Government College of Engineering, Salem - 11

Department of Electronics and Communication Engineering

COs - POs and PSO Mapping

Course Articulation Matrix – 22 Regulation

Semester - I																
22EN101-Communicative English																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Comprehend the main ideas, key details and inferred meanings of technical texts	0	0	0	1	-	-	-	-	1	3	-	1	-	-	1	-
CO2	Use language effectively at technical and professional contexts	-	-	-	1	-	-	-	-	1	3	-	2	-	-	2	-
CO3	Apply the academic and functional writing skills in formal and informal communicative contexts	-	-	-	2	-	-	-	-	1	3	-	1	-	-	1	-
CO4	Interpret pictorial representation of statistical data and charts	-	-	-	3	-	-	-	-	1	3	-	1	-	-	1	-
Average		**-**	**-**	**-**	**1.7**	**-**	**-**	**-**	**-**	**1**	**3**	**-**	**1.2**	**-**	**-**	**1.2**	**-**

Semester – I																
22MA102 -Matrices, Calculus And Differential Equations																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Learn the fundamental knowledge of Matrix theory.	3	2	-	2	-	-	-	-	-	-	-	-	2	-	-	-
CO2	Solve Engineering problems using multiple integral calculus.	3	2	-	2	-	-	-	-	-	-	-	-	2	-	-	-
CO3	Acquire skills in solving ordinary differential equations.	3	2	-	2	-	-	-	-	-	-	-	-	2	-	-	-
CO4	Understanding the concept of partial differential equations.	3	2	-	2	-	-	-	-	-	-	-	-	2	-	-	-
CO5	Acquire skills in applications of Vector Calculus.	3	2	-	2	-	-	-	-	-	-	-	-	2	-	-	-
Average		**3**	**2**	**-**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**-**	**-**	**-**

Semester – I																
22PH102 - Materials Science For Engineering																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Understanding the concept of conduction in materials and its carrier concentration.	3	2	1	-	-	-	1	-	-	-	-	1	2	2	-	-
CO2	The basics of semiconductor and variation of Fermi level with respect to different parameters.	3	2	1	-	1	1	1	1	-	-	-	2	-	-	1	-
CO3	Analyze the various mechanism involved in dielectric polarization and its applications.	3	3	1	-	-	1	1	1	-	-	-	1	1	-	-	-
CO4	Applying the concept of superconductor in magnetic levitation and SQUID.	3	3	2	1	2	1	-	-	-	-	-	2	-	2	-	-
CO5	Synthesis of modern engineering materials by using various techniques and its properties	2	2	2	2	3	1	-	1	-	-	-	2	-	-	2	-
Average		**2.8**	**2.4**	**1.4**	**1.5**	**2**	**1**	**1**	**1**	**-**	**-**	**-**	**1.6**	**1.5**	**2**	**1.5**	**-**

Semester – I																
22CS103 - C Programming for Electrical Engineers																
		Program Outcomes												**Program Specific Outcomes**		
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**
CO1	Formulate and apply logic to solve basic problems.	3	3	3	3	3	2	2	1	1	1	3	3	1	2	1
CO2	Write, compile and debug programs in C language.	3	3	3	3	3	2	2	1	1	1	3	3	1	1	2
CO3	Apply the concepts such as arrays, decision making and looping statements to solve real time applications.	3	3	3	3	3	2	2	1	1	1	3	3	1	2	1
CO4	Solve simple scientific and statistical problems using functions and pointers.	3	3	3	3	3	2	2	1	1	1	3	3	1	2	1
CO5	Write programs related to structures and unions for simple applications.	3	3	3	3	3	2	2	1	1	1	3	3	1	2	1
Average		3	3	3	3	3	2	2	1	1	1	3	3	1	1.8	1.2

Semester - I																	
22CM101 - Basic Civil And Mechanical Engineering																	
		Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Acquire the basic Knowledge in different fields of Civil Engineering.	3	2	1	-	-	2	1	2	-	-	-	-	-	3	-	-
CO2	Appraise the materials used in construction.	2	-	2	-	-	1	1	2	-	-	-	-	-	2	-	-
CO3	Illustrate the ideas of Civil Engineering Applications.	1	2	1	-	-	1	1	1	-	-	-	-	-	2	-	-
CO4	Understand the different parts of buildings.	1	1	-	-	-	-	1	-	-	-	-	-	-	1	-	-
Average		**1.8**	**1.5**	**1.3**	**-**	**-**	**1.3**	**1**	**1.5**	**-**	**-**	**-**	**-**	**-**	**2**	**-**	**-**

Semester – I																
22CS102 - Computer Practice And C Programming Laboratory																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Demonstrate the usage of features supported by word processing applications.	-	-	-	-	-	-	-	-	-	3	-	-	1	-	-	-
CO2	Demonstrate the usage of features supported by spread sheet applications.	2	3	-	-	-	-	-	-	-	-	-	-	1	-	-	-
CO3	Apply general programming techniques to develop digital solution to problems	2	3	3	-	-	-	-	-	-	-	-	3	2	-	-	-
CO4	Implement solutions develop with general programming techniques in C programming language	1	1	1	-	-	-	-	-	-	-	-	3	3	-	-	-
Average		**1.7**	**2.3**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**3**	**-**	**3**	**1.7**	**-**	**-**	**-**

Semester - I																
22ME102 - Workshop Manufacturing Practices																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Familiarize the working of various equipment and safety measures.	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-
CO2	Prepare fitting of metal and wooden pieces using simple fitting and carpentry tools manually.	-	3	-	2	1	-	-	-	-	-	-	-	-	-	2	-
CO3	Fabrication of components using welding, lathe and drilling machine.	-	3	-	2	1	-	-	-	-	-	-	-	-	-	2	-
CO4	Make the model using sheet metal works.	-	3	-	2	1	-	-	-	-	-	-	-	-	-	2	-
Average		**-**	**2.2**	**-**	**1.5**	**7**	**7**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1.5**	**-**

