

Government College of Engineering, Salem - 11
Department of Electrical and Electronics Engineering

COs - POs and PSO Mapping

Course Articulation Matrix – 18 Regulation

Semester – I																
18EN101 - Professional English																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Read and summarize the main ideas, key details and inferred meanings from a passage.	-	1	-	3	-	1	-	1	2	3	1	2	-	-	1
2	Internalize the grammar items such as prepositions, articles, tenses, verbs, pronouns, and adverbs adjectives through contexts and apply them to spot	-	2	-	2	-	-	-	1	1	3	2	3	-	-	1
3	Develop the ability to classify, check information and prepare reports.	-	1	-	1	-	1	-	1	2	3	1	2	-	-	2
4	Apply the academic and functional writing skills in new contexts.	-	1	-	2	-	1	-	1		3	1	2	-	-	1
5	Interpret pictorial representation of data and statistic.	-	2	-	3	-	-	-	1	1	3	1	3	-	-	1
Average		-	1.4	-	2.2	-	1	-	1	1.5	3	1.2	2.4	-	-	1.2

Semester – I																
18MA102 - Matrices, Calculus and Differential Equations																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Learn the fundamental knowledge of Matrix theory.	3	2	2	2	1	1	2	1	1	1	1	1	2	-	-
2	Familiar with the concept of the differentiation and integration and its applications.	3	2	2	2	1	1	2	1	2	1	1	2	2	-	-
3	Acquire skills in applications of Vector Calculus.	3	2	2	2	1	1	2	1	1	1	1	2	2	-	-
Average		3	2	2	2	1	1	2	1	1.3	1	1	1.6	2	-	-

Semester – I																
18CY101 - Chemistry																
		Program Outcomes												Program Specific Outcomes		
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Understand in-depth knowledge of atomic and molecular orbitals based chemical aspects	3	3	-	-	-	-	-	-	2	-	-	-	2	-	-
2	Realize the nature of periodic properties of elements and the knowledge of acids and bases.	3	3	-	-	-	-	-	-	2	-	-	-	2	-	-
3	Grasp the knowledge of 3D structural aspects of organic molecules and chemical reactions that are used in the synthesis of organic molecules.	3	3	-	-	-	-	-	-	-	2	-	-	1	-	-
4	Substantiate the various processes involved in thermodynamic considerations and its involvement in electrochemical aspects.	3	3	-	-	-	-	-	-	-	-	-	-	2	-	1
5	Aware of spectroscopic techniques in the field of molecular identification of materials.	3	3	-	-	2	-	-	-	-	2	-	-	2	-	2
Average		3	3	-	-	2	-	-	-	2	2	-	-	1.8	-	1.5

Semester – I																
18CS101 - Fundamentals of Problem Solving and C Programming																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Formulate and apply logic to solve basic problems	3	3	3	3	3	2	2	1	1	1	3	3	3	-	-
2	Write, compile and debug programs in C language	3	3	3	3	3	2	2	1	1	1	3	3	2	-	-
3	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	-	-
4	Solve simple scientific and statistical problems using functions and pointers	3	3	3	3	3	2	2	1	1	1	3	3	2	-	-
5	Write programs related to structures and unions for simple applications.	3	3	3	3	3	2	2	1	1	1	3	3	1	-	-
Average		3	3	3	3	3	2	2	1	1	1	3	3	1.8	-	-

Semester – I

18EN102 - Professional English Laboratory

		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Infer, interpret and correlate routine, classroom-related conversation.	-	3	-	3	-	1	-	1	2	3	1	2	-	-	1
2	Use a range of common vocabulary and context based idioms.	-	2	-	2	-	-	-	1	1	3	2	3	-	-	1
3	Comprehend native speakers when they speak quickly to one another, although the student might still have trouble.	-	1	-	1	-	1	-	1	2	3	1	2	-	-	1
4	Identify the most important words in a story/article.	-	1	-	2	-	1	-	1	-	3	1	2	-	-	2
5	Summarize the main ideas, key details, and inferred meanings from listening passages of up to five minutes.	-	2	-	3	-	-	-	1	1	3	1	3	-	-	1
6	Vocalize words without the aid of pictures	-	1	-	1	-	1	-	2	-	3	1	3	-	-	1
7	Make effective self-introductions.	-	2	-	1	-	-	-	-	-	3	2	3	-	-	2
8	Study options, compare and contrasts the options.	-	2	-	2	-	1	-	-	1	3	-	2	-	-	1
9	Exercise a choice, justify it by giving examples and illustrations.	-	1	-	1	-	2	-	1	2	3	-	3	-	-	2
10	Construct a situation and to participate in conversations	-	3	-	1	-	-	-	-	3	3	1	3	-	-	1
Average		-	1.8	-	1.7	-	1.1	-	1.1	1.7	3	1.2	2.6	-	-	1.3

