Government College of Engineering, Salem - 11

Department of Computer Science and Engineering

COs - POs and PSO Mapping

Course Articulation Matrix – 18 Regulation

Semester – I													
18EN101 - Professional English													
	Program Outcomes												**Program Specific Outcomes**	
Course Outcomes	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**
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 errors.	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	-	0.6	-	1	1.2	3	1.2	2.4	-	-	1.2

Semester – I															
18MA101 - Matrices and Calculus															
	Program Outcomes												Program Specific Outcomes			
Course Outcomes	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
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 Integral and 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**	**4**
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	-	-	-
5	Aware of spectroscopic techniques in the field of molecular identification of materials	3	3	-	-	2	-	-	-	-	2	-	-	2	-	-	-
Average		**3**	**3**	**-**	**-**	**2.0**	**-**	**-**	**-**	**2.0**	**2.0**	**-**	**-**	**1.8**	**-**	**-**	**-**

Semester – I																
18CS101 - Fundamentals of Problem Solving and C Programming																
		Program Outcomes												Program Specific Outcomes			
	Course Outcomes	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
1	Formulate and apply logic to solve basic problems.	2	1	3	-	-	-	-	-	-	-	-	3	1	-	-	-
2	Write, compile and debug programs in C language.	2	1	3	-	2	-	-	-	-	-	-	3	2	-	-	-
3	Apply the concepts such as arrays, decision making and looping statements to solve real time applications	2	1	3	-	2	-	-	-	-	-	-	3	3	-	-	-
4	Solve simple scientific and statistical problems using functions and pointers	2	1	3	-	2	-	-	-	-	-	-	3	3	-	-	-
5	Write programs related to structures and unions for simple applications.	2	1	3	-	2	-	-	-	-	-	-	3	3	-	-	-
	Average	**2**	**1**	**3**	**-**	**2.0**	**-**	**-**	**-**	**-**	**-**	**-**	**3**	**2.4**	**-**	**-**	**-**

Semester – I																
18EN102 - Professional English Laboratory																
		Program Outcomes												Program Specific Outcomes			
	Course Outcomes	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
1	Infer, interpret and correlate routine, classroom-related conversation	-	3	-	3	-	1	-	1	2	3	1	2	-	-	-	-
2	Use a range of common vocabulary and context based idioms.	-	2	-	2	-	-	-	1	1	3	2	3	-	-	-	-
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	-	-	-	-
4	Identify the most important words in a story/article.	-	1	-	2	-	1	-	1	-	3	1	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	-	-	-	-
6	Vocalize words without the aid of pictures	-	1	-	1	-	1	-	2	-	3	1	3	-	-	-	-
7	Make effective self-introductions	-	2	-	1	-	-	-	-	-	3	2	3	-	-	-	-
8	Study options, compare and contrasts the options	-	2	-	2	-	1	-	-	1	3	-	2	-	-	-	-
9	Exercise a choice, justify it by giving examples and illustrations.	-	1	-	1	-	2	-	1	2	3	-	3	-	-	-	-
10	Construct a situation and to participate in conversations.	-	3	-	1	-	-	-	-	3	3	1	3	-	-	-	-
Average		-	1.8	-	1.7	-	0.7	-	0.8	1.2	3	1	2.6	-	-	-	-

		Semester – I														
		18CS102 - Computer Practice Laboratory														
			Program Outcomes												**Program Specific Outcomes**			
	Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
1	Demonstrate the basic mechanics of Word documents and working knowledge of mail merge.	-	-	-	-	-	-	-	-	-	3	-	-	1	-	-	-
2	Demonstrate the use of basic functions and formulas in Spread sheet.	2	3	-	-	-	-	-	-	-	-	-	-	1	-	-	-
3	Apply good programming methods for program development.	2	3	3	-	-	-	-	-	-	-	-	3	2	-	-	-
4	Implement C programs for simple applications.	1	1	1	-	-	-	-	-	-	-	-	3	3	-	-	-
Average		**1.6**	**2.3**	**2.0**	**-**	**-**	**-**	**-**	**-**	**-**	**3.0**	**-**	**3.0**	**1.75**	**-**	**-**	**-**