Semester -II																
22MA204 - Fourier Series And Transforms																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Acquire the knowledge about Fourier series.	3	2	-	2	-	-	-	-	-	-	-	-	2	-	-	-
CO2	Appreciate the physical significance of Fourier series techniques in solving one- and two-dimensional heat flow problems and one-dimensional wave equations.	3	2	-	2	-	-	-	-	-	-	-	-	2	-	-	-
CO3	Acquire the knowledge about Laplace transforms.	3	2	-	2	-	-	-	-	-	-	-	-	2	-	-	-
CO4	Apply the knowledge of Fourier transform in engineering problems.	3	2	-	2	-	-	-	-	-	-	-	-	2	-	-	-
CO5	Apply the knowledge of Z-transform in engineering problems.	3	2	-	2	-	-	-	-	-	-	-	-	2	-	-	-
Average		**3**	**2**	**-**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**-**	**-**	**-**

Semester -II																
22PH2-2 - Physics – Waves, Optics And Quantum Mechanics																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Understand Simple harmonic oscillation and propagation of waves.	2	3	1	1	-	-	-	1	1	-	-	1	1	1	-	-
CO2	Apply matrix method to analyse system of reflecting and refracting surfaces.	2	2	1	1	1	-	-	1	-	-	-	1	1	1	1	-
CO3	Analyze the various experimental techniques in wave optics.	3	2	1	1	1	-	-	2	1	-	-	1	1	1	1	-
CO4	Understand the concept of laser and its applications.	3	1	2	1	2	1	-	-	1	-	-	2	-	1	1	-
CO5	Gain knowledge in the basics of quantum mechanics.	3	2	2	1	1	-	-	-	-	-	-	2	1	1	1	-
Average		**2.6**	**2**	**1.4**	**1**	**1.2**	**1**	**-**	**1.3**	**1**	**-**	**-**	**1.4**	**1**	**1**	**1**	**-**

Semester -II																
22CY101 - Engineering Chemistry																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	To recall the basic principles of spectroscopy and their applications	3	3	-	3	-	-	-	-	-	-	-	-	3	1	1	-
CO2	To paraphrase the different methods for water analysis & purification and Nanomaterials & its applications	3	2	-	1	-	2	-	-	-	-	-	-	3	1	1	-
CO3	To apply the various adsorption technics and basic knowledge of Phase equilibria	3	1	-	1	-	-	-	-	-	-	-	-	2	1	1	-
CO4	To integrate the principles of electrochemistry, electrochemical cells, corrosion, and its control	2	1	-	1	-	2	-	-	-	-	-	-	2	3	2	-
CO5	To assess the basis of polymer preparations & applications and enhancement of the quantity & quality of fuels.	3	2	-	3	-	2	-	-	-	-	-	-	1	1	1	-
Average		**2.8**	**1.8**	**-**	**1.8**	**-**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**2.2**	**1.4**	**1.2**	**-**

Semester -II																
22HS201 - Universal Human Values																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Become more aware of themselves, and their surroundings (family, society, nature) and become more responsible in life	-	-	1	-	-	1	-	2	-	1	-	3	2	-	1	-
CO2	Handle problems with sustainable solutions, while keeping human relationships and human nature in mind	-	-	1	-	-	3	-	1	-	1	-	3	1	-	1	-
CO3	Become sensitive to their commitment towards what they have understood (human values, human relationship and human society)	-	-	1	-	-	2	-	1	-	1	-	3	1	-	2	-
CO4	Apply what they have learnt to their own self in different day-to-day settings in real life, at least a beginning would be made in this direction.	-	-	2	-	-	1	-	1	-	1	-	3	1	-	1	-
Average		**-**	**-**	**1.2**	**-**	**-**	**1.7**	**-**	**1.2**	**-**	**1**	**-**	**3**	**1.2**	**-**	**1.2**	**-**

Semester -II																
22ME101 - Engineering Graphics And Design																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Familiarize with the fundamentals and standards of engineering graphics.	3	1	-	-	-	-	-	-	-	-	-	-	3	1	-	-
CO2	Ability to understand the fundamental concepts of projection of points, lines and planes.	3	1	-	-	-	-	-	-	-	-	-	-	3	1	-	-
CO3	Project the solids and section of solids.	3	1	-	-	-	-	-	-	-	-	-	-	3	1	-	-
CO4	Familiarize and develop the lateral surfaces of solids	3	1	-	-	-	-	-	-	-	-	-	-	3	1	-	-
CO5	Visualize and project the orthographic, isometric and perspective sections of simple solids.	3	1	-	-	-	-	-	-	-	-	-	-	3	1	-	-
Average		**3**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**3**	**1**	**-**	**-**

Semester –II																
22EN102 - Professional Skills Laboratory																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	To read passages fluently with good pronunciation	-	-	-	1	-	-	-	-	2	3	-	1	-	-	1	-
CO2	To develop an expressive style of reading	-	-	-	1	-	-	-	-	2	3	-	1	-	-	1	-
CO3	To make effective oral presentations in technical and general contexts	-	-	-	2	-	-	-	-	2	3	-	1	-	-	1	-
CO4	To excel at professional oral communication	-	-	-	2	-	-	-	-	2	3	-	1	-	-	3	-
Average		**-**	**-**	**-**	**1.5**	**-**	**-**	**-**	**-**	**2**	**3**	**-**	**1**	**-**	**-**	**1.5**	**-**

Semester –II																
22PH103 - Physics Laboratory																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Handle different measuring instruments and to measure different parameters.	3	2	-	3	3	-	-	-	3	1	-	2	1	1	1	-
CO2	Calculate the important parameters and to arrive at the final result based on the experimental measurements.	3	2	-	2	1	-	-	-	2	-	-	1	1	1	1	-
Average		**3**	**2**	**-**	**2.5**	**2**	**-**	**-**	**-**	**2.5**	**1**	**-**	**1.5**	**1**	**1**	**1**	**-**