Semester – I

18CS102 - Computer Practice Laboratory

		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Demonstrate the basic mechanics of Word documents and working knowledge of mail merge.	3	3	3	3	3	2	2	1	1	1	3	3	1	-	-
2	Demonstrate the use of basic functions and formulas in Spread sheet.	3	3	3	3	3	2	2	1	1	1	3	3	1	-	-
3	Apply good programming methods for program development.	3	3	3	3	3	2	2	1	1	1	3	3	3	-	-
4	Implement C programs for simple applications.	3	3	3	3	3	2	2	1	1	1	3	3	3	-	-
Average		3	3	3	3	3	2	2	1	1	1	3	3	2	-	-

Semester – I																
18ME104 - Workshop Manufacturing Practice																
		Program Outcomes												Program Specific Outcomes		
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Prepare fitting of metal and wooden pieces using simple fitting and carpentry tools manually.	2	1	2	-	-	-	-	-	-	-	1	-	2	1	1
2	Prepare simple lap, butt and tee joints using arc welding equipment.	1	-	2	-	-	-	2	-	-	-	-	-	2	1	1
3	Prepare green sand moulding.	2	1	2	-	-	-	2	-	-	-	-	-	1	1	1
4	Prepare sheet metal components.	1	-	1	-	-	-	2	-	-	-	-	-	1	1	1
5	Prepare simple components using lathe and drilling machine.	1	1	1	-	-	-	1	-	-	-	-	-	1	1	1
Average		1.4	1	1.7	-	-	-	1.7	-	-	-	1	-	1.4	1	1

Semester II

18MA204 - Fourier Series and Transforms

		Program Outcomes												Program Specific Outcomes			
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	
Course Outcomes																	
1	Acquire the knowledge about Fourier series.	3	3	2	2	2	1	1	1	1	2	1	2	2	-	-	
2	Learn the techniques of solving boundary value problems	3	3	2	2	2	1	1	1	1	2	1	1	2	-	-	
3	Familiar with the transform techniques.	3	3	2	2	2	1	1	1	1	2	1	2	2	-	-	
Average		3	3	2	2	2	1	1	1	1	2	1	1.6	2	-	-	

Semester II																
18PH202 - Physics-Wave & 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
1	Understand Simple harmonic oscillation and propagation of waves.	3	3	1	3	3	2	-	-	1	-	3	2	3	-	-
2	Apply matrix method to analyse system of reflecting and refracting surfaces.	3	2	1	2	3	1	2	-	2	-	3	1	2	1	-
3	Know various experimental techniques in wave optics.	2	3	1	3	2	2	1	-	2	-	2	1	2	1	-
4	Understand the concept of laser and its applications.	3	2	1	3	3	1	1	-	2	-	3	1	3	1	1
5	Gain knowledge in the basics of quantum mechanics.	3	3	1	2	3	1	1	-	2	-	3	1	3	-	-
Average		2.8	2.6	1	2.6	2.8	1.4	1.2	-	1.8	-	2.8	1.2	2.6	1	1

Semester II																
18ME101 - 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
1	Understand the conventions and the methods of engineering drawing.	2	1	-	-	2	-	-	-	-	1	-	-	1	1	2
2	Understand the fundamental concepts of theory of projection.	2	1	-	-	2	-	-	-	-	-	-	-	1	2	1
3	Understand the development of different surfaces.	3	2	-	2	2	-	-	-	-	-	-	1	2	1	1
4	Develop the relationships between 2D and 3D environments.	2	2	-	1	1	-	-	-	-	2	-	1	1	2	1
5	Demonstrate computer aided drafting.	2	2	-	1	1	-	-	-	-	1	-	2	2	1	3
Average		2.2	1.6	-	1.3	1.6	-	-	-	-	1.3	-	1.3	1.4	1.4	1.6

Semester II																
18PH103 - Physics Laboratory																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Handle different measuring instruments and to measure different parameters.	3	3	-	2	3	1	1	-	3	2	3	3	1	1	1
2	Calculate the important parameters and to arrive at the final result based on the experimental measurements.	3	3	-	2	3	1	1	-	3	2	3	3	3	1	-
Average		3	3	-	2	3	1	1	-	3	2	3	3	2	1	1

Semester II																
18CS102 - Chemistry Laboratory																
		Program Outcomes												Program Specific Outcomes		
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	To know the applicability of the practical skill gained in various fields.	3	3	1	-	-	-	-	-	-	-	-	-	2	-	-
2	To know the composition of brass quantitatively and the molecular weight of polymers.	3	3	1	-	-	-	-	-	-	-	-	-	-	-	1
3	To understand the principle and applications of conductometric titrations, spectrometer and potentiometric titrations	3	3	1	-	-	-	-	-	-	-	-	-	2	-	-
Average		3	3	1	-	-	-	-	-	-	-	-	-	2	-	1