Semester – I

18ME102 - Workshop Manufacturing Practices

	Course Outcomes	Program Outcomes												Program Specific Outcomes			
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
1	Prepare fitting of metal and wooden pieces using simple fitting and carpentry tools manually.	2	1	2	-	-	-	-	-	-	-	1	2	2	1	-	-
2	Prepare simple lap, butt and tee joints using arc welding equipment.	1	-	2	-	-	-	2	-	-	-	-	-	2	1	-	-
3	Prepare green sand moulding.	2	1	2	-	-	-	2	-	-	-	-	-	1	1	-	-
4	Prepare sheet metal components.	1	-	1	-	-	-	2	-	-	-	-	-	1	1	-	-
5	Prepare simple components using lathe and drilling machine.	1	1	I	-	-	-	1	-	-	-	-	-	1	1	-	-
	Average	1.4	1.0	1.7	-	-	-	1.7	-	-	-	1.0	2.0	1.4	1	-	-

Semester – II																	
18MA202 - Differential Equations and Linear Algebra																	
		Program Outcomes												Program Specific Outcomes			
	Course Outcomes	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
1	Learn the techniques of solving ordinary and partial differential equations of second and higher order that arise in engineering problems.	3	2	2	2	1	1	2	1	1	1	1	1	2	3	-	-
2	Familiar with the concept of Laplace transforms method to solve second order differential equations.	3	2	2	2	1	1	2	1	1	1	1	1	2	3	-	-
3	Learn the fundamental knowledge of Matrices and acquired the knowledge about the vector spaces and inverse of linear transformation and composition of linear maps.	3	2	2	2	1	1	2	1	1	1	1	1	2	3	-	-
Average		**3**	**2**	**2**	**2**	**1**	**1**	**2**	**1**	**1**	**1**	**1**	**1**	**2**	**3**	**-**	**-**

Semester – II																
18PH201 - Semiconductor Physics and Optoelectronics																
		Program Outcomes												Program Specific Outcomes			
	Course Outcomes	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
1	The free electron theory and difference between the electronic materials	3	3	1	-	2	-	1	-	-	-	-	-	3	2	-	-
2	The basics of semiconductors and to apply continuity equation for various devices	2	3	1	2	-	-	1	-	-	-	-	-	3	2	-	-
3	The concept of p-n junction and breakdown mechanism in semiconductors	3	1	2	-	-	-	1	-	-	-	-	-	2	1	-	-
4	The principle and working of semiconductor laser, LED, LCD and switching device	3	1	2	-	-	-	1	-	-	-	-	-	2	1	-	-
5	The Construction and characteristics of solar cell, photo conductors, photo diodes, photo transistors and modulators	1	3	2	-	3	-	1	-	-	-	-	-	2	2	-	-
Average		2.4	2.2	1.6	2.0	2.5	-	1	-	-	-	-	-	2.4	1.6	-	-

Semester – II																
18EE101 - Basic Electrical and Electronics Engineering																
		Program Outcomes												**Program Specific Outcomes**			
	Course Outcomes	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
1	Analyse the simple DC circuits.	3	3	1	-	2	-	1	-	-	-	-	-	3	2	-	-
2	Analyse the single and three phase AC circuits.	2	3	1	2	-	-	1	-	-	-	-	-	3	2	-	-
3	Understand the working principle of Electrical machines and transformers.	3	1	2	-	-	-	1	-	-	-	-	-	2	1	-	-
4	Analyse the fundamentals and characteristics of Diode , BJT and OPAMP .	3	1	2	-	-	-	1	-	-	-	-	-	2	1	-	-
5	Understand the concept of Electrical Installations.	1	3	2	-	3	-	1	-	-	-	-	-	2	2	-	-
	Average	**2.4**	**2.2**	**1.6**	**2.0**	**2.5**	**-**	**1**	**-**	**-**	**-**	**-**	**-**	**2.4**	**1.6**	**-**	**-**

Semester – II															
18ME101 - Engineering Graphics & Design															
		Program Outcomes											Program Specific Outcomes		
	Course Outcomes	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
1	Understand the conventions and the methods of engineering drawing.	2	1	-	-	2	-	-	-	-	1	-	-	1	1	-	-
2	Understand the fundamental concepts of theory of projection.	2	1	-	-	2	-	-	-	-	-	-	-	1	2	-	-
3	Understand the development of different surfaces.	3	2	-	2	2	-	-	-	-	-	-	1	2	1	-	-
4	Develop the relationships between 2D and 3D environments.	2	2	-	1	1	-	-	-	-	2	-	1	1	2	-	-
5	Demonstrate computer aided drafting.	2	2	-	1	1	-	-	-	-	1	-	2	2	1	-	-
	Average	**2.2**	**1.6**	**-**	**1.3**	**1.6**	**-**	**-**	**-**	**-**	**1.3**	**-**	**1.3**	**1.4**	**1.4**	**-**	**-**