Semester –II																
22CY102 - Chemistry Laboratory																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	To summarize the applicability of the practical skill gained in various fields.	1	1	-	3	-	-	-	-	-	-	-	-	2	-	-	-
CO2	To calculate the composition of brass quantitatively and the molecular weight of polymers.	1	2	-	3	-	-	-	-	-	-	-	-	2	-	-	-
CO3	To understand the principle and applications of conductometric and pH titrations, spectrometer, and potentiometric titrations.	2	2	-	3	-	-	-	-	-	-	-	-	2	-	-	-
Average		**1.3**	**1.7**	**-**	**3**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**-**	**-**	**-**

Semester –III																
22MA302 - STATISTICS AND NUMERICAL METHODS																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Learn about statistical averages and fitting the curves by Least Square Method.	3	2	3	3	-	-	-	-	-	-	-	-	2	-	-	-
CO2	Acquire the techniques of interpolation.	3	2	3	3	-	-	-	-	-	-	-	-	2	-	-	-
CO3	Familiar with the numerical differentiation and integration	3	2	2	3	-	-	-	-	-	-	-	-	2	-	-	-
CO4	Solve the initial value problems for ordinary differential equations.	3	2	2	2	-	-	-	-	-	-	-	-	2	-	-	-
CO5	Find the numerical solution of partial differential equation by using Finite difference method.	3	2	2	2	-	-	-	-	-	-	-	-	2	-	-	-
Average		**1.3**	**1.7**	**2.4**	**2.6**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**-**	**-**	**-**

Semester –III																
22EE301 - Electric Circuit Analysis																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Solve the electrical network using mesh, nodal analysis and applying network theorems.	3	2	1	2	3	-	1	-	-	-	-	2	3	3	2	1
CO2	Solve the first order and second order differential equations for series and parallel circuits and analyse its steady state and transient response.	3	2	1	2	3	-	1	-	-	-	-	2	3	3	2	1
CO3	Analyze the steady state response for AC sinusoidal input and basic concepts of resonance and coupled circuits.	3	2	1	2	3	-	1	-	-	-	-	2	3	3	2	1
CO4	Analyse the electrical circuit using Laplace transforms	3	3	-	2	2	-	-	-	-	-	-	2	2	3	2	1
CO5	Understand the two port networks and its parameters for electric circuit analysis.	3	2	-	2	2	-	-	-	-	-	-	2	2	3	2	1
Average		**3**	**2.2**	**1**	**2**	**2.6**	**-**	**1**	**-**	**-**	**-**	**-**	**2.6**	**3**	**2**	**1**	**1**

Semester –III																
22EE302 - Electromagnetic Theory																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Recall the fundamental concept, laws and theorem of electric and magnetic fields.	3	3	2	2	2	1	1	1	1	1	1	1	3	1	1	-
CO2	Associate the concepts in electrostatic fields and magnetic fields.	1	3	2	2	2	1	1	1	1	1	1	1	2	1	1	-
CO3	Analyze the Electric and magnetic Field in material space.	1	3	2	2	2	1	1	1	1	1	1	1	2	1	1	-
CO4	Apply the boundary conditions to the applications in electrostatic fields and magneto static fields. .	1	1	3	3	2	2	1	1	1	1	1	1	2	2	1	-
CO5	Assess the knowledge of electromagnetic waves and characterizing parameters.	1	1	3	2	2	2	1	1	1	1	1	1	2	2	1	-
Average		**1.4**	**2.2**	**2.4**	**2.2**	**2**	**1.4**	**1**	**1**	**1**	**1**	**1**	**1**	**2.2**	**1.4**	**1**	**-**

Semester –III																
22EE303 - DC Machines And Transformers																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Recite the concepts of electromechanical energy conversion principles.	3	2	1	-	-	1	-	-	-	-	-	-	-	3	1	-
CO2	Understand the basic concepts of DC machines and transformers.	3	2	1	-	-	1	-	-	-	-	-	-	-	3	1	-
CO3	Evaluate the performance characteristics of DC machines and transformers.	3	2	1	-	-	1	-	-	-	-	-	-	-	3	1	-
CO4	Conduct various tests on DC machines.	3	2	3	1	-	-	-	-	-	-	-	-	-	3	1	-
CO5	Conduct various tests on transformers	3	2	3	1	-	-	-	-	-	-	-	-	-	3	1	-
Average		**3**	**2**	**1.8**	**1**	**-**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**3**	**1**	**-**

Semester –III																
22EE304 - Electron Devices And Circuits																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Understand overview of semiconductor devices.	1	1	1	1	1	1	3	1	-	-	1	-	-	1	1	1
CO2	Recognize the fundamentals and characteristics of BJT	2	3	3	3	2	1	2	1	1	-	1	-	-	1	1	1
CO3	Analyze the fundamentals and characteristics of FET and UJT	3	2	2	3	2	1	2	1	1	-	1	-	-	1	1	1
CO4	Design and analyze the amplifiers	2	3	2	3	3	1	2	1	1	-	1	-	-	2	2	1
CO5	Design and analyze the differential amplifiers	2	2	3	3	3	1	2	1	1	-	1	-	-	2	2	1
Average		**2**	**2.2**	**2.2**	**2.6**	**2.2**	**1**	**2.2**	**1**	**1**	**-**	**1**	**-**	**-**	**1.4**	**1**	**1**

Semester –III																
22EE305 - Signals And Systems																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	To be able to determine if a given system is linear/causal/stable	1	1	1	1	1	1	3	1	-	-	1	-	1	1	1	-
CO2	Capable of determining the frequency components present in a deterministic signal	2	3	3	3	2	1	2	1	1	-	1	-	1	1	1	-
CO3	Capable of characterizing LTI systems in the time domain and frequency domain	3	2	2	3	2	1	2	1	1	-	1	-	1	1	1	-
CO4	To be able to compute the output of an LTI system in the time and frequency domains	2	3	2	3	3	1	2	1	1	-	1	-	2	2	1	-
CO5	Capable of determining the frequency response of discrete system using Z transform	2	2	3	3	3	1	2	1	1	-	1	-	2	2	1	-
Average		**2**	**2.2**	**2.2**	**2.6**	**2.2**	**1**	**2.2**	**1**	**1**	**-**	**1**	**-**	**1.4**	**1.4**	**1**	**-**