Semester II																
18EN103 - Professional Communication Laboratory																
		Program Outcomes												Program Specific Outcomes		
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Read short passages fluently, avoiding mispronunciation, substitution, omission and transposition of word-pairs.	-	2	-	-	-	1	-	2	2	3	2	2	-	-	1
2	Vocalize words without the aid of pictures.	1	1	-	2	-	-	-	-	1	3	1	3	-	-	2
3	Develop a well-paced, expressive style of reading.	-	3	-	2	-	1	-	-	2	3	-	2	-	-	1
4	Make effective oral presentations on technical and general contexts.	-	2	-	1	-	1	-	1	-	3	2	3	-	-	2
5	Describe a process with coherence and cohesion.	-	2	-	2	-	-	-	1	1	3	1	3	-	-	1
Average		1	2	-	1.4	-	1	-	1.3	1.2	3	1.2	2.6	-	-	1.4

Semester III																
18MA302 - 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
1	Learn about statistical averages and fitting the curves by Least Square Method	3	3	1	2	2	1	1	2	2	1	2	2	3	-	-
2	Acquire the techniques of interpolation	3	3	1	1	1	1	1	1	1	1	1	1	3	-	-
3	Familiar with the numerical differentiation and intergration	3	3	1	2	1	1	1	2	2	1	2	2	3	-	-
4	Solve the initial value problems for ordinary differential equations	3	3	2	2	1	1	1	2	2	1	1	1	3	-	-
5	Find the numerical solutions of partial differential equation by using Finite difference method	3	3	2	2	2	1	1	1	1	1	1	1	3	-	-
Average		3	3	1.4	1.8	1.4	1	1	1.6	1.6	1	1.4	1.4	3	-	-

Semester III																
18EE301 - Electric Circuit Analysis																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Understand the basic concepts of circuits elements, circuits laws and network reduction technique	3	3	1	-	2	-	1	-	-	-	-	-	3	2	-
2	Solve the electrical network using mesh, nodal analysis and applying network theorems.	2	3	1	2	-	-	1	-	-	-	-	-	3	2	-
3	Understand the resonance in series and parallel circuits	3	1	2	-	-	-	1	-	-	-	-	-	2	1	-
4	Analysis the coupled circuits	3	1	2	-	-	-	1	-	-	-	-	-	2	1	-
5	Analysis the transient response for DC input and AC sinusoidal input	1	3	2	-	3	-	1	-	-	-	-	-	2	2	-
Average		2.4	2.2	1.6	2	1	-	1	-	-	-	-	-	2.4	1.6	-

Semester III																
18EE302 - Electromagnetic Fields																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Understand the basic mathematical concepts related to electromagnetic vector fields	3	3	2	2	2	1	1	1	1	1	1	1	3	-	-
2	Understand the basic concepts about electrostatic fields, electrical potentials, energy density and their applications.	1	3	2	2	2	1	1	1	1	1	1	1	3	-	-
3	Apply knowledge in magneto static fields, magnetic flux density, vector potential and its applications.	1	3	2	2	2	1	1	1	1	1	1	1	3	2	2
4	Understand the different methods of emf generation and Maxwell's equation	1	1	3	3	2	2	1	1	1	1	1	1	-	2	-
5	Apply knowledge in concepts of electromagnetic waves and characterizing parameters.	1	1	1	3	3	2	2	1	1	1	1	1	3	2	2
6	Understand and compute Electromagnetic fields and apply them for design and analysis of electrical equipment and systems	1	1	3	2	2	2	1	1	1	1	1	1	1	3	-
Average		1.3	2	2.1	2.3	2.1	1.5	1.6	1	1	1	1	1	2.1	1.5	2

Semester III																
18EE303 - DC Machines and Transforms																
		Program Outcomes												Program Specific Outcomes		
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Understand the concepts of electromechanical energy conversation principles	3	2	2	1	1	1	3	1	1	1	1	2	3	1	1
2	Understand the basic concepts of DC machines and transforms	3	2	2	2	1	2	3	1	1	2	1	2	2	2	1
3	Evaluate the performance characteristics of DC machines and transformers	1	2	2	2	2	1	1	1	1	3	1	1	3	2	1
4	Conduct various tests on DC machines	2	2	2	2	1	1	2	2	1	2	2	2	2	3	1
5	Apply the concepts of transformers for testing	2	2	2	2	1	1	2	3	1	2	2	2	2	3	1
Average		2.2	2	2	1.8	1.2	1.2	2.2	1.6	1	2	1.4	1.8	2.4	2.2	1