		Semester – II															
		18PH103 - 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**
1		Handle different measuring instruments and to measure different parameters	3	3	-	2	3	1	1	-	3	2	3	3	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**	**-**	**-**

		Semester – II														
		18CY102 - 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**
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	-	-	-	-	-	-	-	-	-	-	-	-	-
3	To understand the principle and applications of conductometric titrations, spectrometer and Potentiometric titrations.	3	3	1	-	-	-	-	-	-	-	-	-	2	-	-	-
	Average	**3**	**3**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2.0**	**-**	**-**	**-**

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	4
1	read short passages fluently, avoiding mispronunciation, substitution, omission and transposition of word-pairs	-	2	-	-	-	1	-	2	2	3	2	2	-	-	-	-
2	vocalize words without the aid of pictures.	1	1	-	2	-	-	-	-	1	3	1	3	-	-	-	-
3	develop a well-paced, expressive style of reading.	-	3	-	2	-	1	-	-	2	3	-	2	-	-	-	-
4	make effective oral presentations on technical and general contexts	-	2	-	1	-	1	-	1	-	3	2	3	-	-	-	-
5	describe a process with coherence and cohesion.	-	2	-	2	-	-	-	1	1	3	1	3	-	-	-	-
Average		1.0	2	-	1.7	-	1.0	-	1.3	1.5	3	1.5	2.6	-	-	-	-

Semester – II

18EE102 - Basic Electrical and Electronics Engineering Laboratory

	Course Outcomes	Program Outcomes												Program Specific Outcomes			
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
1	Get an exposure to DC and AC circuits.	3	3	1	-	2	-	1	-	-	-	-	-	3	2	-	-
2	Understand the loading characteristics of transformers	2	3	1	2	-	-	1	-	-	-	-	-	3	2	-	-
3	Know the parts of single-phase and three phase induction motors.	3	1	2	-	-	-	1	-	-	-	-	-	2	1	-	-
4	Get an exposure Electron device	3	1	2	-	-	-	1	-	-	-	-	-	2	1	-	-
5	Make electrical connections by wires of appropriate ratings.	1	3	2	-	3	-	1	-	-	-	-	-	2	2	-	-
	Average	2.4	2.2	1.6	2.0	2.5	-	1	-	-	-	-	-	2.4	1.6	-	-

		Semester – III															
		18MA301 - Probability and Statistics															
			Program Outcomes												Program Specific Outcomes			
	Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
1	Acquire the concepts of probability and random variables and the knowledge of standard distributions.	3	2	-	2	-	-	-	-	-	-	-	-	2	-	-	-
2	Learn about the correlation and regression of two-dimensional random variables.	3	2	-	2	-	-	-	-	-	-	-	-	2	-	-	-
3	Familiar with fitting a curve by least squares method.	3	2	-	2	-	-	-	-	-	-	-	-	2	-	-	-
Average		3	2	-	2	-	-	-	-	-	-	-	-	2	-	-	-

Semester – III																
18CS301 - Digital Principles and System Design																
		Program Outcomes												Program Specific Outcomes			
	Course Outcomes	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
1	Apply Boolean laws to derive simplified Boolean function and implement the circuit with logic components.	3	2	-	-	-	-	-	-	-	-	-	3	1	-	-	-
2	Reproduce the existing design of combinational or sequential circuits of a computing device and scale them in size	3	2	-	-	3	-	-	-	-	-	-	3	1	-	-	-
3	Analyse and design simple combinational or sequential circuits	3	2	-	-	3	-	-	-	-	-	-	3	3	-	-	-
Average		3	2	-	-	3	-	-	-	-	-	-	3	1.6	-	-	-

Semester – III															
18CS302 - Data Structures and Algorithms															
	Program Outcomes												Program Specific Outcomes			
Course Outcomes	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
1 Implement various abstract data types to solve real time problems by using Linear Data Structures.	3	3	3	2	2	1	1	-	-	-	2	3	3	2	-	-
2 Apply the different Non-Linear Data Structures to solve problems.	3	3	3	2	2	1	1	-	-	-	2	3	3	2	-	-
3 Analyze and implement graph data structures to solve various computing problems.	3	3	3	2	2	1	1	-	-	-	2	3	3	2	-	-
4 Critically analyze the various sorting and searching algorithms.	3	3	3	2	2	1	1	-	-	-	2	3	3	2	-	-
Average	3	3	3	2	2	1	1	-	-	-	2	3	3	2	-	-

