

22EN401	PLACEMENT AND SOFT SKILLS LABORATORY	SEMESTER			IV	
<b>PREREQUISITES</b>		<b>CATEGORY</b>	<b>HS</b>	<b>Credit</b>		<b>2</b>
1. Basic knowledge in reading skill and writing skill 2. Basic ability in listening skill and speaking skill		<b>HS</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>TH</b>
			<b>0</b>	<b>0</b>	<b>4</b>	<b>2</b>
<b>COURSE OBJECTIVES:</b>						
1.	To develop the students' confidence and help them to attend interviews successfully					
2.	To express opinions, illustrate with examples and conclude in group discussions					
3.	To acquire knowledge to write error free letters and prepare reports					
4.	To enhance the employability and soft skills of students					
<b>UNIT I</b>	<b>WRITING SKILLS</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>12</b>	
Letter seeking permission to go on industrial visit, Letter of invitation, Resume and cover letter, Job application, E-mail writing, Report writing, progress in project work						
<b>UNIT II</b>	<b>SPEAKING SKILLS</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>12</b>	
Welcome address and vote of thanks, Analysing and presenting business articles, Power point presentation, Presenting the visuals effectively, Group discussion, Participating in group discussions, Understanding group dynamics, Brain-storming the topics						
<b>UNIT III</b>	<b>SOFT SKILLS</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>12</b>	
Employability and career skills, Self-introduction, Introducing oneself to the audience, introducing the topic, Interview skills, Interview etiquette, Dress code, Body language, Attending job interviews						
<b>UNIT IV</b>	<b>VERBAL ABILITIES</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>12</b>	
Error Spotting, Listening Comprehension, Reading comprehension, Rearranging Jumbled sentences, Vocabulary						
<b>UNIT V</b>	<b>REASONING ABILITIES</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>12</b>	
Series completion, Analogy, Classification, Coding-Decoding, Blood relations, Seating Arrangements, Directional Sense, Venn Diagram, Logical reasoning, Statements and Conclusions						
<b>Total (60P) = 60 Periods</b>						

<b>Reference books:</b>	
1.	Campus Recruitment Complete Reference, Praxis Groups (5th edition), Hyderabad, 2017.
2.	John Seely, The Oxford Guide to Writing and Speaking, Oxford University Press, New Delhi, 2004.
3.	R.S. Aggarwal. A Modern Approach to Verbal & Non-Verbal Reasoning. 2018 S Chand Publication, 2018
<b>E-references:</b>	
1.	<a href="https://prepinsta.com/">https://prepinsta.com/</a>
2.	<a href="https://www.indiabix.com/">https://www.indiabix.com/</a>

<b>COURSE OUTCOMES:</b>		<b>Bloom's Taxonomy Mapped</b>
Upon completion of this course, the students will be able to:		
CO1	: participate in group discussion and interview confidently	L3: Applying
CO2	: develop adequate soft skills and career skills required for the workplace	L6: Creating
CO3	: make effective presentations on given topics	L6: Creating
CO4	: apply their verbal ability and reasoning ability in campus interviews	L3: Applying

<b>COURSE ARTICULATION MATRIX</b>															
<b>COs /POs</b>	<b>PO 1</b>	<b>PO 2</b>	<b>PO 3</b>	<b>PO 4</b>	<b>PO 5</b>	<b>PO 6</b>	<b>PO 7</b>	<b>PO 8</b>	<b>PO 9</b>	<b>PO1 0</b>	<b>PO1 1</b>	<b>PO1 2</b>	<b>PSO 1</b>	<b>PSO 2</b>	<b>PSO 3</b>
<b>CO1</b>	2	1											2	1	
<b>CO2</b>	3	2	1	1									3	2	
<b>CO3</b>	3	2			2								3	2	
<b>CO4</b>	3	2			2							2	3	2	1
<b>CO5</b>	3	2			2							2	3	2	1
<b>Avg</b>	<b>2.8</b>	<b>1.8</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2.8</b>	<b>1.8</b>	<b>1</b>
3/2/1-indicates strength of correlation (3- High, 2-Medium, 1- Low)															

