able to explain interconnect of various systems
CO4	To Know to interconnect of various systems
CO5	To Know digestive and urinary system

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3					2		2			1	1	3		
CO2	3					2		1			1	1	3		
CO3	3					2		1			1	1	3		
CO4	3					2		2			1	1	3	1	
CO5	3					2		1			1	1	3		
AVG	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.40	0.00	0.00	1.00	1.00	3.00	0.20	0.00



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE: BM8301
COURSE NAME:SENSORS AND MEASUREMENTS
SEMESTER: III

CO	At the end of the course, the student should be able to
CO1	Measure various electrical parameters with accuracy, precision, resolution
CO2	Select appropriate passive or active transducers for measurement of physical phenomenon.
CO3	Select appropriate light sensors for measurement of physical phenomenon.
CO4	Use AC and DC bridges for relevant parameter measurement.
CO5	Employ Multimeter, CRO and different types of recorders for appropriate measurement.

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3		1	2							2	1	
CO2	3	3	3	1		2							2	2	1
CO3	3	3	3	1	1	2							2	1	1
CO4	3	3	3	2	1	2							2	1	1
CO5	3	3	3	1	1	2							2	1	1
AVG	3.00	3.00	3.00	1.00	0.80	2.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	1.20	0.80



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE: EC8352
COURSE NAME: SIGNALS AND SYSTEMS
SEMESTER: III

CO	At the end of the course, the student should be able to
CO1	To be able to determine if a given system is linear/causal/stable
CO2	Capable of determining the frequency components present in a deterministic signal
CO3	Capable of characterizing LTI systems in the time domain and frequency domain
CO4	To be able to compute the output of an LTI system in the time and frequency domains
CO5	To analyze discrete time signals and system in the Fourier and Z transform domain

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	3		2									2		
CO2	3	3		2									2		
CO3	3	3		2									2		
CO4	2	3		2									2		
CO5	2	3		2									2		
AVG	2.40	3.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE: EC8353
COURSE NAME: ELECTRON DEVICES AND CIRCUITS
SEMESTER: III

CO	At the end of the course, the student should be able to
CO1	Explain the structure and working operation of basic electronic devices.
CO2	Able to identify and differentiate both active and passive elements
CO3	Analyze the characteristics of different electronic devices such as diodes and transistors
CO4	Choose and adapt the required components to construct an amplifier circuit
CO5	Employ the acquired knowledge in design and analysis of oscillators

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2									2	1		
CO2	3	2	2									1	2		
CO3	3	2	3									1	1	2	
CO4	3	2	2									1			
CO5	3	2	2									1	1		
AVG	3.00	2.00	2.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.20	1.00	0.40	0.00



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE:BM8311
COURSE NAME: PATHOLOGY AND MICROBIOLOGY LABORATORY
SEMESTER: III

CO	At the end of the course, the student should be able to
CO1	Use Compound microscope
CO2	Practice on chemical examinations, Cryoprocessing, Histopathological examinations etc
CO3	To identify common infectious agents and the diseases that they cause
CO4	To evaluate methods used to identify infectious agents in the clinical microbiology lab.
CO5	To recall microbial physiology including metabolism, regulation and replication

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3		2			2			2			3	3	2	
CO2	3		2			2			2			3	3	2	
CO3	3		2			2			2			3	3	2	
CO4	3		2			2			2			3	2	2	
CO5	3		2			2			2			3	3	2	
AVG	3.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	3.00	2.80	2.00	0.00



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE: EE8452
COURSE NAME: BASICS OF ELECTRICAL ENGINEERING
SEMESTER: IV

CO	At the end of the course, the student should be able to
CO1	Design simple electrical circuits and understand through nodal, mesh analysis about constructing series and parallel configuration of circuits with sources and variable loads.
CO2	Get knowledge on electrical machines and on its efficient operating principle.
CO3	Understand metering principles, safety measures while working with electrical circuits.
CO4	Analyse existing power distribution and hence apply technology in electrical applications
CO5	To observe the electricity supply sources based on classical and standalone systems

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	2										3		
CO2	3	2	2										3		
CO3	3	3	3										3		
CO4	3	2	2										3		
CO5	3	3	3										3		
AVG	3.00	2.60	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	0.00	