Semester III																
18EE304 - 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
1	Understand overview of power semiconductor switches.	1	1	1	1	1	1	3	1	1	1	1	-	2	1	1
2	Analysis the fundamentals and characteristics of BJT and UJT.	2	3	3	3	2	1	2	1	1	1	1	-	3	3	1
3	Analysis the fundamental and characteristics of FET and MOSFET	3	2	2	3	2	1	2	1	1	1	1	-	3	3	1
4	Design and analyze the amplifiers	2	3	2	3	3	1	2	1	1	1	1	-	3	3	1
5	Design and analyse the differential amplifiers	2	2	3	3	3	1	2	1	1	1	1	-	3	3	1
6	Design and analyse the oscillator circuits	2	3	3	3	2	1	2	1	1	1	1	-	3	3	1
Average		2	2.3	2.3	2.6	2.1	1	2	1	1	1	1	-	3	2.6	1

Semester III																
18EE305 - DC Machines and Transforms Laboratory																
		Program Outcomes												Program Specific Outcomes		
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Obtain the performance characteristics of DC generators.	3	3	2	1	1	1	3	1	2	1	1	2	3	2	-
2	Obtain the load characteristics of DC compound generator	3	3	3	3	2	2	3	1	1	2	1	1	3	2	-
3	Acquire knowledge on performance characteristics of DC shunt and series motors	3	3	3	2	2	1	1	2	1	3	1	1	3	2	-
4	Acquire knowledge on performance characteristics of DC machines using direct and indirect methods	3	3	3	1	1	1	2	2	1	2	2	2	3	2	-
5	Acquire knowledge on performance characteristics of transformers using direct and indirect methods	2	3	2	3	1	1	1	3	1	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	3	2	-

Semester III																
18EE306 - Electronic Devices and Circuits Laboratory																
		Program Outcomes												Program Specific Outcomes		
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	To design electronic circuits using Diode	2	3	1	1	1	1	3	1	1	1	1	-	2	1	1
2	To design analog electronic circuits using BJT	2	3	3	3	2	1	3	1	1	1	1	-	3	3	1
3	To design analog electronic circuits using MOSFET	3	2	2	3	2	1	3	1	1	1	1	-	3	3	1
4	To design analog electronic circuits using FET	2	3	2	3	3	1	3	1	1	1	1	-	3	3	1
5	To design oscillator circuits	2	2	3	3	3	1	3	1	1	1	1	-	3	3	1
6	To design Wave generation circuits	2	3	3	3	2	1	2	1	1	1	1	-	3	3	1
Average		2.1	2.6	2.3	2.6	2.1	1	2.8	1	1	1	1	-	2.8	2.6	1

Semester IV

18EE401 - Signals and Systems

		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Determine if a given system is linear/casual/stable	2	3	1	1	1	1	2	1	1	1	1	-	2	1	1
2	Capable of determining the frequency components present in a deterministic signal	2	3	1	1	2	1	2	1	1	1	1	-	2	3	1
3	Capable of characterzing LTI systems in the time domain and frequency domain	2	3	2	3	2	1	3	1	1	1	1	-	2	3	1
4	Compute the output of an LTI system in the time and frequency domains	2	3	2	3	3	1	3	1	1	1	1	-	2	3	1
5	Capable of determining the frequency response of discrete system using Z transforms	2	3	3	3	3	1	3	1	1	1	1	-	2	3	1
6	Understand the concepts and importance of sampling	2	3	3	3	2	1	2	1	1	1	1	-	2	3	1
Average		2	3	2	2.3	2.1	1	2	1	1	1	1	-	2	2.6	1

Semester IV																
18EE402 - 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
1	Familiarize with construction, working principle, synchronizing techniques and performance of Synchronous Generator	-	1	-	-	-	-	2	-	-	-	-	2	1	3	-
2	Understand the working principle, torque equation, and excitation control for Synchronous Motor	-	1	-	-	2	-	-	-	-	-	-	1	1	2	-
3	Operator three phase Induction machine as motor as a generator	3	-	-	-	-	-	2	-	-	-	1	-	1	3	1
4	Analyze the performance of three phase induction motor with testing	2	-	-	3	-	1	-	-	2	-	-	-	1	2	1
5	Know double field revolving theory and starting mechanisms for single-phase induction motors	-	-	-	-	1	-	-	-	-	2	-	2	2	2	1
6	Use synchronous and induction motors in practical domain with specified ratings	-	-	2	3	-	-	-	-	-	-	2	-	-	3	2
Average		2.5	1	2	3	1.5	1	2	-	2	2	1.5	1.6	1.2	2.5	1.2