Semester – III																
18CS303 - Computer Organization and Architecture																
		Program Outcomes												Program Specific Outcomes			
	Course Outcomes	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
1	Explain the working principle and implementation of computer hardware components and its various functional units	3	3	-	-	-	-	-	-	-	-	3	3	2	-	-	-
2	Apply the operations of arithmetic unit to perform specific task	2	2	-	-	-	-	-	-	-	-	1	3	-	2	-	-
3	Analyse the different types of control and the concept of pipelining	2	2	-	-	-	-	-	-	-	-	3	3	-	2	-	-
4	Illustrate various memory components including Cache memory and Virtual memory	2	2	-	-	-	-	-	-	-	-	2	3	-	2	-	-
5	Explain the different ways of communication with I/O devices and standard I/O interfaces	2	2	-	-	-	-	-	-	-	-	3	1	-	2	-	-
Average		2.2	2.2	-	-	-	-	-	-	-	-	2.4	2.6	2.0	2.0	-	-

		Semester – III															
		18CS304 - Operating Systems															
			Program Outcomes												**Program Specific Outcomes**			
	Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
1	Identify the components and their functionalities in the operating system	3	3	2	1	2	-	1	-	-	-	1	3	2	1	-	-	
2	Apply various CPU scheduling algorithms to solve problems	3	3	2	1	2	-	1	-	-	-	1	3	2	1	-	-	
3	Analyze the needs and applications of process synchronization and deadlocks	3	3	2	1	2	-	1	-	-	-	1	3	2	1	-	-	
4	Apply the concepts of memory management including virtual memory and page replacement to the issues that occur in real time applications	3	3	2	1	2	-	1	-	-	-	1	3	2	1	-	-	
5	Solve issues related to file system implementation and disk management	3	3	2	1	2	-	1	-	-	-	1	3	2	1	-	-	
Average			**3**	**3**	**2**	**1**	**2**	**-**	**1**	**-**	**-**	**-**	**1**	**3**	**2**	**1**	**-**	**-**

Semester – III																
18CS305 - Data Structures and Algorithms Laboratory																
		Program Outcomes												**Program Specific Outcomes**			
	Course Outcomes	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
1	Understand the importance of structure and abstract data type, and their basic usability in different applications using programming languages	3	3	3	2	2	1	1	-	-	-	2	3	3	2	-	-
2	Understand the linked implementation, and its uses both in linear and non-linear data structure	3	3	3	2	2	1	1	-	-	-	2	3	3	2	-	-
3	Understand various data structure such as stacks, queues, trees, graphs, etc. to solve various computing problems	3	3	3	2	2	1	1	-	-	-	2	3	3	2	-	-
4	Demonstrate understanding of various sorting techniques, including bubble sort, insertion sort, selection sort and quick sort	3	3	3	2	2	1	1	-	-	-	2	3	3	2	-	-
5	Decide a suitable data structure and algorithm to solve a real-world problem	3	3	3	2	2	1	1	-	-	-	2	3	3	2	-	-
Average		**3**	**3**	**3**	**2**	**2**	**1**	**1**	**-**	**-**	**-**	**2**	**3**	**3**	**2**	**-**	**-**

		Semester – III															
		18CS306 - Operating 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
1	Identify basic services and functionalities of the operating system using system calls.	2	2	2	1	2	-	1	-	-	-	1	2	1	1	-	-
2	Apply CPU Scheduling Algorithms like FCFS, Round Robin, SJF, and Priority for applications	2	2	2	1	2	-	1	-	-	-	1	2	1	1	-	-
3	Apply the concepts of deadlock in operating systems and implement them in multiprogramming system.	3	3	2	1	2	-	1	-	-	-	1	3	2	1	-	-
4	Apply memory management schemes and page replacement schemes.	2	2	2	1	2	-	1	-	-	-	1	3	2	1	-	-
5	Experiment with file allocation and organization techniques	3	3	2	1	2	-	1	-	-	-	1	3	1	1	-	-
	Average		2.4	2.4	2	1	2	-	1	-	-	-	1	2.6	1.4	1	-	-