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE:EC8453
COURSE NAME: LINEAR INTEGRATED CIRCUITS
SEMESTER: IV

CO	At the end of the course, the student should be able to
CO1	Design linear and non linear applications of OP – AMPS
CO2	Design applications using analog multiplier and PLL
CO3	Design ADC and DAC using OP – AMPS
CO4	Generate waveforms using OP – AMP Circuits
CO5	Analyze special function ICs

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3										1		
CO2	3	2	3										1		1
CO3	3	3	3										2	1	
CO4	3	2	2											1	
CO5	3	3	3												
AVG	3.00	2.60	2.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.40	



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE:EC8393
COURSE NAME: FUNDAMENTALS OF DATA STRUCTURES IN C
SEMESTER: IV

CO	At the end of the course, the student should be able to
CO1	Implement linear and non-linear data structure operations using C
CO2	Suggest appropriate linear / non-linear data structure for any given data set.
CO3	Apply hashing concepts for a given problem
CO4	Modify or suggest new data structure for an application
CO5	Appropriately choose the sorting algorithm for an application

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	-								2	2	-	2
CO2	3	2	2	-								2	2	-	2
CO3	3	2	2	-								2	2	-	2
CO4	3	2	2	-								2	2	-	2
CO5	3	3	2	1								2	2	-	2
AVG	3.00	2.20	2.00	1.00								2.00	2.00	-	2.00



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE:EC8381
COURSE NAME: FUNDAMENTALS OF DATA STRUCTURES IN C LABORATORY
SEMESTER: IV

CO	At the end of the course, the student should be able to
CO1	Write basic and advanced programs in C
CO2	Implement functions and recursive functions in C
CO3	Implement data structures using C
CO4	Choose appropriate sorting algorithm for an application and implement it in a modularized way
CO5	To Choose appropriate sorting algorithm for an application and implement it in a modularized way

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	1	1	-	-	2	2	2	-	3	3	2	2
CO2	3	2	2	1	1	-	-	2	2	2	-	3	3	2	2
CO3	3	2	2	1	1	-	-	2	2	2	-	3	3	2	2
CO4	3	3	2	2	1	-	-	2	2	2	-	3	3	2	2
CO5	3	2	2	1	1	-	-	2	2	2	-	3	3	2	2
AVG	3.00	2.20	2.00	1.20	1.00	-	-	2.00	2.00	2.00	-	3.00	3.00	2.00	2.00



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE:BM8411
COURSE NAME: INTEGRATED CIRCUITS LABORATORY
SEMESTER: IV

CO	At the end of the course, the student should be able to
CO1	Design oscillators and amplifiers using operational amplifiers
CO2	Design filters using Opamp and perform experiment on frequency response
CO3	Analyse the working of PLL and use PLL as frequency multiplier.
CO4	Design DC power supply using ICs.
CO5	Aquire knowledge in using SPICE

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2		3								2	3	2	
CO2	3	3		2								2	3	3	
CO3	2	2		3								2	3	2	
CO4	3	2		2								2	3		
CO5	3	2		3									3	3	
AVG	2.80	2.20	0.00	2.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.60	3.00	2.00	0.00



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE: EC8394
COURSE NAME: ANALOG AND DIGITAL COMMUNICATION
SEMESTER: V

CO	At the end of the course, the student should be able to
CO1	Apply analog communication techniques
CO2	Use data and pulse communication techniques.
CO3	Analyze Source and Error control coding.
CO4	Utilize multi-user radio communication
CO5	Understand digital communication techniques

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	2	2									3		
CO2	3	2	2	2									3		
CO3	3	3	3	3									2		
CO4	3	2	2	2									2		
CO5	3	3	3	3									3		
AVG	3.00	2.60	2.40	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.60	0.00	0.00



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE: BM8501
COURSE NAME: BIOCONTROL SYSTEMS
SEMESTER: V

CO	At the end of the course, the student should be able to
CO1	Understand the need for mathematical modeling of various systems, representation of systems in block diagrams and signal flow graphs and are introduced to biological control systems
CO2	Analyze the time response of various systems and discuss the concept of system stability
CO3	Analyze the frequency response characteristics of various systems using different charts
CO4	Understand the concept of modeling basic physiological systems
CO5	Comprehend the application aspects of time and frequency response analysis in physiological control systems.