Semester IV																
18EE403 - 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
1	Measure current and voltage in AC and DC circuits	1	2	-	2	1	-	2	1	1	-	1	1	2	2	1
2	Measure Power and energy AC and DC circuits and magnetic measurements	1	2	-	2	1	-	2	1	1	-	1	1	3	2	2
3	Calculate R,L,C using various bridges	1	2	-	2	1	-	2	1	1	-	1	1	2	2	1
4	Measure non-electrical quantities	1	2	-	2	1	-	2	1	1	-	1	1	3	2	2
5	Share knowledge on electrical instruments and measurements	2	2	2	3	2	2	1	2	1	3	3	3	3	2	1
6	Teach the Instruments techniques and its applications.	2	2	2	3	2	2	1	2	1	3	3	3	2	2	2
Average		1.3	2	2	2.3	1.3	2	1.6	1.3	1	3	1.6	1.6	2.5	2	1.5

Semester IV																	
18EE404 - Analog and Digital Integrated Circuits																	
Course Outcomes		Program Outcomes												Program Specific Outcomes			
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	
1	Explain the OP-AMP characteristics	2	1	-	-	-	-	-	-	-	-	-	-	-	2	-	-
2	Understand the application of OP-AMP and other linear ICs	3	2	1	1	-	-	-	-	-	-	-	-	-	3	1	-
3	Utilize K-map and Tabulation methods to simplify the switching functions	3	2	-	-	2	-	-	-	-	-	-	-	-	3	2	-
4	Design and implement of combinational logic circuits	3	2	-	-	2	-	-	-	-	-	-	-	-	3	2	-
5	Analysis and design of synchronous sequential logic circuits	3	2	-	-	2	-	-	-	-	-	-	-	-	3	2	-
6	Analysis and design of asynchronous sequential logic circuits	3	2	-	-	2	-	-	-	-	-	-	-	-	3	2	-
Average		2.8	1.8	1	1	2	-	-	-	-	-	-	-	-	2.8	1.8	-

Semester IV																
18ME408 - Engineering Mechanics																
		Program Outcomes												Program Specific Outcomes		
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Illustrate the vectorial and scalar representation of forces and moments	3	2	1	1	1	-	-	-	-	2	-	-	2	-	-
2	Analysis the rigid body in equilibrium	2	1	1	-	1	-	-	-	-	2	-	-	2	1	-
3	Evaluate the properties of surfaces and solids	2	1	1	-	-	-	-	-	-	-	-	-	3	2	-
4	Determine the frictional and the effects by the laws of friction	1	1	1	1	-	-	-	-	-	-	-	-	3	2	-
5	Apply fundamental concepts of kinematics and kinetics of practices to the analysis of simple, practical problems	2	2	1	1	-	-	-	-	-	-	-	-	2	2	-
Average		2	1.4	1	1	1	-	-	-	-	2	-	-	2.4	1.4	-

Semester IV																
18EE405 - 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
1	Analyze the voltage regulation of a given alternator using different methodologies	-	2	-	-	1	-	2	-	-	-	2	-	2	3	-
2	Analyze the performance of a given synchronous motor under various excitation Conditions	-	2	-	-	2	-	-	-	-	-	-	1	1	3	1
3	Analyze the characteristics of a induction motor various load conditions	3	-	-	2	-	-	-	-	-	-	1	-	2	2	1
4	Analyze the load sharing capability of given alternators	2	-	-		3	-	2	-	2	-	-	-	1	2	1
5	Develop the equivalent circuit and analyse the characteristics of single-phase induction motor	-	-	-	1	1	-	-	-	-	2	-	2	1	3	-
6	Do loss analysis in AC machines	-	2	2	3	-	-	-	-	-	-	2	-	1	2	1
Average		0.8	2	2	1	1.6	-	2	-	2	2	0.8	1.5	1.3	2.5	1

Semester IV																
18EE406 - Measurements And Instruments Laboratory																
		Program Outcomes												Program Specific Outcomes		
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Explain analog instruments	1	2	-	2	1	-	2	1	1	-	1	1	2	-	-
2	Measure power in AC and DC circuits	1	2	-	2	2	-	2	1	1	-	2	1	2	1	-
3	Calculate R,L,C using various bridges	1	2	-	2	1	-	2	2	1	-	1	1	3	2	-
4	Know about basic of PLC	1	2	-	2	1	-	2	1	1	-	1	1	3	2	-
5	Measure the efficiency of PV modules	1	2	-	2	1	-	2	1	2	-	1	1	2	2	-
6	Calibrate ammeter, voltmeter ,energy meter and transformers.	1	3	-	3	1	-	3	1	1	-	1	1	-	-	-
Average		1	2.1	-	2.1	1.3	-	2.1	1.6	1.6	-	1.6	1	2	1.6	-