<b>22EE407</b>	<b>ANALOG AND DIGITAL INTEGRATED CIRCUITS LABORATORY</b>			<b>SEMESTER</b>	<b>IV</b>
<b>PREREQUISITES</b>		<b>CATEGORY</b>	<b>PC</b>	<b>Credit</b>	
Electron Devices and Circuits Laboratory		<b>Hours/Week</b>	<b>L</b>	<b>T</b>	<b>P</b>
			<b>0</b>	<b>0</b>	<b>3</b>
<b>Course Objectives:</b>					
1.	To expose the characteristics and applications of Linear ICs and to study various digital electronics circuits used in simple system configuration				
<b>LIST OF EXPERIMENTS (Any 10 Experiments)</b>					
1.	Verification of IC 741 characteristics: inverting and non-inverting amplifier - voltage follower.				
2.	Verification of IC 741 Applications circuits: summer, differentiator and integrator.				
3.	Design of zero crossing detector and Schmitt trigger circuit using OP-AMP.				
4.	Design and testing of first order Low Pass and High Pass Active filters.				
5.	Design of Wien bridge oscillator and RC phase shift oscillator using OP-AMP.				
6.	Design of Astable and Monostable Multivibrator circuits using NE/SE 555 timer.				
7.	Design of Voltage controlled oscillator using NE/SE 566.				
8.	Design of Voltage regulator using IC723.				
9.	Design of +5V, 1A regulated Power supply using IC 7805.				
10.	Design of variable power supply using IC LM317.				
11.	Design of dual power supply using LM 320 / LM340.				
12.	Realize the switching functions using minimum number of NAND/NOR gates.				
13.	Design of code converter circuits.				
14.	Study of different types of Flip-Flops.				
15.	Design of 3-bit synchronous counters.				
16.	Implementation of Multiplexers , Demultiplexers , Encoders And Decoders				
17.	Design of 4-Bit shift registers using flip-flop.				
18.	Testing of asynchronous counters using flip-flops.				
<b>Total (0T+45P)= 45 Periods</b>					

<b>Reference Books:</b>	
1.	Roy Choudhury. D and Shail. B. Jain, "Linear Integrated Circuits", New Age International 4 <sup>th</sup> Edition, 2011.
2.	Gayakwad. R.A, "Op-amps & Linear Integrated Circuits", Pearson education, 4 <sup>th</sup> Edition, 2015

<b>Course Outcomes</b>		<b>Bloom's Taxonomy Mapped</b>
Upon completion of this course, the students will be able to:		
CO1	: Study the characteristics and mathematical applications of op-amp	L1: Remembering
CO2	: Design and verify wave form generator circuits and filter circuits using op-amp.	L3: Applying
CO3	: Design voltage regulator and power supply circuits using Linear ICs.	L3: Applying
CO4	: Realize the switching function using universal gates.	L6: Creating
CO5	: Realize the various types of combinational and sequential logic circuits	L5: Evaluating

COURSE ARTICULATION MATRIX															
COs/ POs	PO 1	PO 2	PO 3	PO 4	PO5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2	PS O3
CO1	3	2	1	3	1		2				2		3	2	1
CO2	3	2	2	2	2							1	3	3	2
CO3	3	1	1	2							1		3	2	1
CO4	3	2	2	1	3		2		2				2	3	1
CO5	3	1	1	1	1					2		2	2	3	1
<b>Avg</b>	3	1.6	1.4	1.8	1.75	0	2	0	2	2	1.5	1.5	2.6	2.6	1.2
3/2/1-indicates strength of correlation (3- High, 2-Medium, 1- Low)															

<b>22EE406</b>	<b>SYNCHRONOUS AND INDUCTION MACHINES LABORATORY</b>			<b>SEMESTER</b>	<b>IV</b>
<b>PREREQUISITIES</b>		<b>CATEGORY</b>	<b>PC</b>	<b>Credit</b>	
Nil		<b>Hours/Week</b>	<b>L</b>	<b>T</b>	<b>P</b>
			<b>0</b>	<b>0</b>	<b>3</b>
			<b>0</b>	<b>0</b>	<b>3</b>
<b>Course Objectives:</b>					
1.	To expose the students to operate of synchronous machines and induction motors and strength their experimental skill				
<b>LIST OF EXPERIMENTS</b>					
1.	Predetermination of Voltage Regulation of three-phase alternator by EMF and MMF methods.				
2.	Predetermination of Voltage Regulation of three-phase alternator by ZPF.				
3.	Slip test on three-phase salient pole alternator.				
4.	V and inverted V curves of synchronous motors				
5.	Load test on three phase Induction motor. Alternator.				
6.	Circle diagram for three phase induction motor with No load and blocked rotor test data.				
7.	Load test on three-phase Alternator.				
8.	Synchronization of three-phase alternator				
9.	Separation of losses in three phase induction motor.				
10.	Load test on single-phase induction motor.				
11.	Equivalent circuit and pre-determination of performance characteristics of single-phase induction motor.				
12.	Separation of losses in single phase transformer using alternator				
13.	Study of AC starters				
<b>Total (0T+45P)= 45 Periods</b>					