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	2									3	3	
CO2	3	3	3	2									3	3	
CO3	3	3	3	2									3	3	
CO4	3	3	3	3									3	3	
CO5	3	2	3	2									3	3	
AVG	3.00	2.80	3.00	2.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	3.00	0.00



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE: BM8502
COURSE NAME: BIOMEDICAL INSTRUMENTATION
SEMESTER: V

CO	At the end of the course, the student should be able to
CO1	Differentiate different bio potentials and its propagations.
CO2	Illustrate different electrode placement for various physiological recordings
CO3	Design bio amplifier for various physiological recordings
CO4	Explain various technique for non-electrical physiological measurements
CO5	Demonstrate different biochemical measurement techniques

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	2	3	2							2		
CO2	3	2	3	2	2	2							2	2	
CO3	3	3	3	2	3	2							2	2	
CO4	3	2	2	2	3	2							2	3	2
CO5	3	3	3	2	2	2							2	3	2
AVG	3.00	2.60	2.80	2.00	2.60	2.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.80



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE: EC8553
COURSE NAME: DISCRETE-TIME SIGNAL PROCESSING
SEMESTER: V

CO	At the end of the course, the student should be able to
CO1	Apply DFT for the analysis of digital signals and systems
CO2	Design IIR and FIR filters
CO3	Characterize the effects of finite precision representation on digital filters
CO4	Design multirate filters
CO5	Apply adaptive filters appropriately in communication systems

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	2									2		
CO2	3	3	3	2									2		
CO3	3	3	3	2									2		
CO4	3	3	3	3									2		
CO5	3	2	3	2									2		
AVG	3.00	2.80	3.00	2.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE: EC8562
COURSE NAME: DIGITAL SIGNAL PROCESSING LABORATORY
SEMESTER: V

CO	At the end of the course, the student should be able to
CO1	Carryout basic signal processing operations
CO2	Demonstrate their abilities towards MATLAB based implementation of various DSP systems
CO3	Analyze the architecture of a DSP Processor
CO4	Design and Implement the FIR and IIR Filters in DSP Processor for performing filtering operation over real-time signals
CO5	Design a DSP system for various applications of DSP

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2		3								2	3	2	
CO2	3	2		2								2	3	3	
CO3	2	2		3								2	3	3	
CO4	3	2		2								2	3	2	
CO5	3	2		3								2	3	2	
AVG	2.80	2.00	0.00	2.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	3.00	2.40	0.00



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE: BM8511
COURSE NAME: BIO MEDICAL INSTRUMENTATION LABORATORY
SEMESTER: V

CO	At the end of the course, the student should be able to
CO1	Design preamplifiers and amplifiers for various bio signal recordings
CO2	Measure various non-electrical parameters using suitable sensors/transducers
CO3	Design PCB layout for any bio amplifier
CO4	To Design preamplifiers and amplifiers for various bio signal recordings.
CO5	To Design PCB layout for any bio amplifier.

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2		3								2	3	2	
CO2	3	3		2								2	3	2	
CO3	2	2		3								2	3	2	
CO4	3	2		2								2	2	2	
CO5	3	2		3								2	2	2	
AVG	2.80	2.20	0.00	2.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.60	2.00	0.00



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE: HS8381
COURSE NAME: INTERPERSONAL SKILLS/LISTENING&SPEAKING
SEMESTER: V

CO	At the end of the course, the student should be able to
CO1	Listen and respond appropriately.
CO2	Participate in group discussions
CO3	Make effective presentations
CO4	Participate confidently and appropriately in conversations both formal and informal
CO5	improve general and academic listening skills

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	2	-	-	-	3	3	2	2	-	-	-
CO2	-	-	-	-	2	-	-	-	3	3	2	2	-	-	-
CO3	-	-	-	-	2	-	-	-	3	3	2	2	-	-	-
CO4	-	-	-	-	2	-	-	-	3	3	2	2	-	-	-
CO5	-	-	-	-	2	-	-	-	3	3	2	2	-	-	-
AVG	-	-	-	-	2.00	-	-	-	3.00	3.00	2.00	2.00	-	-	-