		Semester – IV															
		18MA401 - Numerical Methods and Linear Programming Problem															
			Program Outcomes												**Program Specific Outcomes**			
	Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
1	Obtain the knowledge about interpolation , numerical differentiation and integration.	3	2	-	2	-	-	-	-	-	-	-	-	2	-	-	-
2	Solve the initial value problems by using single-step and multi-step methods.	3	2	-	2	-	-	-	-	-	-	-	-	2	-	-	-
3	Find the numerical solution of partial differential equation by using Finite difference methods.	3	2	-	2	-	-	-	-	-	-	-	-	2	-	-	-
4	Solve LPP by using Graphical and Simplex methods	3	2	-	2	-	-	-	-	-	-	-	-	2	-	-	-
5	Obtain the solution of Transportation and Assignment models.	3	2	-	2	-	-	-	-	-	-	-	-	2	-	-	-
Average			**3**	**2**	**-**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**-**	**-**	**-**

Semester – IV																
18CS401 - Computer Networks																
		Program Outcomes												**Program Specific Outcomes**			
	Course Outcomes	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
1	Classify the fundamentals of data communications and functions of layered architecture	3	3	1	2	2	-	-	-	-	-	1	3	2	1	-	-
2	Apply the error detection and correction methods and also identify the different network technologies	3	3	1	2	2	-	-	-	-	-	1	3	2	1	-	-
3	Analyze the requirements for a given organizational structure and select the most appropriate networking architecture and routing technologies	3	3	1	2	2	-	-	-	-	-	1	3	2	1	-	-
4	Illustrate the transport layer principles and reliable data transfer using protocols	3	3	1	2	2	-	-	-	-	-	1	3	2	1	-	-
5	Analyze the application layer protocols and also the use of network security	3	3	1	2	2	-	-	-	-	-	1	3	2	1	-	-
	Average	**3**	**3**	**1**	**2**	**2**	**-**	**-**	**-**	**-**	**-**	**1**	**3**	**2**	**1**	**-**	**-**

Semester – IV																
18CS402 - Design and Analysis of Algorithms																
		Program Outcomes												**Program Specific Outcomes**			
	Course Outcomes	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
1	Analyze the time and space complexity of different algorithms.	3	3	3	1	2	-	1	-	-	1	1	3	3	2	-	-
2	Apply appropriate design technique for a problem.	3	3	3	1	2	-	1	-	-	1	1	3	3	2	-	-
3	Modify existing algorithms to improve efficiency.	3	3	3	1	2	-	1	-	-	1	1	3	3	2	-	-
Average		**3**	**3**	**3**	**1**	**2**	**-**	**1**	**-**	**-**	**1**	**1**	**3**	**3**	**2**	**-**	**-**

Semester – IV																
18CS403 - Object Oriented Programming using C++																
		Program Outcomes												Program Specific Outcomes			
	Course Outcomes	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
1	Construct the object oriented programming concepts.	3	3	3	2	1	-	1	-	-	-	2	2	3	2	-	-
2	Familiarize and build the template functions and classes	3	3	3	2	1	-	1	-	-	-	2	2	3	2	-	-
3	Disseminate and apply exception handling mechanisms.	3	3	3	2	1	-	1	-	-	-	2	2	3	2	-	-
4	Depict and exploit steam classes.	3	3	3	2	1	-	1	-	-	-	2	2	3	2	-	-
5	Construct the object oriented programming concepts.	3	3	3	2	1	-	1	-	-	-	2	2	3	2	-	-
Average		3	3	3	2	1	-	1	-	-	-	2	2	3	2	-	-

Semester – IV																
18CS404 - Software Engineering																
		Program Outcomes												**Program Specific Outcomes**			
	Course Outcomes	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
1	Familiar with the different life cycle models and requirement collection process.	3	3	3	-	2	-	-	-	-	-	2	3	-	2	-	-
2	Describe design and development principles in the construction of software systems.	3	3	3	-	2	-	-	-	-	-	2	3	3	-	-	-
3	Explain the various software testing techniques and methods used for project management.	3	3	3	-	2	-	-	-	-	-	2	3	3	-	-	-
Average		**3**	**3**	**3**	**-**	**2**	**-**	**-**	**-**	**-**	**-**	**2**	**3**	**3.0**	**2.0**	**-**	**-**