Semester –III																
22MCIN02 - Innovation Sprints																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Identify real-world problems	-	3	-	-	-	2	1	-	2	-	-	-	-	-	2	-
CO2	Apply the challenge curation techniques to real-world problems.	-	3	-	2	-	-	-	-	2	-	-	-	-	-	2	-
CO3	Analyze the problems and generate solutions to address the challenges	-	-	3	2	-	-	-	-	2	-	-	-	-	-	2	-
CO4	Build solutions using pertotyping tools & techniques	2	-	3	-	-	-	-	1	2	-	-	-	-	-	2	-
CO5	Develop an innovation pitch to effectively communicate the idea to solve the identified problem	-	-	-	-	-	-	-	-	2	3	-	-	-	-	2	-
Average		**2**	**3**	**3**	**2**	**-**	**2**	**1**	**1**	**2**	**3**	**-**	**-**	**-**	**-**	**2**	**-**

Semester –III																
22NC301 - NCC COURSE-II																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Acquired knowledge about social and legal responsibilities.	3	1	-	-	-	-	-	-	-	-	-	-	3	1	1	-
CO2	Understand the adventure activities and verbal training on defence examinations.	3	3	2	3	-	-	-	-	-	-	-	-	3	2	1	-
CO3	Understand the technical knowledge on aero engines and map reading.	3	2	3	1	-	2	-	-	-	-	-	-	3	2	1	-
CO4	Understand the structure and control of an aircraft.	3	2	2	2	-	-	-	-	-	-	-	-	3	2	1	-
CO5	Understand and learn the importance of avionic instruments on aircraft control.	3	-	-	-	-	1	-	-	-	-	-	-	3	3	1	-
Average		**3**	**2**	**1.7**	**2**	**-**	**1.5**	**-**	**-**	**-**	**-**	**-**	**-**	**3**	**2**	**1**	**-**

Semester –III																
22EE306 - DC Machines And Transformers Laboratory																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Understand the performance characteristics of DC generators.	3	3	2	1	1	1	3	1	2	1	1	2	3	2	2	-
CO2	Obtain the load characteristics of DC compound generator.	3	3	3	3	2	2	3	1	1	2	1	1	3	2	3	-
CO3	Acquire knowledge on performance characteristics of DC shunt and series motors.	3	3	3	2	2	1	1	2	1	3	1	1	3	3	3	-
CO4	Analyze the performance characteristics of DC machines using direct and indirect methods.	3	3	3	1	1	1	2	2	1	2	2	2	3	3	2	-
CO5	Analyze the performance characteristics of transformers using direct and indirect methods.	2	3	2	3	1	1	1	3	1	2	2	2	2	3	2	-
Average		**2.8**	**3**	**2.6**	**2**	**1.4**	**1.2**	**2**	**1.8**	**1.2**	**2**	**1.4**	**1.6**	**2.8**	**2.6**	**2.4**	**-**

Semester –III																
22EE307 - Circuits And Electron Devices Laboratory																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Design analog electronic circuits using Diode	2	3	1	1	1	1	3	1	1	-	1	-	2	2	1	-
CO2	Design analog electronic circuits using BJT	2	3	3	3	2	1	3	1	1	-	1	-	2	2	1	-
CO3	Design analog electronic circuits using FET	3	2	2	3	2	1	3	1	1	-	1	-	2	2	1	-
CO4	Design Amplifiers circuits	2	3	2	3	3	1	3	1	1	-	1	-	2	2	1	-
CO5	Design Oscillator circuits	2	2	3	3	3	1	3	1	1	-	1	-	2	2	1	-
Average		**2.2**	**2.6**	**2.2**	**2.6**	**2.2**	**1**	**3**	**1**	**1**	**-**	**1**	**-**	**2**	**2**	**1**	**-**

Semester –IV																
22EE401 - Synchronous And Induction Machines																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Familiarize with construction, working principle, synchronizing techniques and performance of Synchronous Generator.	1	1	-	1	-	-	2	-	-	-	-	2	1	1	-	-
CO2	Understand the working principle, torque equation, and excitation control for Synchronous Motor.	1	1	-	1	2	-	-	-	-	-	-	1	1	2	-	-
CO3	Operate three phase Induction machine as motor and as a generator, analyze the performance of three phase induction motor	3	1	1	3	-	1	2	-	2	-	1	-	1	2	1	-
CO4	Know double field revolving theory and starting mechanisms for single-phase induction motors	1	1	1	1	1	-	-	-	-	2	-	2	1	1	-	-
CO5	Use synchronous and induction motors in practical domain with specified ratings.	1	1	2	3	-	-	-	-	-	-	2	-	1	1	1	-
Average		**1.6**	**1**	**1.3**	**1.8**	**1.5**	**1**	**2**	**-**	**2**	**2**	**1.5**	**1.7**	**1**	**1.6**	**1**	**-**

Semester –IV																
22EE402 - Measurements And Instrumentation																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Recall the fundamentals of measurement system in electrical engineering.	2	2	2	3	-	-	-	1	-	2	-	2	2	1	1	-
CO2	Describe the working principle of different measuring instruments	1	3	-	-	3	-	-	-	-	2	-	1	2	1	-	-
CO3	Choose appropriate instrument for measuring the electrical parameters	1	1	-	2	1	1	2	-	1	-	-	-	1	2	1	-
CO4	Employ the digital instruments in real time measurements.	1	1	-	1	1	-	2	2	1	-	2	2	1	3	1	-
CO5	Select an appropriate transducer for measurement of non-electrical quantities	2	2	3	1	2	2	1	-	-	1	3	-	1	2	-	-
Average		**1.4**	**1.8**	**2.5**	**1.7**	**1.4**	**1.5**	**1.7**	**1.5**	**1**	**1.7**	**2.5**	**2.5**	**1.4**	**1.8**	**1**	**-**

