

BRILLIANT INSTITUTE OF ENGINEERING AND TECHNOLOGY Approved By AICTE, New Delhi, Affiliated to JNTU-H Abdullapur (V), Abdullapurmet (M), R.R. Dist., Hyderabad, Telangana – 501 505

# **Department of Humanities & Sciences (H&S)**

## Subject: English

## **Course Outcomes:**

After completion of the course, students will be able to:

- 1. Use English considerably well in written and spoken.
- 2. Enrich language accurately and fluently.
- 3. Employ extensive and intensive reading skills
- 4. Gain confidence in using English language and skills for writing in real life situations.
- 5. Use standard grammar, punctuation, and spelling in documents.

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	(3/2	2/1 indi	icates s	trengtl	h of coi	relatio	on) 3-St	trong, i	2-Medi	um, 1-V	Veak					
COS					Prog	ram O	utcom	es (PO	s)							
	PO1															
CO1																
CO2																
CO3		1	1													
CO4							1	2		2		2				
CO5		1	2				1			2						



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## **ENGINEERING MATHEMATICS-I**

### Course Outcomes:

- 1. Write the matrix representation of a set of linear equations and to analyse the solution of the system of equations
- 2. Find the Eigen values and Eigen vectors and reduce the quadratic form to canonical form using orthogonal transformations.
- 3. Analyse the nature of sequence and series.
- 4. Determine Fourier series for different functions
- 5. Solve the applications on the mean value theorems and evaluate the improper integrals using Beta and Gamma functions

	(3/	2/1 ind	licates	strengt		- PO M rrelatio		-	2-Medi	ium, 1-V	Veak					
cos					Prog	gram O	utcom	es (POs	5)							
CUS	PO1															
CO1	3	2	2	3	3				2			3				
CO2	3	2	2	3	2				2			3				
CO3	3	2	2	3	2				2			2				
CO4	3	2	2	3	3				2			2				
CO5	3	2	2	3	3				2			2				



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## **APPLIED PHYSICS**

## Course Outcomes:

- 1. Acquire the theoretical information about matter in terms of quantum physics
- 2. Analyse the formation the bands thereby classification of materials on the basis of transport properties.
- 3. Understand the fundamentals of semiconductor physics and also the Optoelectronics
- 4. Be aware of the concepts and applications of LASER and Optical Fibers.
- 5. Apply basic knowledge on electromagnetic principles and using these wave equations for the propagation

	(3/	2/1 ind	icates	strengt			apping on) 3-S		2-Medi	ium, 1-V	Veak					
COS					Prog	gram O	utcom	es (POs	5)							
COS	PO1															
CO1	2	2     2     1     101     103     104     103     104     103     101     1012														
CO2	3															
CO3	3	2	2													
<b>CO4</b>	3	2	2													
CO5	2	2	1													



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### PROGRAMMING FOR PROBLEM SOLVING

### Course Outcomes:

At the end of the course, students will be able to

- 1. Understand the basic terminology, write, compile and debug programs in computer programming.
- 2 Apply different types of control structures and arrays in a computer programming.
- 3. Develop programs that make use of concepts such as strings and pointers in C language.
- 4. Compare parameter passing techniques, structures and unions in computer programming.

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	(3	/2/1 iı	ndica	tes sti	engtl	1 of co	orrela	tion)	3-Str	ong, i	2-Me	dium,	1-We	ak	
CO				Pro	gram	Outo	comes	(PO	<b>5)</b>					<b>PSOs</b>	
S	PO														
	1	2	3	4	5	6	7	8	9	10	11	12	01	02	03
C01		3	2	2											
CO2			3		2										
CO3		2	2		2										
CO4		İ	3		3						İ	İ			
CO5		2	2		3										

5. Analyse file operations, searching and sorting methods.



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## ENGLISH LANGUAGE LAB

## Course Outcomes:

After completion of the course, students will be able to:

- 1. Understand the nuances of language through audio- visual experience and group activities
- 2. Neutralize the accent for intelligibility
- 3. Realize the importance of listening skills and speaking skills and their application in real life situations.
- 4. Recognize significance of non-verbal communication and develop confidence to face audience and shed inhibitions.
- 5. Speak with clarity and confidence thereby enhance employability skills of the students.

					СО-	PO M	appin	g								
(	<b>3/2/1</b> i	indica	tes str	ength	of cor	relatio	on) 3-8	Strong	, 2-Me	dium, 1	l-Weak	Į.				
COS																
	PO															
	1															
CO1		$\begin{array}{c ccccccccccccccccccccccccccccccccccc$														
CO2										1		1				
CO3							1		1	2		2				
CO4								1	1	2		2				
CO5										2		2				



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## **APPLIED PHYSICS LAB**

### Course Outcomes:

On Completion of this course, students are able to:

- 1. Develop skills to impart practical knowledge in real time solution.
- 2. Understand principle, concept, working, application and comparison of results with theoretical calculations.
- 3. Design new instruments with practical knowledge.
- 4. Understand measurement technology
- 5. Use new instruments and real time applications in engineering studies.