<b>Reference Books:</b>	
1.	EEE Department, "Induction and Synchronous Machines Laboratory Manual", 1 2019 ,Edition, Government college of Engineering

<b>Course Outcomes:</b>		<b>Bloom's Taxonomy Mapped</b>
Upon completion of this course, the students will be able to:		
CO1	: Understand and Analyze the voltage regulation of a given alternator using different methodologies	L2&L4:Understanding and Analyzing
CO2	: Analyze the performance of a given synchronous motor under various excitation conditions	L4:Analyzing
CO3	: Understand the Performance characteristics of induction and synchronous machines using direct and indirect methods.	L2:Understanding
CO4	: Develop the equivalent circuit and analyze the characteristics of single-phase induction motor	L4:Analyzing
CO5	: Analyze the losses , Starting and Speed control in AC machines.	L4:Analyzing

2.	Environmental Science, F;ldren D. Enger, Bredley F.Smith, WCD McGraw Hill 14" Edition 2015.
<b>E-Reference</b>	
1	<a href="http://www.onlinecourses.nptel.ac.in/">www.onlinecourses.nptel.ac.in/</a>
2	<a href="http://www.ePathshala.nic.in">www.ePathshala.nic.in</a>

<b>COURSE OUTCOMES:</b> Upon completion of this course, the students will be able to:		<b>Bloom's Taxonomy Mapped</b>
<b>CO1</b>	: 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.	L2: Understanding & L4: Analyzing
<b>CO2</b>	: Predict the methods to conserve energy and ways to make optimal use of the energy for the future.	L3: Applying

<b>COURSE ARTICULATION MATRIX</b>															
<b>COs/ POs</b>	<b>PO 1</b>	<b>PO 2</b>	<b>PO 3</b>	<b>PO 4</b>	<b>PO 5</b>	<b>PO 6</b>	<b>PO 7</b>	<b>PO 8</b>	<b>PO 9</b>	<b>PO 10</b>	<b>PO 11</b>	<b>PO 12</b>	<b>PS O1</b>	<b>PS O2</b>	<b>PS O3</b>
CO1	0	1	3	0	0	3	1	1	0	0	0	1	2	0	1
CO2	0	1	3	0	0	3	1	1	0	0	0	1	2	0	1
<b>Avg</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>1</b>
3/2/1-indicates strength of correlation (3- High, 2-Medium, 1- Low)															

22CYMC01	ENVIRONMENTAL SCIENCE		SEMESTER			IV
PREREQUISITIES		CATEGORY	MC	Credit		0
Basic Science		Hours/Week	L	T	P	TH
			2	0	1	3
<b>Course Objectives:</b>						
1.	To learn the concept of non-conventional energy systems.					
2.	To explore the environmental impact assessment and to learn about the consequence of different types of pollutants.					
3.	To have an ancient wisdom drawn from Vedas.					
4.	To acquire activity-based knowledge to preserve environment.					
5.	To learn about conservation of water and its optimization.					
<b>ENVIRONMENTAL AWARENESS</b>			<b>30</b>	<b>0</b>	<b>0</b>	<b>30</b>
<p>Various types of traditional power Plant --Advantage and Disadvantage of conventional Power Definition of non-conventional energy sources Plants – Conventional vs. Non-conventional power generation. – Types of non-conventional energy sources - India's current energy resources and their long-term viability – India's Energy requirement and management.</p> <p>Solar Energy Basics- Solar Thermal Energy- Solar Photovoltaic Energy- Benefits and Drawbacks -Effects on the environment and safety. Wind turbine power and energy- India's wind energy potential- Wind turbine types. Environmental benefits and impacts of offshore wind energy.</p> <p>Air pollution- Sources, effects, control, air quality standards, air pollution act, air pollution measurement. Water Pollution- Sources and its remedy, Soil Pollution-Sources and its remedy, disposal of solid waste. Greenhouse gases – effect, acid rain. Noise pollution reduction. Aspects of pollution from various power plants.</p>						
<b>ENVIRONMENTAL ACTIVITIES</b>			<b>0</b>	<b>0</b>	<b>15</b>	<b>15</b>
<p>Group activity on water management – Group discussion on recycle of waste (4R's)- Slogan making contest – Poster making event – Expert lecture on environmental awareness – Imparting knowledge on reduction of electricity usage.</p> <p>Identification and segregation of biodegradable and non-biodegradable waste – Campus cleaning activity – Plantation of trees in the college campus and local waste lands – Identification of varieties of plants and their usage – Shutting down the fans and ACs of the campus for an hour.</p>						
<b>Total (30L+15P) = 45 Periods</b>						