Semester IV																
18EE407 - 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
1	Study the characteristics and mathematical applications of op-amp	-	-	3	3	2	-	1	-	3	-	-	-	2	3	1
2	Design and verify waveform generator circuits and filter circuits using op-amp	-	-	3	3	2	-	1	-	3	-	-	-	2	3	1
3	Design voltage regulator and power supply circuits using Linear ICs	-	-	3	3	2	-	1	-	3	-	-	-	2	3	1
4	Realize the switching function using universal gates.	-	-	3	3	2	-	1	-	3	-	-	-	2	3	1
5	Realize the various types of combinational logic circuits	-	-	3	3	2	-	1	-	3	-	-	-	2	3	1
6	Implement the various types of sequential logic circuits	-	-	3	3	2	-	1	-	3	-	-	-	-	-	-
Average		-	-	3	3	2	-	1	-	3	-	-	-	2	3	1

Semester IV																
18MC301 - Indian Constitution																
		Program Outcomes												Program Specific Outcomes		
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Understand the emergence and evolution of the Indian Constitution	-	-	-	-	-	-	-	-	1	1	-	1	-	-	-
2	Explain the key concepts of Indian Political system	-	-	-	-	-	-	-	-	1	1	-	1	-	-	-
3	Describe the role of Constitution in a democratic society	-	-	-	-	-	-	-	-	1	1	-	1	-	-	-
4	Present the structure and functions of the central and state Governments, the legislature and Judiciary	-	-	-	-	-	-	-	-	1	1	-	1	-	-	-
Average		-	-	-	-	-	-	-	-	1	1	-	1	-	-	-

Semester V																
18EE501 - Power Generation, Transmission Distribution system																
		Program Outcomes												Program Specific Outcomes		
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Design the layout of various types of power generating systems such as thermal, Hydro, nuclear, diesel and MHID	1	2	1	2	1	2	3	1	1	1	1	2	3	2	1
2	Develop expression for computation of fundamental parameters off lines	2	3	3	3	2	1	1	1	1	1	1	1	2	2	1
3	Categorize the lines into different classes and develop equivalent circuits	2	2	2	2	2	1	1	1	1	1	1	1	2	2	1
4	Analyze the voltage distribution in insulator strings and cables and methods to improve the same.	2	2	2	2	2	1	1	1	1	1	1	2	2	2	1
5	Comprehend the substation components and grounding techniques.	1	1	2	2	1	1	1	1	1	1	1	1	1	2	1
6	Grasp the different distribution system	2	1	1	1	1	1	1	1	1	1	1	2	2	2	1
Average		1.6	1.8	1.8	2	1.5	1.1	1.3	1	1	1	1	1.5	2	2	1

Semester V																
18EE502 - Control Systems																
		Program Outcomes												Program Specific Outcomes		
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Derive the transfer function models of any electrical and mechanical systems	3	2	2	1	1	2	1	1	1	1	1	2	3	1	1
2	Develop the time response and steady state error analysis of the control systems	3	3	2	2	1	2	1	1	1	2	1	2	2	2	1
3	Analyze the frequency response of the systems	3	3	1	1	2	1	1	1	1	2	1	1	3	2	1
4	Analyze the stability of closed loop control systems	3	3	2	1	1	1	2	2	1	2	2	2	2	3	1
5	Construct the root locus plot and analyse systems stability	3	1	2	2	1	1	2	3	1	2	2	2	2	3	1
6	Design the compensators using conventional techniques	3	1	2	2	1	1	2	3	1	2	2	2	2	3	1
Average		3	2.1	1.8	1.5	1.1	1.3	1.5	1.8	1	1.8	1.5	1.8	2.3	2.3	1

Semester V																
18EE503 - Power Electronics																
		Program Outcomes												Program Specific Outcomes		
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Select the Power Semiconductor Devices based on Characteristics	-	-	1	3	-	2	-	-	-	1	-	1	1	2	1
2	Evaluate the performance of phase-controlled rectifier	2	-	-	1	2	-	-	1	-	-	-	-	2	3	1
3	Design and analyse the DC/DC converter circuits	1	2	-	-	-	-	2	-	-	-	-	-	1	3	-
4	Analyze the inverter operation and its control techniques	1	2	-	3	-	1	2	-	-	-	-	-	1	2	1
5	Know the operation and application of AC voltage controller and matrix convertors	-	-	1	-	2	-	-	-	2	-	2	2	-	2	1
Average		1.3	2	1	2.3	2	1.5	2	1	2	1	2	2	1.2	2.4	1