	(3/2/1	indica	tes str	ength			appin (appin) 3-8		, 2-Me	dium, 1	-Weak					
COS					Prog	ram O	utcom	es (PC	Ds)							
	PO	PO PO PO PO PO PO PO PO PO														
	1	1     2     3     4     5     6     7     8     9     10     11     12														
CO1	3															
CO2	3	1	1													
CO3	3															
CO4	3															
CO5	3															



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## PROGRAMMING FOR PROBLEM SOLVING LAB

### Course Outcomes:

- 1. Analyse concepts in problem solving do programming in C language and write diversified solutions using C language.
- 2. Identify situations where computational methods and computers would be useful.
- 3. Understand the programming tasks using techniques learned and write pseudo-code.
- 4. Compare the program on a computer, edit, compile, debug, correct, recompile and run it.
- 5. Identify tasks in which the numerical techniques learned are applicable and apply them to write programs, and hence use computers effectively to solve the task.

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				Pro	gram	Out	comes	s (POs	5)					<b>PSOs</b>	
COS	PO	PO	PO	PS	PS	PS									
	1	2	3	4	5	6	7	8	9	10	11	12	01	02	03
CO1		2	3	2		3	2								
CO2			3		2								2	3	
CO3		2	2		2									2	
CO4			3		3								2	3	
CO5		2	2		3								3	2	



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## ENGINEERING WORKSHOP

#### Course Outcomes:

- 1. Knowledge of carpentry process and methods used in the design and fabrication, installation, maintenance and repair of structures and fixtures (e.g., furniture, cabinets) to accomplish work assignments.
- 2. Assembling together of part and removing metals to secure the necessary joint by using fitting and welding.
- 3. Understand the hardware components of house wiring.
- 4. Understand the manufacturing process using machine shop.
- 5. Analyse the different types of computer Peripherals

		(3/2/1	indic	ates s		CO-1 th of c				0	-Med	ium, 1	l-Weal	ĸ	
COS				Pr	ogran	n Outo	comes	(POs	)					PSOs	
	РО	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PSO	PSO	PSO
	1	2	3	12	1	2	3								
CO1	3			3											
CO2	3				2	2	1		3			3			
CO3	3				2	2	1		3			3			
CO4	3				2	2	1		3			3			
CO5	3				2	2	1		3			3			



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## **ENGINEERING MATHEMATICS-II**

#### Course Outcomes:

After learning the contents of this paper, the student must be able to

- 1. Identify whether the given differential equation of first order is exact or not
- 2. Solve higher differential equation and apply the concept of differential equation to real world problems
- 3. Determine extreme values of a function
- 4. Evaluate the multiple integrals and apply the concept to find areas, volumes.
- 5. Evaluate the line, surface and volume integrals and converting them from one to another.

		(3/2/1	indic	ates s			PO, Pa orrela			0	-Med	ium, 1	-Weal	K	
COS				Pr	ogran	1 Out	comes	(POs	)					PSOs	
	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PSO	PSO	PSO
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	3	3	3	3	2	2			2	2		3		2	
CO2	3	3	3	3	2	2			2			3		2	
CO3	3	3	3	3	2	2			2	2		3		2	
CO4	3	3	3	3	3				2			3		2	
CO5	3	3	3	3	2	3			2	2		3		2	



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## **ENGINEERING CHEMISTRY**

(Common for EEE, ECE, CSE, and IT)

### Course Outcomes:

After completion of the course students will be able to:

- 1. Understand water treatment, specifically hardness of water and purification of water by various methods.
- 2. Acquire knowledge on electrochemical cells, fuel cells, batteries and their applications.
- 3. Analyse microscopic chemistry in terms of atomic and molecular orbital's splitting and band theory related to conductivity.
- 4. Acquire basic knowledge on the concepts of stereochemistry.
- 5. Acquire basic knowledge on chemical reaction mechanisms and that are used in the synthesis of molecules.

(3	/2/1 ir	ndicat	es stre	ength			appin on) 3-8	0	, 2-M	edium,	1-Wea	k				
					Progr	am O	utcom	es (P	Os)							
COS	PO     PO<															
	1	1     2     3     4     5     6     7     8     9     10     11     12       2     2     1     2     1     2     1     12     1     12														
CO1	3 3 1 3 1 2															
CO2	3	2	1	1												
CO3	3	3	1	3	1	2	1	1	1							
CO4	1		1		1	1		1								
CO5	3	3	3	2	2	1	1		1							



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## BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

### Course Outcomes:

- 1. Apply basic laws in electrical circuit.
- 2. Analyse the single-phase circuits
- 3. Comprehend the construction and Operation of DC and AC machines
- 4. Know the practical importance of Diode and its characteristics
- 5. Recognize the construction and operation of BJT and JFET

		(3/2/1	indic	ates st			PO, PS orrela			0	-Medi	ium, 1	l-Weal	K	
COS				Pr	ogran	n Out	comes	(POs	)					PSOs	
	PO	PO	PO	PSO	PSO	PSO									
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	3	3	3									3			
CO2	3	3	3									3			
CO3	3	3	3									3			
CO4	3	3	3									3			
CO5	3	3	3									3			



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## **DATA STRUCTURES**

(Common for EEE, ECE, CSE and IT)

## Course Outcomes:

- 1. Identify the appropriate data structures and analyse the performance of algorithms.
- 2. Understand and implement single, double, and circular linked-lists.
- 3. Implement Stacks and Queues using array and linked-list representations.
- 4. Develop programs by using nonlinear data structures such as trees and graphs.
- 5. Design and Implement applications of advanced data structures using BST.