Semester –IV																
22EE403 - Analog And Digital Integrated Circuits																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Understand the Op-amp characteristics	2	1	-	-	-	-	-	-	-	-	-	-	2	-	-	-
-CO2	Understand the applications of Op-amp and other linear ICs.	3	2	1	1	-	-	-	-	-	-	-	-	3	-	-	-
CO3	Apply K-map and tabulation methods to simplify the switching functions	3	2	-	-	2	-	-	-	-	-	-	-	3	3	-	-
CO4	Design and implement of combinational logic circuits	3	2	-	-	2	-	-	-	-	-	-	2	3	3	1	-
CO5	Analyse and design of synchronous & asynchronous sequential logic circuits	3	2	-	-	2	-	-	-	-	-	-	2	3	3	1	-
Average		**2.8**	**1.8**	**1**	**1**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**3**	**3**	**1**	**-**

Semester –IV																
22EE4-4 - Power Generation, Transmission And Distribution System																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Explain the operation of generating stations and substations	1	2	1	-	-	2	2	1	2	2	1	3	1	2	1	-
CO2	Model the transmission lines using system parameters	2	3	3	3	3	-	1	-	-	-	1	-	2	1	-	-
CO3	Analyze the performance of different types of transmission lines	2	-	2	2	2	-	1	-	-	1	-	-	1	3	-	-
CO4	Select an appropriate insulator and cable for transmission and distribution system	2	-	-	2	-	2	1	2	-	-	-	2	1	2	1	-
CO5	Describe the substation components and grounding techniques.	1	1	1	-	2	1	2	1	2	1	2	2	1	2	1	-
Average		**1.6**	**2**	**1.7**	**2.3**	**1.7**	**1.7**	**1.4**	**1.7**	**2**	**1.3**	**1.3**	**2.3**	**1.2**	**2**	**1**	**-**

Semester –IV																
22EE405 - Power Electronics																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Choose suitable Power Semiconductor Devices for the application.	2	1	1	1	3	-	1	1	-	-	-	1	1	2	1	-
CO2	Know the operation of converters inverters and AC voltage controllers	1	-	2	1	1	-	-	-	-	-	1	1	1	1	2	-
CO3	Analyze the performance of converters and inverters	1	2	3	2	3	1	-	1	-	-	1	1	1	2	1	-
CO4	Design and analyze converter and inverter circuits	2	1	3	3	2	1	1	1	-	-	1	1	1	2	1	-
CO5	Identify suitable control techniques for the converter	1	3	2	2	3	2	1	1	-	-	1	1	1	2	1	-
Average		**1.4**	**1.7**	**2.2**	**1.8**	**2.4**	**1.3**	**1**	**1**	**-**	**-**	**1**	**1**	**1**	**1.8**	**1.2**	**-**

Semester –IV																
22MCIN03 - Design Sprints																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Understand the elements and principles of product and service design	3	-	1	-	-	-	-	-	2	-	-	-	-	-	2	-
CO2	Apply system thinking concepts in reverse engineering	2	3	-	-	-	-	-	-	2	-	-	-	-	-	2	-
CO3	Apply user research techniques to meet the UX needs of a customer and design a visual prototype	3	-	1	-	-	-	-	1	2	-	-	-	-	-	2	-
CO4	Develop prototyping models using the tools from mechanical prototyping models	-	-	3	2	3	-	-	-	2	-	-	-	-	-	2	-
CO5	Develop prototyping models using the tools from electrical and software prototyping methods	2	-	2	-	1	-	-	-	2	-	-	-	-	-	2	-
Average		**2.5**	**3**	**1.7**	**2**	**2**	**-**	**-**	**1**	**2**	**-**	**-**	**-**	**-**	**-**	**2**	**-**

Semester –IV																
22CYMC01 - Environmental Science																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	To identify about the major renewable energy systems and will investigate the environmental impact of various energy sources as well as the consequences of various pollutants.	-	1	3	-	-	3	1	1	-	-	-	1	2	-	1	-
CO2	Predict the methods to conserve energy and ways to make optimal use of the energy for the future.	-	1	3	-	-	3	1	1	-	-	-	1	2	-	1	-
Average		**-**	**1**	**3**	**-**	**-**	**3**	**1**	**1**	**-**	**-**	**-**	**1**	**2**	**-**	**1**	**-**

Semester –IV																
22EE406 - Synchronous And Induction Machines Laboratory																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Understand and Analyze the voltage regulation of a given alternator using different methodologies	3	2	1	3	1	-	2	-	-	-	2	-	3	2	1	-
CO2	Analyze the performance of a given synchronous motor under various excitation conditions	3	2	2	2	2	-	-	-	-	-	-	1	3	3	2	-
CO3	Understand the Performance characteristics of induction and synchronous machines using direct and indirect methods.	3	1	1	2	-	-	-	-	-	-	1	-	3	2	1	-
CO4	Develop the equivalent circuit and analyze the characteristics of single-phase induction motor	3	2	2	1	3	-	2	-	2	-	-	-	2	3	1	-
CO5	Analyze the losses, Starting and Speed control in AC machines.	3	1	1	1	1	-	-	-	-	2	-	2	2	3	1	-
Average		**3**	**1.6**	**1.4**	**1.8**	**1.7**	**-**	**2**	**-**	**2**	**2**	**1.5**	**1.5**	**2.6**	**2.6**	**1.2**	**-**