Semester V																
18EE504 - 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
1	Understand any other types of modern microprocessor and microcontroller	1	1	1	1	1	-	1	1	-	1	1	1	1	1	-
2	Select appropriate digital system based on applications	1	1	1	1	1	-	1	1	-	1	1	1	3	2	-
3	Design simple controls using software programs	1	1	1	1	1	-	1	1	-	1	1	1	2	3	-
4	Design and interface communication between digital systems	1	1	1	1	1	-	1	1	-	1	1	1	2	3	-
5	Apply the digital concepts to measure and control simple electrical systems	1	1	1	1	1	-	1	1	-	1	1	1	3	1	1
Average		1	1	1	1	1	-	1	1	-	1	1	1	2.2	2	1

Semester V																
18EE505 - Control System Laboratory																
		Program Outcomes												Program Specific Outcomes		
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Design the transfer function of DC and AC machines	3	3	2	1	1	1	3	1	2	1	1	2	3	2	-
2	Design compensation for control system	3	3	3	3	2	2	3	1	2	2	1	1	3	2	-
3	Gain knowledge about Synchros	3	3	3	2	2	1	1	2	1	3	1	1	3	2	-
4	Gain knowledge about Stepper motor	3	3	3	1	1	1	2	2	1	2	2	2	3	2	-
5	Design controllers for control systems	2	3	2	3	1	2	1	3	1	2	2	2	3	2	-
Average		2.8	3	2.6	2	1.4	1.4	2	1.8	1.4	2	1.4	1.6	3	2	-

Semester V																
18EE506 - Power Electronics Laboratory																
		Program Outcomes												Program Specific Outcomes		
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Analyze the characteristics of MOSFET,SCR and IGBT	-	2	-	3	-	2	-	-	1	-	-	1	1	3	1
2	Evaluate the performance of DC-DC Converters and inverters	2	-	3	1	-	-	2	-	-	-	1	-	1	2	1
3	Design and control of inverters with different modulations	-	1	2	-	2	-	2	-	-	2	-	-	2	3	1
4	Analyze the performance of power converters with simulation studies	1	-	-	3	-	1	-	-	-	-	2	-	1	2	-
5	Demonstrate the operation of power converters	-	-	-	-	2	-	-	1	2	-	-	2	-	2	1
Average		1.5	1.5	1	1.4	2	1.5	2	1	1.5	2	1.5	1.5	1	2.4	1

Semester V																
18EE507 - 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
1	Write coding to implement different types of algorithms	1	1	1	1	1	-	1	1	1	1	-	1	2	3	-
2	Design and implement simple controllers	1	1	1	1	1	1	1	1	1	1	1	1	3	3	-
3	Use simulation and emulators for debugging and verifying codes	1	1	1	1	1	-	1	1	1	1	-	1	2	2	-
4	Write efficient codes using interrupts for time critical applications	1	1	1	1	1	-	1	1	1	1	1	1	2	2	-
5	Interface any application module to microprocessor/microcontroller.	1	1	1	1	1	1	1	1	1	1	1	1	1	2	-
Average		1	1	1	1	1	1	1	1	1	1	1	1	2	2.4	-

Semester VI																
18EE601 - 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
1	Develop the single line diagram for the power system	2	1	3	1	3	-	1	-	-	-	-	-	3	2	-
2	Perform and analyse load flow computation using bus admittance matrix	2	2	3	2	3	-	1	-	-	-	-	-	3	3	-
3	Perform and analyse balanced fault using bus impedances matrix	2	2	3	2	3	-	1	-	-	-	-	-	1	2	-
4	Develop computational models for unsymmetrical fault analysis in power systems	2	2	3	2	3	-	1	-	-	-	-	-	2	2	-
5	Understand the transient stability studies	2	2	3	2	3	-	1	-	-	-	-	-	2	2	-
Average		2	1.8	3	1.8	3	-	1	-	-	-	-	-	2.2	2.2	-

Semester VI																
18EE602 - Electronic 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
1	Understand the characteristics of dc motors and induction motors	3	1	3	-	-	2	1	1	-	-	1	2	2	2	1
2	Understand the principles of speed-control of dc motors and induction motors	3	3	1	3	-	1	1	1	-	-	-	1	2	2	2
3	Understand the power electronic converters used for dc motors and induction motor speed control	3	3	3	3	3	1	1	1	-	-	-	1	3	3	2
4	Gain knowledge on the Scalar control or constant V/f control of induction motor	1	3	3	2	3	1	1	1	-	-	-	1	2	2	2
5	Gain knowledge on chopper fed DC drives	3	3	3	3	3	1	1	1	-	-	1	1	2	2	1
Average		2.6	2.6	2.6	2.2	3	1.2	1	1	-	-	1	1.2	2.2	2.2	1.6