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE: EC8691
COURSE NAME: MICROPROCESSORS AND MICROCONTROLLERS
SEMESTER: VI

CO	At the end of the course, the student should be able to
CO1	Understand and execute programs based on 8086 microprocessor
CO2	Design Memory Interfacing circuits.
CO3	Design and interface I/O circuits.
CO4	Design and implement 8051 microcontroller based systems.
CO5	To design a microcontroller based system

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	-	-	-	-			-		-	-	
CO2	2	2	3	3	-	-	-	-			-		-	-	
CO3	3	2	3	2	-	-	-	-			-		-	-	
CO4	3	2	2	3	-	-	-	-			-		-	-	
CO5	3	2	2	3	-	-	-	-			-		-	-	
AVG	2.80	2.00	2.40	2.60	-	-	-	-			-		-	-	



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE: BM8601
COURSE NAME: DIAGNOSTIC AND THERAPEUTIC EQUIPMENT- I
SEMESTER: VI

CO	At the end of the course, the student should be able to
CO1	Describe the working and recording setup of all basic cardiac equipment.
CO2	Understand the working and recording of all basic neurological equipment's.
CO3	Discuss the recording of diagnostic and therapeutic equipment's related to EMG.
CO4	Explain about measurements of parameters related to respiratory system.
CO5	Describe the measurement techniques of sensory responses

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3			3	2							3		
CO2	3	2			3	2							3		
CO3	3	3			3	2							3		
CO4	3	3			3	2							3		
CO5	3	2			3	2							3		
AVG	3.00	2.60	0.00	0.00	3.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	0.00	0.00



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE: GE8291
COURSE NAME: ENVIRONMENTAL SCIENCE AND ENGINEERING
SEMESTER: VI

CO	At the end of the course, the student should be able to
CO1	Environmental Pollution or problems cannot be solved by mere laws. Public participation is an important aspect which serves the environmental Protection. One will obtain knowledge on the following after completing the course.
CO2	Public awareness of environmental is at infant stage
CO3	Ignorance and incomplete knowledge has lead to misconceptions
CO4	Development and improvement in std. of living has lead to serious environmental disasters
CO5	To know the dynamic processes and understand the features of the earth's interior and surface.

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3					2	3					2			
CO2	3					2	3					2			
CO3	3					2	3					2			
CO4	3					2	2					2			
CO5	3					2	2					2			
AVG	3.00	0.00	0.00	0.00	0.00	2.00	2.60	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE: MD8071
COURSE NAME: TELEHEALTH TECHNOLOGY
SEMESTER: VI

CO	At the end of the course, the student should be able to
CO1	Apply multimedia technologies in telemedicine
CO2	Explain protocols behind encryption techniques for secure transmission of data
CO3	Apply telehealth in healthcare
CO4	Know telemedical standards, mobile telemedicine and its applications.
CO5	Learn the key principles for telemedicine and health

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2			2								2		
CO2	3	2			2								2		
CO3	3	2			2								2		
CO4	3	2			2								2		
CO5	3	2			2								2		
AVG	3.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE: EC8681
COURSE NAME: MICROPROCESSORS AND MICROCONTROLLERS LABORATORY
SEMESTER: VI

CO	At the end of the course, the student should be able to
CO1	Write ALP Programmes for fixed and Floating Point and Arithmetic operations
CO2	Interface different I/Os with processor
CO3	Generate waveforms using Microprocessors
CO4	Execute Programs in 8051
CO5	Explain the difference between simulator and Emulator

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	1	-	-	-	-	2	1	1	1	-	-	1
CO2	3	2	2	1	-	-	-	-	2	1	1	1	-	-	1
CO3	3	2	2	1	-	-	-	-	2	1	1	1	-	-	1
CO4	3	2	2	1	-	-	-	-	2	1	1	1	-	-	1
CO5	3	2	2	1	-	-	-	-	2	1	1	1	-	-	1
AVG	3.00	2.00	2.00	1.00	-	-	-	-	2.00	1.00	1.00	1.00	-	-	1.00



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE: BM8611
COURSE NAME: DIAGNOSTIC AND THERAPEUTIC EQUIPMENT LABORATORY
SEMESTER: VI

CO	At the end of the course, the student should be able to
CO1	Measure different bioelectrical signals using various methods
CO2	Assess different non-electrical parameters using various methodologies
CO3	Illustrate various diagnostic and therapeutic techniques
CO4	Examine the electrical safety measurements
CO5	Analyze the different bio signals using suitable tools.