Semester –IV																
22EE407 - Analog And Digital Integrated Circuits Laboratory																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Study the characteristics and mathematical applications of op-amp	2	1	-	-	-	-	-	-	-	-	-	-	2	1	-	-
CO2	Design and verify wave form generator circuits and filter circuits using op-amp.	3	2	1	1	-	-	-	-	-	-	-	-	3	2	-	-
CO3	Design voltage regulator and power supply circuits using Linear ICs.	3	2	-	-	2	-	-	-	-	-	-	-	3	2	-	-
CO4	Realize the switching function using universal gates.	3	2	-	-	2	-	-	-	-	-	-	2	3	2	1	-
CO5	Realize the various types of combinational and sequential logic circuits	3	2	-	-	2	-	-	-	-	-	-	2	3	2	1	-
Average		**2.8**	**1.8**	**1**	**1**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**2.8**	**1.8**	**1**	**-**

Semester –IV																
22EN401 - Placement And Soft Skills Laboratory																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Participate in group discussion and interview confidently	-	-	-	1	-	-	-	-	2	3	-	1	-	-	1	-
CO2	Develop adequate soft skills and career skills required for the workplace	-	-	-	2	-	-	-	-	2	3	-	1	-	-	2	-
CO3	Make effective presentations on given topics	-	-	-	2	-	-	-	-	1	3	-	1	-	-	1	-
CO4	Apply their verbal ability and reasoning ability in campus interviews	-	-	-	1	-	-	-	-	2	3	-	1	-	-	2	-
Average		**-**	**-**	**-**	**1.5**	**-**	**-**	**-**	**-**	**1.7**	**3**	**-**	**1**	**-**	**-**	**1.5**	**-**

Semester –V																
22EE501 - Control Systems																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Derive the transfer function models of any electrical and mechanical systems.	2	2	2	2	2	-	-	1	-	-	1	1	2	1	1	-
CO2	Analyze the time and frequency responses of the systems.	2	2	3	3	3	1	1	-	-	-	1	1	1	2	1	-
CO3	Analyze the stability of closed loop control systems.	2	2	3	3	3	1	1	-	-	-	1	1	1	2	1	-
CO4	Construct the root locus plot and analyze system stability.	2	2	3	3	3	-	1	1	-	-	1	1	1	2	1	-
CO5	Design the compensators using conventional techniques.	2	2	3	3	3	-	1	1	-	-	1	1	2	2	1	-
Average		**2**	**2**	**2.8**	**2.8**	**2.8**	**1**	**1**	**1**	**-**	**-**	**1**	**1**	**1.4**	**1.8**	**1**	**-**

Semester –V																
22EE502 - Microprocessor And Microcontroller																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Understand any other types of modern microprocessor and microcontroller	2	2	2	2	2	-	1	1	1	-	1	1	1	1	1	-
CO2	Understand the architecture of Microprocessor and Microcontroller	2	2	2	2	2	-	1	1	1	-	1	1	1	1	1	-
CO3	Design and interface communications between digital systems	2	3	3	3	3	-	1	1	1	-	1	1	1	1	1	-
CO4	Apply the digital concepts to measure and control simple electrical systems	2	3	3	3	3	-	1	1	1	-	1	1	2	2	1	-
CO5	Design a microcontroller based electrical control system.	2	3	3	3	3	-	1	1	1	-	1	1	2	2	1	-
Average		**2**	**2.6**	**2.6**	**2.6**	**2.6**	**-**	**1**	**1**	**1**	**-**	**1**	**1**	**1.4**	**1.4**	**1**	**-**

Semester –V																
22EE503 - Electrical Machine Design																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Classify the materials used for the construction of electrical machines and be able to calculate the MMF in magneticparts of rotating machines.	3	3	3	2	2	1	1	1	1	1	1	1	3	2	1	-
CO2	Familiarize the importance of magnetic ,thermal and electrical loading of AC and DC Machines.	3	3	3	3	3	1	1	2	1	2	1	1	3	2	2	-
CO3	Design and Analyze Armature and Field Systems for DC Machines.	3	3	3	3	3	1	1	2	2	2	1	1	3	3	3	-
CO4	Design and Analyze core, windings and cooling system of transformers.	3	3	3	3	3	1	1	2	2	2	1	1	3	2	2	-
CO5	Design and analyze Stator and rotor of Induction Machines and Synchronous machines.	3	3	3	3	3	1	1	2	2	2	1	1	3	3	2	-
Average		**3**	**3**	**3**	**2.8**	**2.8**	**1**	**1**	**1.8**	**2**	**2**	**1**	**1**	**3**	**2.4**	**2**	**-**

Semester –V																
22EE504 - Electrical Drives And Control																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Understand the characteristics of dc motors and induction motors.	3	1	3	-	-	2	1	1	-	-	1	3	2	3	3	-
CO2	Summarize the operation of chopper fed DC drives.	3	3	1	3	-	1	1	1	-	-	-	3	3	2	3	-
CO3	Understand the principles of speed-control of dc motors and induction motors.	3	3	3	3	3	1	1	1	-	-	-	3	2	3	3	-
CO4	Identify suitable power electronic converters used for dc motor and induction motor speed control.	1	3	3	2	3	1	1	1	-	-	-	2	2	3	2	-
CO5	Analyze the SRM and BLDC motor drive control	3	3	3	3	3	1	1	1	-	-	1	3	3	3	3	-
Average		**2.6**	**2.6**	**2.6**	**2.7**	**9**	**1.2**	**1**	**1**	**-**	**-**	**1**	**1.2**	**2.8**	**2.4**	**2.8**	**-**

Semester –V																
22EE505 - Power System Analysis And Stability																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Develop the single line diagram for the power system.	2	1	3	1	2	-	1	-	-	1	1	-	3	2	1	-
CO2	Perform and analyze load flow computations using bus admittance matrix	2	2	3	2	1	-	1	1	-	1	1	1	2	3	1	-
CO3	Perform and analyze balanced fault using bus impedance matrix	2	2	3	2	1	-	1	1	-	1	1	1	2	3	1	-
CO4	Develop computational models for unsymmetrical fault analysis in power systems	2	2	3	2	2	-	1	1	-	1	2	1	2	3	1	-
CO5	Demonstrate the transient stability studies.	2	2	3	2	2	-	1	2	-	1	1	1	2	3	1	-
Average		**2**	**1.8**	**3**	**1.8**	**1.6**	**-**	**1**	**1.2**	**-**	**1**	**1.2**	**1**	**2.2**	**2.8**	**1**	**-**