Semester – IV																
18CS405 - Microprocessors and Microcontrollers																
		Program Outcomes												**Program Specific Outcomes**			
	Course Outcomes	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
1	Understand and execute programs based on 8-86 microprocessors.	2	2	-	-	-	-	-	-	-	-	2	-	2	-	-	-
2	Design Memory Interfacing circuits.	2	2	2	2	-	-	-	-	-	-	-	-	2	-	-	-
3	Design and interface I/O circuits.	2	2	2	2	-	-	-	-	-	-	-	-	2	-	-	-
4	Design and implement 8-51 microcontroller-based systems.	2	2	2	2	-	-	-	-	-	-	-	-	2	-	-	-
Average		**2**	**2**	**2.0**	**2.0**	**-**	**-**	**-**	**-**	**-**	**-**	**2.0**	**-**	**2**	**-**	**-**	**-**

Semester – IV																
18CS406 - Object Oriented Programming using C++ Laboratory																
		Program Outcomes												Program Specific Outcomes			
	Course Outcomes	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
1	Write programs using control structures and functions	3	3	3	2	1	-	1	-	-	-	2	2	3	2	-	-
2	Construct programs using Object Oriented Programming concepts	3	3	3	2	1	-	1	-	-	-	2	2	3	2	-	-
3	Build Template functions and classes	3	3	3	2	1	-	1	-	-	-	2	2	3	2	-	-
4	Develop program with Exceptions	3	3	3	2	1	-	1	-	-	-	2	2	3	2	-	-
5	Implement program using File	3	3	3	2	1	-	1	-	-	-	2	2	3	2	-	-
	Average	**3**	**3**	**3**	**2**	**1**	**-**	**1**	**-**	**-**	**-**	**2**	**2**	**3**	**2**	**-**	**-**

Semester – IV																
18CS407 - Microprocessors and Microcontrollers Laboratory																
		Program Outcomes												Program Specific Outcomes			
	Course Outcomes	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
1	Write ALP Programmes for fixed and Floating Point and Arithmetic	1	-	2	-	-	-	-	-	-	-	-	-	2	1	-	-
2	Interface different I/Os with processor	-	2	2	-	-	-	-	-	-	-	2	-	2	-	-	-
3	Generate waveforms using Microprocessors	1	2	2	-	-	-	-	-	-	-	2	-	-	-	-	-
4	Execute Programs in 8-51	2	2	2	-	-	-	-	-	-	-	-	-	2	2	-	-
5	Explain the difference between simulator and Emulator	-	2	-	2	-	-	-	-	-	-	2	-	-	1	-	-
	Average	**1.3**	**2.0**	**2.0**	**2.0**	**-**	**-**	**-**	**-**	**-**	**-**	**2.0**	**-**	**2.0**	**1.3**	**-**	**-**

	Semester – IV															
	18CYMC01 - 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**
1	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.	-	-	2	-	-	2	-	-	1	-	-	1	-	-	2	-
2	Predict the methods to conserve energy and ways to make optimal use of the energy for the future	-	-	2	-	-	2	-	-	1	-	-	1	-	-	2	-
	Average	-	-	2	-	-	2	-	-	1	-	-	1	-	-	2	-

Semester – V																
18CS501 - Database Management Systems																
		Program Outcomes												Program Specific Outcomes			
	Course Outcomes	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
1	Understand the basic concepts of the database and data models.	3	-	-	-	-	3	-	-	-	-	-	3	3	3	-	-
2	Design a database using ER diagrams and map ER into Relations and normalize the relations.	3	3	3	-	-	3	-	-	-	-	-	3	3	3	-	-
3	Develop a simple database for applications	3	-	-	-	3	3	-	-	-	3	3	3	3	3	-	-
Average		**3**	**3**	**3**	**-**	**3**	**3**	**-**	**-**	**-**	**3**	**3**	**3**	**3**	**3**	**-**	**-**

Semester – V																
18CS502 - Theory of Computation																
		Program Outcomes												**Program Specific Outcomes**			
Course Outcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
1	Develop a computational model to recognize regular language or context free language	3	3	2	-	2	1	1	-	-	-	-	3	2	2	-	-
2	Establish equivalence among computational models of equivalent capacities.	3	3	2	-	2	1	1	-	-	-	-	3	2	2	-	-
3	Recall the procedures involved in the construction of computational models.	3	3	2	-	2	1	1	-	-	-	-	3	2	2	-	-
Average		**3**	**3**	**2**	**-**	**2**	**1**	**1**	**-**	**-**	**-**	**-**	**3**	**2**	**2**	**-**	**-**