<b>Text Books:</b>	
1.	Elements of Environmental science and Engineering, P.Meenakshi, Prentice — Hall of India, New Delhi, 2009
2.	A Textbook of Environmental Chemistry and Pollution Control: (With Energy, Ecology, Ethics and Society) Revised Edition, Dr. S.S. Dara, D.D. Mishra Published by S. Chand & Company Ltd, 20 14.
<b>Reference Books:</b>	
1.	Introduction to Environmental Engineering and Science, Gilbert M. Masters; Wendell P. Ela Publisher Prentice-Hall India, 3rd Edition, 2008.

2.	Rapid Prototyping And Engineering Applications: A Toolbox For Prototype Development - Frank W.Liou, 2007
3.	Rapid Prototyping Technology: Selection And Application - COOPER K. G, 2001
<b>Reference Books:</b>	
1.	<a href="https://thesystemsthinker.com/wp-content/uploads/2016/03/Introduction-to-Systems-Thinking-IMS013Epk.pdf">https://thesystemsthinker.com/wp-content/uploads/2016/03/Introduction-to-Systems-Thinking-IMS013Epk.pdf</a>
2.	<a href="https://formlabs.com/blog/ultimate-guide-to-prototyping-tools-for-hardware-and-product-design/">https://formlabs.com/blog/ultimate-guide-to-prototyping-tools-for-hardware-and-product-design/</a>
3.	<a href="https://docs.kicad-pcb.org/">https://docs.kicad-pcb.org/</a>
4.	<a href="https://www.tinkercad.com/learn/circuits">https://www.tinkercad.com/learn/circuits</a>
5.	<a href="https://docs.github.com/en/free-pro-team@latest/actions/guides">https://docs.github.com/en/free-pro-team@latest/actions/guides</a>

<b>COURSE OUTCOMES:</b>		<b>Bloom's Taxonomy Mapped</b>
<b>Upon completion of the course, the students will be able to:</b>		
<b>CO1</b>	Understand the elements and principles of product and service design	Applying
<b>CO2</b>	Apply system thinking concepts in reverse engineering	Applying
<b>CO3</b>	Apply user research techniques to meet the UX needs of a customer and design a visual prototype	Applying
<b>CO4</b>	Develop prototyping models using the tools from mechanical prototyping models	Applying
<b>CO5</b>	Develop prototyping models using the tools from electrical and software prototyping methods	Applying

<b>COURSE ARTICULATION MATRIX</b>															
<b>CO/POs</b>	<b>PO 1</b>	<b>PO 2</b>	<b>PO 3</b>	<b>PO 4</b>	<b>PO 5</b>	<b>PO 6</b>	<b>PO 7</b>	<b>PO 8</b>	<b>PO 9</b>	<b>PO 10</b>	<b>PO 11</b>	<b>PO 12</b>	<b>PSO 1</b>	<b>PSO 2</b>	<b>PSO 3</b>
<b>CO1</b>	3	0	1	0	0	0	0	0	2	0	0	0	0	0	2
<b>CO2</b>	2	3	0	0	0	0	0	0	2	0	0	0	0	0	2
<b>CO3</b>	3	0	1	0	0	0	0	1	2	0	0	0	0	0	2
<b>CO4</b>	0	0	3	2	3	0	0	0	2	0	0	0	0	0	2
<b>CO5</b>	2	0	2	0	1	0	0	0	2	0	0	0	0	0	2
<b>Avg</b>	<b>2</b>	<b>0.6</b>	<b>1.4</b>	<b>0.4</b>	<b>0.8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>
3 / 2 / 1 – indicates strength of correlation (3 – High, 2 – Medium, 1 – Low)															