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2					2	2	2		3		
CO2	3	2	2	2					2	2	2		3		
CO3	3	2	2	2					2	2	2		3		
CO4	3	2	2	2					2	2	2		3		
CO5	3	2	2	2					2	2	2		3		
AVG	3.00	2.00	2.00	2.00	0.00	0.00	0.00	0.00	2.00	2.00	2.00	0.00	3.00	0.00	0.00



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE: BM8612
COURSE NAME: MINI PROJECT
SEMESTER: VI

CO	At the end of the course, the student should be able to
CO1	Formulate a real world problem, identify the requirement and develop the design solutions
CO2	Express the technical ideas, strategies and methodologies.
CO3	Utilize the new tools, algorithms, techniques that contribute to obtain the solution of the project.
CO4	Test and validate through conformance of the developed prototype and analysis the cost effectiveness.
CO5	Prepare report and present the oral demonstrations

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	2	2	1	2	2	2	2	3	3	2	2
CO2	3	2	2	2	2	2	1	2	2	2	2	3	3	2	2
CO3	3	2	2	2	2	2	1	2	2	2	2	3	3	2	2
CO4	3	2	2	2	2	2	1	2	2	2	2	3	3	2	2
CO5	3	2	2	2	2	2	1	2	2	2	2	3	3	2	2
AVG	3.00	2.00	2.00	2.00	2.00	2.00	1.00	2.00	2.00	2.00	2.00	3.00	3.00	2.00	2.00



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE: HS8581
COURSE NAME: PROFESSIONAL COMMUNICATION
SEMESTER: VI

CO	At the end of the course, the student should be able to
CO1	Make effective presentations
CO2	Participate confidently in Group Discussions.
CO3	Attend job interviews and be successful in them.
CO4	Develop adequate Soft Skills required for the workplace
CO5	Orient the students towards grooming as a professional

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	2	-	-	-	2	3	2	2	-	-	-
CO2	-	-	-	-	2	-	-	-	2	3	2	2	-	-	-
CO3	-	-	-	-	2	-	-	-	2	3	2	2	-	-	-
CO4	-	-	-	-	2	-	-	-	2	3	2	2	-	-	-
CO5	-	-	-	-	2	-	-	-	2	3	2	2	-	-	-
AVG	-	-	-	-	2.00	-	-	-	2.00	3.00	2.00	2.00	-	-	-



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE: BM8701
COURSE NAME: DIAGNOSTIC AND THERAPEUTIC EQUIPMENT – II
SEMESTER: VII

CO	At the end of the course, the student should be able to
CO1	Discuss the various equipment used in ICU and applications of telemetry
CO2	Explain the types of diathermy and its applications.
CO3	Express the basics of ultrasound and its application in medicine
CO4	Discuss the various extracorporeal and special diagnostic devices used in hospitals
CO5	Outline the importance of patient safety against electrical hazard

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2		2							1	3		
CO2	3	2	2		2							1	3		
CO3	3	2	2		2							1	3		
CO4	3	2	2		2							1	3		
CO5	3	2	2		2							1	3		
AVG	3.00	2.00	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	3.00	0.00	0.00



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE: EC8093
COURSE NAME: DIGITAL IMAGE PROCESSING
SEMESTER: VII

CO	At the end of the course, the student should be able to
CO1	Know and understand the basics and fundamentals of digital image processing, such as digitization, sampling, quantization, and 2D-transforms.
CO2	Operate on images using the techniques of smoothing, sharpening and enhancement
CO3	Understand the restoration concepts and filtering techniques.
CO4	Learn the basics of segmentation, features extraction, compression and recognition methods for color models.
CO5	To become familiar with image compression and recognition methods

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	2	2								2	2		2
CO2	3	3	2	2								2	2		2
CO3	3	3	2	2								2	2		2
CO4	3	3	2	2								2	2		2
CO5	3	3	2	2								2	2		2
AVG	3.00	3.00	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00	2.00



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE: BM8703
COURSE NAME: REHABILITATION ENGINEERING
SEMESTER: VII

CO	At the end of the course, the student should be able to
CO1	Gain adequate knowledge about the needs of rehabilitations and its future development
CO2	Have an in depth idea about Engineering Concepts in Sensory & Motor rehabilitation.
CO3	Apply the different types of Therapeutic Exercise Technique to benefit the society.
CO4	Design and apply different types Hearing aids, visual aids and their application in biomedical field and hence the benefit of the society.
CO5	Gain in-depth knowledge about different types of models of Hand and arm replacement.