Semester – V																
18CS503 - Java Programming																
		Program Outcomes												Program Specific Outcomes			
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
1	Familiarize and apply the Object Oriented concepts and java features	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	Build the standalone applications and applet applications	3	3	3	-	3	-	-	-	3	-	3	3	3	2	-	-
3	Develop simple chart application and Database Connectivity	3	3	3	3	3	-	-	-	3	-	3	3	3	2	-	-
Average		**3**	**3**	**3**	**3**	**3**	**-**	**-**	**-**	**3**	**-**	**3**	**3**	**3**	**2**	**-**	**-**

Semester – V															
18MG501 - Principles of Management															
	Program Outcomes												Program Specific Outcomes			
Course Outcomes	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
1	Identify the concepts of management, administration and the evolution of management thoughts	-	-	-	-	1	-	-	2	1	1	2	-	-	2	-	-
2	Apply the planning concepts in different applications	-	-	-	-	1	-	-	2	1	1	2	-	-	2	-	-
3	Analyze the different organizational structures	-	-	-	-	1	-	-	2	1	1	2	-	-	2	-	-
4	Analyze the various staffing, controlling and communication processes	-	-	-	-	1	-	-	2	1	1	2	-	-	2	-	-
Average	-	-	-	-	1	-	-	2	1	1	2	-	-	2	-	-

Semester – V

18CS504 - Database Management 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**
1	Build tables, construct relationships among them and retrieve data with simple and complex queries.	-	-	3	-	-	-	3	-	-	-	3	-	3	3	-	-
2	Build various constraints, triggers and indexes on the tables.	-	-	3	-	-	-	3	-	-	-	3	-	3	3	-	-
3	Design and implement a database and to integrate into a simple application.	-	-	3	-	-	-	3	-	-	-	3	-	3	3	-	-
	Average	**-**	**-**	**3**	**-**	**-**	**-**	**3**	**-**	**-**	**-**	**3**	**-**	**3**	**3**	**-**	**-**

Semester – V																
18CS505 - Java 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
1	Implement object oriented programming concepts and java features	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	Develop Java standalone applications and applet applications	3	3	3	-	3	-	-	-	3	-	3	3	3	2	-	-
3	Build simple chat applications and database connectivity applications	3	3	3	3	3	-	-	-	3	-	3	3	3	2	-	-
Average		3	3	3	3	3	-	-	-	3	-	3	3	3	2	-	-

	Semester – V															
	18EN501 - Communication Skills and Language Laboratory																
		Program Outcomes												**Program Specific Outcomes**			
	Course Outcomes	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
1	Write error free letters and prepare reports	2	2	2	-	-	2	-	-	-	-	-	-	2	2	-	-
2	Deliver welcome address and vote of thanks	2	2	2	-	-	2	-	-	-	-	-	-	2	2	-	-
3	Speak coherently with proper pronunciation and accent	2	2	2	-	-	2	-	-	-	-	-	-	2	2	-	-
4	Avoid common Indianisms and grammatical errors	2	2	2	-	-	2	-	-	-	-	-	-	2	2	-	-
5	Improve repertoire of passive vocabulary	2	2	2	-	-	2	-	-	-	-	-	-	2	2	-	-
6	Answer questions posed by interviewers confidently	2	2	2	-	-	2	-	-	-	-	-	-	2	2	-	-
7	Participate in group discussion effectively	2	2	2	-	-	2	-	-	-	-	-	-	2	2	-	-
8	Undertake online psychometric and IQ test to understand their strengths and weaknesses	2	2	2	-	-	2	-	-	-	-	-	-	2	2	-	-
Average		**2**	**2**	**2**	**-**	**-**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**2**	**-**	**-**

		Semester – V															
		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	4
1	understand the emergence and evolution of the Indian Constitution		2	3	2	-	2	1	1	-	-	-	-	3	2	2	-	-
2	explain the key concepts of Indian Political System		2	3	2	-	2	1	1	-	-	-	-	3	2	2	-	-
3	describe the role of constitution in a democratic society.		2	3	2	-	2	1	1	-	-	-	-	3	2	2	-	-
4	present the structure and functions of the Central and State Governments, the Legislature and theJudiciary		2	3	2	-	2	1	1	-	-	-	-	3	2	2	-	-
Average			2	3	2	-	2	1	1	-	-	-	-	3	2	2	-	-