Semester VI																
18EE603 - Professional Ethics and Humans Values																
		Program Outcomes												Program Specific Outcomes		
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Understand the importance of ethics and values in life and society	-	-	2	-	-	3	-	3	2	-	-	3	-	-	-
2	Understood the core values that shape the ethical behaviour of an engineer	-	-	2	-	-	3	-	3	1	-	-	2	-	-	1
3	Expose awareness on professionals ethics and human values	-	-	2	-	-	2	-	3	-	-	-	2	-	-	1
4	Analyse a person based on human value concepts	-	-	2	-	-	3	-	3	1	1	-	2	-	-	1
5	Analyse our responsibility and rights to society problems	-	-	2	-	-	2	-	2	-	1	-	2	-	-	1
Average		-	-	2	-	-	2.6	-	2.8	1.3	1	-	2.2	-	-	1

Semester VI

18EN501 - Communication Skills Laboratory

Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Write error free letters and prepare reports	-	1	-	-	-	2	-	1	3	3	1	2	-	-	1
2	Deliver welcome address and vote of thanks	1	3	-	1	-	-	-	1	1	3	1	3	-	-	1
3	Speak coherently with proper pronunciations and accent	-	1	-	3	-	1	-	2	1	3	1	2	-	-	1
4	Avoid common Indianisms and grammatical errors	-	1	-	1	-	2	-	-	1	3	-	3	-	-	2
5	Improve repertoire of passive vocabulary	-	-	-	2	-	-	-	1	-	3	2	3	-	-	1
6	Answer questions posed by interviewers confidently	-	1	-	1	-	1	-	1	1	3	1	2	-	-	2
7	Participate in group discussions effectively	-	-	-	1	-	1	-	2	2	3	1	2	-	-	1
8	Undertake online psychometric and IQ test to understand their strengths and weakness	1	2	-	2	-	1	-	-	-	3	-	2	-	-	1
Average		1	1.1	-	1.3	-	1	-	1	1.1	3	1.1	2.3	-	-	1.2

Semester VII																
18EE701 - Power System Protection and Switchgear																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Understand the concepts and applications of protective relays	2	1	2	2	1	2	3	2	1	2	3	2	2	2	1
2	Acquire knowledge about different types of circuit breakers	1	1	3	2	2	1	3	2	2	2	2	2	2	1	1
3	Understand the protection schemes of various power components	2	2	2	3	1	2	3	3	1	2	3	1	1	2	1
4	Understand numerical protection schemes	2	1	1	2	3	1	3	2	3	2	2	2	2	2	1
5	Design protection scheme for any electrical system	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	1.8	1.8	1

Semester VII																
18EE702 - 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
1	Understand the concepts of management	-	-	1	-	-	2	1	-	3	2	3	2	-	-	2
2	Understand various types of management	-	-	1	-	-	2	1	-	3	2	3	2	-	-	2
3	Understand the Indian economics	-	-	-	1	-	1	-	2	-	-	-	1	-	-	2
4	Manage an organization efficiently for its upliftment	-	-	1	-	-	2	-	1	3	2	3	2	-	-	2
5	Apply marketing concept to any organization to earn more profit	-	-	1	-	-	2	-	1	3	2	3	2	-	-	2
Average		-	-	1	1	-	1.8	1	1.1	3	2	3	1.8	-	-	2

Semester VII																
18EE703 - Power System Laboratory																
		Program Outcomes												Program Specific Outcomes		
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Formulate power system network matrices	1	2	2	1	1	1	2	1	1	1	2	2	3	2	1
2	Get knowledge about power flow analyses	1	2	1	1	1	1	1	1	1	1	2	2	3	3	1
3	Analyse power system stability problems	1	2	2	2	1	1	1	1	2	2	1	2	3	2	1
4	Formulate and solve power system operational problems	1	2	2	2	1	1	2	1	1	2	2	2	3	3	1
5	Allocate system load to various generators in the system economically	1	2	2	2	1	1	2	1	1	2	2	2	2	2	1
Average		1	2	1.8	1.6	1	1	1.6	1	1.2	1.6	1.8	2	2.8	2.4	1

Semester VII																
18EE704 - 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
1	Set up control strategies to synthesize the voltages in dc and ac motor drives	1	1	2	2	2	1	1	-	-	-	1	1	3	2	-
2	Develop testing and experimental procedures applying basic knowledge in electronics, electrical circuit analysis, electrical machines, microprocessor, and programmable logic controllers	1	2	2	2	2	1	1	-	-	-	1	1	3	3	1
3	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	3	3	-
4	Combine the use of computer-based simulation tools relevant to electrical Drives with practical laboratory experimentation	-	1	2	2	2	1	1	-	-	-	1	1	1	3	-
5	Design VSI/CSI for induction motor using any simulation software	-	1	2	2	2	1	1	-	-	-	1	1	1	3	-
Average		1	1.4	2	2	2	1	1	-	-	-	1	1	2.2	2.8	1