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3				3		2					2		
CO2	3	3				3		2					2		
CO3	3	3				3		2					2		
CO4	3	3				3		2					2		
CO5	3	3				3		2					2		
AVG	3.00	3.00	0.00	0.00	0.00	3.00	0.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00



COURSE CODE: OCY751
COURSE NAME: WASTE WATER TREATMENT
SEMESTER: VII

CO	At the end of the course, the student should be able to
CO1	Will have knowledge about adsorption process
CO2	Will gain idea about various methods available for water treatment
CO3	Will appreciate the necessity of water and acquire knowledge of preliminary treatment.
CO4	To make the student conversant with the water treatment methods oxidation process
CO5	To provide basic understandings about preliminary treatment

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	-	-	-	1	1	3	1	-	-	1	-	-	-
CO2	3	2	-	-	-	1	1	3	1	-	-	1	-	-	-
CO3	3	2	-	-	-	1	1	3	1	-	-	1	-	-	-
CO4	3	2	-	-	-	1	1	3	1	-	-	1	-	-	-
CO5	3	2	1	-	-	1	1	3	2	-	-	1	-	-	-
AVG	2.20	1.20	1.00	-	-	1.00	1.00	3.00	1.20	-	-	1.00	-	-	-



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE: MD8751
COURSE NAME: HOSPITAL TRAINING
SEMESTER: VII

CO	At the end of the course, the student should be able to
CO1	Advocate a patient-centred approach in healthcare
CO2	Communicate with other health professionals in a respectful and responsible manner
CO3	Recognize the importance of inter-professional collaboration in healthcare.
CO4	Propose a patient-centred inter-professional health improvement plan based upon the patient's perceived needs
CO5	Use the knowledge of one's own role and those of other professions to address the healthcare needs of populations and patients served.

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2		2		2	2	2	2			2			
CO2	3	2		2		2	2	2	2			2			
CO3	3	2		2		2	2	2	2			2			
CO4	3	2		2		2	2	2	3			2			
CO5	3	2		2		2	2	3	3			2			
AVG	3.00	2.00	0.00	2.00	0.00	2.00	2.00	2.20	2.40	0.00	0.00	2.00	0.00	0.00	0.00



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE: BM8076
COURSE NAME: Electrical Safety and Quality Assurance
SEMESTER: VIII

CO	At the end of the course, the student should be able to
CO1	The purpose of this course is to help students to develop knowledge and insight into the procedures used in quality control and assurance activities as well as safety measures to be followed in hospitals.
CO2	To know the Standards and requirement
CO3	To know the Electrical protection and maintenance
CO4	To know the Standardization of quality medical care in hospitals
CO5	To know the Regulatory requirement for health care

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2				2					2				
CO2	3	2				2					2				
CO3	3	2				2					2				
CO4	3	2				2					2				
CO5	3	2				2					2				
AVG	3.00	2.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00



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DEPARTMENT OF BIOMEDICAL ENGINEERING

CO-PO MAPPING

2017 Regulation

COURSE CODE: BM8077
COURSE NAME: HOSPITAL WASTE MANAGEMENT
SEMESTER: VIII

CO	At the end of the course, the student should be able to
CO1	Analyse various hazards, accidents and its control
CO2	Design waste disposal procedures for different biowastes
CO3	Categorise different biowastes based on its properties
CO4	Design different safety facility in hospitals
CO5	Propose various regulations and safety norms

Pos/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2			2	3	2				1			
CO2	3	2	2			2	2	2				1			
CO3	3	2	2			2	3	2				1			
CO4	3	2	2			2	2	2				1			
CO5	3	2	2			2	3	2				1			
AVG	3.00	2.00	2.00	0.00	0.00	2.00	2.60	2.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00