Semester –V																
22EE506 - Solar And Wind Energy Conversion Systems																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Understand the physics behind the wind and solar power generation	1	1	1	1	1	1	1	1	-	1	1	1	1	1	1	-
CO2	Implementation of optimal extraction techniques in renewable power generation	1	1	1	1	1	1	1	1	-	1	1	1	1	1	1	-
CO3	Apply power electronics to renewable power optimization	1	1	1	1	1	1	1	1	-	1	1	1	1	1	1	-
CO4	Understand integration techniques used, power quality issues and their mitigation	1	1	1	1	1	1	1	1	-	1	1	1	1	1	1	-
CO5	Device methods to create an approximate energy conversion systems.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-
Average		**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**-**

Semester –V																
22EE507 - Power Electronics And Energy Systems Laboratory																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Analyze the characteristics of MOSFET, SCR and IGBT.	1	2	-	3	1	2	-	1	1	-	1	1	1	2	1	-
CO2	Examine the performance of DC-DC Converters and inviters.	2	-	3	1	-	1	2	2	-	1	1	2	1	2	1	-
CO3	Design and control of inverters with different modulations.	2	1	2	-	2	-	2	-	2	2	-	1	1	3	-	-
CO4	Analyze the performance of power converters with simulation studies	1	-	1	3	-	1	-	1	-	-	2	-	1	3	1	-
CO5	Demonstrate the operation of Solar and wind energy conversation system	2	2	-	-	2	-	3	1	2	2	3	2	1	2	2	-
Average		**1.6**	**1**	**1.2**	**1.4**	**1**	**8**	**1.4**	**1**	**1**	**1**	**1.4**	**1.2**	**1**	**2.4**	**1**	**-**

Semester –V																
22EE508 - Microprocessor And Microcontroller Laboratory																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Write coding to implement different types of algorithms	1	1	1	1	1	-	1	1	1	1	-	1	2	2	-	-
CO2	Design and implement simple controllers	1	1	1	1	1	1	1	1	1	1	1	1	3	2	-	-
CO3	Use simulators and emulators for debugging and verifying odes	1	1	1	1	1	-	1	1	1	1	-	1	3	2	-	-
CO4	Write efficient codes using interrupts for time critical applications	1	1	1	1	1	-	1	1	1	1	1	1	3	2	1	-
CO5	Interface any application module to microprocessor/microcontroller.	1	1	1	1	1	1	1	1	1	1	1	1	3	2	1	-
Average		**1**	**1**	**1**	**1**	**1**	**4**	**1**	**1**	**1**	**1**	**6**	**1**	**2.8**	**2**	**4**	**-**

Semester –V																
22EE509 - Control And Instrumentation Laboratory																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Measure power in AC circuits	3	3	3	3	2	1	3	1	2	-	1	-	2	2	1	-
CO2	Calculate R,L,C using various bridges.	3	3	3	2	2	1	1	2	1	-	1	-	2	2	1	-
CO3	Design of controllers and compensators	3	3	3	1	1	1	2	2	1	-	1	-	2	2	1	-
CO4	Study the position control system	2	3	2	3	1	1	1	3	1	-	1	-	2	2	1	-
CO5	Determine the transfer function of AC and DC motors.	3	2	3	3	3	1	1	1	1	-	1	-	2	2	1	-
Average		**2.8**	**2.8**	**2.8**	**2.4**	**1.8**	**1**	**1.6**	**1.8**	**1.2**	**-**	**1**	**-**	**2**	**2**	**1**	**-**

Semester –VI																
22EE601- Mini Project																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Initiate the students to come out with innovative ideas for various applications.	3	3	3	3	2	3	3	1	3	-	2	-	3	3	3	-
CO2	Create an environment to convert the ideas into design of prototype for useful industrial, agricultural and social applications.	3	3	3	3	2	3	3	-	3	-	1	-	3	3	-	-
CO3	Familiarize the feasibility study and manage activities to complete task in specified duration.	2	2	2	2	2	1	1	1	3	1	2	3	3	3	-	-
CO4	Assign and undertake tasks in a team as per team discussion.	3	2	2	1	1	1	2	3	3	3	-	3	3	3	-	-
CO5	Do presentation and write technical reports for effective communication within and outside the team.	-	-	-	-	2	2	-	1	3	3	-	2	3	-	3	-
Average		**2.7**	**2.5**	**2.5**	**2.2**	**1.8**	**2**	**2.2**	**1.5**	**3**	**2.3**	**1.2**	**2.7**	**3**	**3**		**-**

Semester –VII																
22EE701 - Power System Protection And Switch Gear																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Illustrate the concepts and applications of protective relays.	2	1	2	2	1	2	3	2	1	2	3	2	2	2	1	-
CO2	Discuss about different types of circuit breakers	1	1	3	2	2	1	3	2	2	2	2	2	3	3	2	-
CO3	Assess the protection schemes of various power components.	2	2	2	3	1	2	3	3	1	2	3	1	2	2	1	-
CO4	Develop the knowledge on static relays.	2	1	1	2	3	1	3	2	3	2	2	2	2	3	2	-
CO5	Analyze the numerical protection schemes.	1	1	2	1	2	2	3	3	2	3	2	1	2	2	1	-
Average		**1.6**	**1.2**	**2**	**2**	**1.8**	**1.6**	**3**	**2.4**	**1.8**	**2.2**	**2.4**	**1.6**	**2.2**	**2.4**	**1.4**	**-**