Semester – VI																
18CS61 - Principles Of Compiler Design																
		Program Outcomes												Program Specific Outcomes			
	Course Outcomes	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
1	Illustrate the operation of any phase of a compiler.	3	3	2	-	2	1	1	-	-	-	-	3	2	2	-	-
2	Compute the information to perform the task of a compiler phase.	3	3	2	-	2	1	1	-	-	-	-	3	2	2	-	-
3	Recall the principles and algorithms involved in compiler construction.	3	3	2	-	2	1	1	-	-	-	-	3	2	2	-	-
Average		**3**	**3**	**2**	**-**	**2**	**1**	**1**	**-**	**-**	**-**	**-**	**3**	**2**	**2**	**-**	**-**

Semester – VI																
18CS602 - Web Technology																
		Program Outcomes												Program Specific Outcomes			
	Course Outcomes	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
1	Express the fundamental concepts of Clients, Servers and communication between them	3	3	3	2	1	-	1	1	-	-	2	2	3	2	-	-
2	Design of Web pages with static and dynamic information and Client-side 13program (Java scripts)	3	3	3	2	1	-	1	1	-	-	2	2	3	2	-	-
3	Articulate the features of Document Object Model (DOM)	3	3	3	2	1	-	1	1	-	-	2	2	3	2	-	-
4	Implement the Servlet and Server-side programs (JSP)	3	3	3	2	1	-	1	1	-	-	2	2	3	2	-	-
5	Persuasive the web data representations	3	3	3	2	1	-	1	1	-	-	2	2	3	2	-	-
6	Illustrates how the various web service technologies interact	3	3	3	2	1	-	1	1	-	-	2	2	3	2	-	-
Average		3	3	3	2	1	-	1	1	-	-	2	2	3	2	-	-

Semester – VI																
18CS603 - Compiler Design Laboratory																
		Program Outcomes												Program Specific Outcomes			
	Course Outcomes	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
1	Implement the representation for RE, ε - NFA and DFA and perform conversions among them.	3	2	3	-	3	3	-	-	-	-	2	2	3	3	-	-
2	Implement Top-down and Bottom-up parsing.	3	3	3	2	1	-	1	1	-	-	2	2	3	2	-	-
	Average	**3**	**2.5**	**3**	**2**	**2**	**3**	**1**	**1**	**-**	**-**	**2**	**2**	**3**	**2.5**	**-**	**-**

Semester – VII																
18CS7001 - Cryptography And Network Security																
		Program Outcomes												**Program Specific Outcomes**			
	Course Outcomes	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
1	Gain knowledge of various encryption techniques and number theory	3	2	3	-	3	3	-	-	-	-	2	2	3	3	-	-
2	Understand the concepts of block cipher and public key encryption	3	3	3	-	3	3	-	-	-	-	2	2	3	2	-	-
3	Learn basics of authentication and Hash functions and digital signatures	3	3	3	-	3	3	-	-	-	-	2	2	3	3	-	-
4	Understand the concept of network security tools and system level security	3	3	3	-	3	3	-	-	-	-	2	2	3	3	-	-
5	Gain knowledge of the IP security and Web security.	3	3	3	-	3	3	-	-	-	-	2	2	3	3	-	-
Average		3	2.8	3	-	3	3	-	-	-	-	2	2	3	2.8		

Semester – VII																
18CS702 - Network Security Laboratory																
		Program Outcomes												**Program Specific Outcomes**			
	Course Outcomes	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
1	Understand how AES algorithm is implemented.	3	3	3	2	2	-	-	-	-	-	-	1	2	2	-	-
2	Implement DES algorithm.	3	2	3	-	3	3	-	-	-	-	2	2	3	3	-	-
3	Familiar with how RSA and Secure hash algorithm are implemented.	3	2	3	-	3	3	-	-	-	-	2	2	3	3	-	-
4	Understand how Diffie-Hellman Algorithm is implemented and stimulated.	3	2	3	-	3	3	-	-	-	-	2	2	3	3	-	-
5	Familiar with simulation of firewall concepts and virus attacks.	3	2	3	-	3	3	-	-	-	-	2	2	3	3	-	-
	Average	**3**	**2.2**	**3**	**2**	**2.8**	**3**	**-**	**-**	**-**	**-**	**2**	**1.8**	**2.8**	**2.8**		