(3/2	2/1 inc	licates	stren			O Maj lation		rong, 2	2-Med	ium, 1	-Wea	k				
COS				Pr	ogran	1 Outo	comes	(POs)								
	PO															
	1	1     2     3     4     5     6     7     8     9     10     11     12														
CO1	2	3	2													
CO2	2	2	3													
CO3		2	2													
CO4		2	3													
CO5	2	3	3													



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## **ENGINEERING GRAPHICS**

(Common for EEE, ECE, CSE, and IT )

## Course Outcomes:

- 1. Understand the basics of drawings and importance of curves.
- 2. Draw the projection of lines and planes.
- 3. Draw the projection of solids and section of solids.
- 4. Produce development of surface and isometric projections.
- 5. Convert orthographic views to isometric views and vice-versa.

(3	CO- PO Mapping (3/2/1 indicates strength of correlation) 3-Strong, 2-Medium, 1-Weak												
COS Program Outcomes (POs)													
CUS	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	PO8	PO9	PO10	PO11	PO12	
CO1	3		1							3		3	
CO2	3		1							3		3	
CO3	3		1							3		3	
CO4	3		1							3		3	
CO5	3		1							3		3	



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ENGINEERING CHEMISTRY LAB

(Common for EEE, ECE, CSE, and IT )

### Course Outcomes:

After completion of the course, students will be able to:

- 1. Estimate the hardness of given water samples.
- 2. Select lubricants for various purposes.
- 3. Prepare advanced polymers & drug materials.
- 4. Know the strength of an acid present in batteries.
- 5. Calculate the amount of Mn<sup>+2</sup> present in unknown substances/ores using instrumental methods.

(3	CO- PO Mapping (3/2/1 indicates strength of correlation) 3-Strong, 2-Medium, 1-Weak													
COS	Program Outcomes (POs)													
	РО	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO		
	1	2	3	4	5	6	7	8	9	10	11	12		
CO1	3	2	1	1										
CO2	2	1	2											
CO3	2	2		1										
CO4	2	2	1											
CO5	2	1	2											



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BASIC ELECTRICAL AND ELECTRONICS ENGINEERING LAB

(Common for EEE, ECE, CSE, and IT )

#### Course Outcomes:

- 1. Analyse electrical circuits by applying basic laws
- 2. Analyse the performance of DC Motor, three phase Induction motor and transformer
- 3. Understand V-I Characteristics of various diodes
- 4. Design Different Rectifier Circuits
- 5. Differentiate the Transistors and their Operations

	CO- PO, PSO Mapping														
	(3/2/1 indicates strength of correlation) 3-Strong, 2-Medium, 1-Weak														
	Program Outcomes (POs)												PSOs		
COS	РО	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PSO	PSO	PSO
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	3	3	3	3					3			3			
CO2	3	3	3	3					3			3			
CO3	3	3	3	3					3			3			
CO4	3	3	3	3					3			3			
CO5	3	3	3	3					3			3			



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## DATA STRUCTURES LAB

(Common for EEE, ECE, CSE and IT)

## Course Outcomes:

- 1. Identify the appropriate recursive algorithms and analyse the performance of algorithms.
- 2. Understand and implement single, double, and circular linked-lists.
- 3. Implement linear data structures such as Stacks and Queues using array and linkedlist representations.
- 4. Implement nonlinear data structures such as trees and graphs.

(3/	CO- PO Mapping (3/2/1 indicates strength of correlation) 3-Strong, 2-Medium, 1-Weak													
COS	Program Outcomes(POs)													
	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO		
	1	2	3	4	5	6	7	8	9	10	11	12		
CO1	2	3	2											
CO2	2	2	3											
CO3		2	3											
CO4		2	3											



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## **ENGINEERING GRAPHICS LAB**

(Common for EEE, ECE, CSE, and IT)

## Course Outcomes:

- 1. Draft basic drawings elements.
- 2. Draw the projection of points, lines and planes on Cartesian coordinates using drafting software.
- 3. Draw the projection solids on Cartesian coordinates using drafting software.
- 4. Develop surfaces of regular solids, sectional solids and solids inclined to one axis using drafting software.
- 5. Convert and develop the isometric views on to orthographic projections using drafting software.

(3/2/	CO- PO Mapping (3/2/1 indicates strength of correlation) 3-Strong, 2-Medium, 1-Weak													
COS	Program Outcomes (POs)													
	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO		
	1	2	3	4	5	6	7	8	9	10	11	12		
CO1	3		1		3				2	3		2		
CO2	3		1		3				2	3		2		
CO3	3		1		3				2	3		2		
<b>CO4</b>	3		1		3				2	3		2		
CO5	3		1		3				2	3		2		