Semester –VII																
22EE702 - Smart Grid																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Describe the Smart Grid modernization process and its present developments.	1	-	-	3	1	2	1	-	1	2	1	1	1	2	1	-
CO2	Select the suitable communication networks for smart grid applications	2	2	3	1	-	1	2	1	-	-	1	2	2	1	1	-
CO3	Use a suitable smart device for Smart Grid operation	1	3	2	-	2	-	2	2	1	2	-	-	1	3	-	-
CO4	Illustrate a smart transmission and distribution system using PMU, WAM and SCADA	2	1	2	1	3	1	3	-	-	-	2	2	1	2	-	-
CO5	Explain the need of high end computing and big data analytics in smart grid	1	-	-	2	1	2	-	1	2	1	-	1	2	2	1	-
Average		**1.4**	**2**	**2.3**	**1.7**	**1.7**	**1.5**	**2**	**1.3**	**1.3**	**1.7**	**1.7**	**1.5**	**1.4**	**2.4**	**1**	**-**

Semester –VII																
22EE703 - Industrial Management And Economics																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Understand the concepts of management	-	-	1	-	-	2	1	-	3	2	3	2	1	1	1	-
CO2	Remember various types of management.	-	-	1	-	-	2	1	-	3	2	3	2	1	1	1	-
CO3	Analyze the Indian economics	-	-	-	1	-	1	-	2	-	-	-	1	1	-	1	-
CO4	Create an organization efficiently for its u liftment	-	-	1	-	-	2	-	1	3	2	3	2	1	1	1	-
CO5	Apply marketing concept to any organization to earn more profit.	-	-	1	-	-	2	-	1	3	2	3	2	1	1	1	-
Average		**-**	**-**	**1**	**1**	**-**	**1.8**	**1**	**1.3**	**3**	**2**	**3**	**1.8**	**1**	**1**	**1**	**-**

Semester –VII																
22EE704 - High Voltage Engineering																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	List the various types of over voltages and its effect on power system.	3	-	2	-	-	-	1	-	-	-	-	-	2	1	-	-
CO2	Describe generation of various over voltages in HV testing laboratories.	3	2	2	1	-	1	-	-	-	-	-	-	3	1	-	-
CO3	Use appropriate procedure for measurement of high voltage and high current DC, AC and impulse quantities.	3	2	3	-	1	-	-	-	-	-	-	-	3	1	-	-
CO4	Analyze high voltage breakdown phenomena in insulating materials.	3	-	2	-	1	-	1	-	-	-	-	-	2	2	-	-
CO5	Comprehend the test procedures as per the Indian standards.	3	2	3	2	1	1	2	-	-	-	-	-	3	3	2	-
Average		**3**	**2**	**2.4**	**1.5**	**1**	**1**	**1.3**	**-**	**-**	**-**	**-**	**-**	**2.6**	**1.6**	**2**	**-**

Semester –VII																
22EE705 - Power Systems Laboratory																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Formulate power system network matrices.	1	2	2	1	1	1	2	1	1	1	2	2	2	2	1	-
CO2	Recall knowledge about power flow analysis.	1	2	1	1	1	1	1	1	1	1	2	2	3	3	2	-
CO3	Analyze power system stability problems.	1	2	2	2	1	1	1	1	2	2	1	2	2	3	1	-
CO4	Formulate and solve power system operational problems.	1	2	2	2	1	1	2	1	1	2	2	2	3	3	2	-
CO5	Evaluate system load to various generators in the system economically.	1	2	2	2	1	1	2	1	1	2	2	2	2	3	1	-
Average		**1**	**2**	**1.8**	**1.6**	**1**	**1**	**1.6**	**1**	**1.2**	**1.6**	**1.8**	**2**	**2.4**	**2.8**	**1.4**	**-**

Semester –VII																
22EE706 - Electrical Drives And Control Laboratory																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Set up control strategies to synthesize the voltages in dc and ac motor drives	1	1	2	2	2	1	1	-	-	-	1	1	2	1	2	-
CO2	Develop testing and experimental procedures applying basic knowledge in electronics, electrical circuit analysis, electrical machines, microprocessors, and programmable logic controllers	1	2	2	2	2	1	1	-	-	-	1	1	2	2	2	-
CO3	Use standard methods to determine accurate modelling /simulation parameters for various general-purpose electrical machines and power electronics devices required for designing a system and solve drives related problems	1	2	2	2	2	1	1	-	-	-	1	1	2	3	2	-
CO4	Combine the use of computer-based simulation tools relevant to electrical Drives with practical laboratory experimentation.	-	1	2	2	2	1	1	-	-	-	1	1	2	3	2	-
CO5	Design VSI/CSI for induction motor using any simulation software.	-	1	2	2	2	1	1	-	-	-	1	1	2	3	2	-
Average		**6**	**1.4**	**2**	**2**	**2**	**1**	**1**	**-**	**-**	**-**	**1**	**1**	**2**	**2.4**	**2**	**-**

Semester –VIII																
22EE801 - Project Work																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
CO1	Ability to identify, formulate, design, interpret, analyze and provide solutions to complex engineering and societal issues by applying knowledge gained on basics of science and Engineering	3	3	3	3	-	-	-	-	-	-	-	-	3	3	3	-
CO2	Ability to choose, conduct and demonstrate a sound technical knowledge of their selected project topics in the field of power components, protection, high voltage, electronics, process automation, power electronics and drives, instrumentation and control by exploring suitable engineering and IT tools.	-	-	-	-	3	3	-	-	-	-	-	-	3	-	-	-
CO3	Ability to understand, formulate and propose new learning algorithms to solve engineering and societal problems of moderate complexity through multidisciplinary projects understanding commitment	-	-	-	-	-	-	3	-	3	-	-	-	-	-	3	-

	towards sustainable development.																
CO4	Ability to demonstrate, prepare reports, communicate and work in a team as a member/leader by adhering to ethical responsibilities	-	-	-	-	-	-	-	3	3	3	3	3	-	-	3	-
CO5	Ability to acknowledge the value of continuing education for oneself and to stay up with technology advancements.	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	-
Average		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	-