




RAMIREDDY SUBBARAMI REDDY
ENGINEERING COLLEGE
Engineering Excellence
Through Innovation


RAMIREDDY SUBBARAMI REDDY ENGINEERING COLLEGE, KADANUTHALA


(Approved by AICTE, Affiliated to JNTUA. An ISO 9001: 2015 Certified Institution.
NH-16, Kadanuthala, Bogole Mandal, Kavali- 524 142, S.P.S.R. Nellore, A.P.)


Department of Electrical & Electronics Engineering


**JNTUA-R15 REGULATION
ALL COURSES, THEIR
COURSE OUTCOME'S (COS),
PROGRAM OUTCOMES (POS),
PROGRAM SPECIFIC OUTCOMES (PSOS)
AND
MAPPING**

 <p>RAMIREDDY SUBBARAMI REDDY ENGINEERING COLLEGE Engineering Excellence Through Innovation</p>	RAMIREDDY SUBBARAMI REDDY ENGINEERING COLLEGE														
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	DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING														
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
	SEM: I-I				Reg: R15				AY:						
Course Code:	Course Name: FUNCTIONAL ENGLISH											L	T	P	C
15A52101	Prerequisite: NONE											3	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
2101.1	Acquire good listening skills to participate effectively in group discussions, debates, and interviews and writing skills for effective technical report writing. (BTL2)														
2101.2	Develop oral communication skills in English to speak fluently in various academic and social situations. (BTL3)														
2101.3	Identify deviant use of English both in spoken and written forms, and improve awareness of its in science and technology. (BTL2)														
2101.4	Understand the importance of reading for life, and career and thereby develop an interest for it. (BTL2)														
2101.5	Demonstrate fundamental skills required for critical thinking. (BTL2)														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
COs	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
2101.1	-	-	-	-	-	-	-	-	3	3	2	3	-	-	
2101.2	-	-	-	-	-	-	-	-	2	3	2	3	-	-	
2101.3	-	-	-	-	-	-	-	-	3	3	2	3	-	-	
2101.4	-	-	-	-	-	-	-	-	3	2	2	2	-	-	
2101.5	-	-	-	-	-	-	-	-	3	3	2	3	-	-	
AVG	-	-	-	-	-	-	-	-	3	3	3	3	-	-	
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low															

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	DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING														
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
	SEM: I-I				Reg: R15					AY:					
Course Code:	Course Name: Mathematics – I											L	T	P	C
15A4101	Prerequisite: None											3	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
4101.1	Solve the First, Second and Higher order D.Es and Applications of First Order D.E (BTL3)														
4101.2	Attain the knowledge of Applications of L.D.Es like Mechanical & Electrical Oscillatory circuits and deflection of beams (BTL2)														
4101.3	Familiarize with functions of several variables which is useful in Optimizations. (BTL6)														
4101.4	Determine important tools of calculus in Higher Dimensions (Multiple Integrals) (BTL5)														
4101.5	Become familiar with the applications of vector calculus to Engineering Problems. (BTL6)														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
COs	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
4101.1	3	2	2	2	-	-	-	-	-	-	-	2	2	2	
4101.2	3	2	2	2	-	-	-	-	-	-	-	2	2	2	
4101.3	2	3	3	2	-	-	-	-	-	-	-	2	2	3	
4101.4	2	3	2	2	-	-	-	-	-	-	-	1	2	2	
4101.5	3	3	2	2	-	-	-	-	-	-	-	2	2	2	
AVG	3	3	2	2	-	-	-	-	-	-	-	2	2	2	
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low															

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	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
	SEM: I – I				Reg: R15				AY:						
Course Code:	Course Name: Computer Programming											L	T	P	C
15A05101	Prerequisite: Nil											3	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
5101.1	Analyze overview of computer programming(BTL4)														
5101.2	Understand various statements in C and discuss the arrays, stings, functions (BTL2)														
5101.3	Illustrate pointers and understanding the scope of functions. (BTL2)														
5101.4	Develop the command line arguments and structures(BTL 3)														
5101.5	Understandthe file handling functions and pre-processor directives. (BTL2)														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
COs	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
5101.1	3	2	2	2	-	-	-	-	-	-	-	2	2	3	
5101.2	3	3	3	3	-	-	-	-	-	-	-	2	2	3	
5101.3	3	3	2	3	-	-	-	-	-	-	-	3	2	2	
5101.4	2	3	3	2	-	-	-	-	-	-	-	3	3	2	
5101.5	2	3	3	2	-	-	-	-	-	-	-	3	2	2	
AVG	3	3	3	2	-	-	-	-	-	-	-	3	2	2	
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	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
	SEM: I-I				Reg: R15				AY:						
Course Code:		Course Name: Engineering Physics										L	T	P	C
15A56101		Prerequisite: NONE										3	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
6101.1	Articulate interference, diffraction (BTL3), Analyze (BTL4). Device laser (BTL4), Develop optic fiber (BTL6)														
6101.2	Interpret crystallography (BTL2), Use ultrasonics (BTL3).														
6101.3	Illustrate quantum mechanics (BTL1) and solve electron theory (BTL3).														
6101.4	Categorize semiconductors and magnetic materials (BTL4).														
6101.5	Explain superconductivity (BTL1) and Connect nano materials(BTL4)														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
COs	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
6101.1	2	3	2	2	3	1	-	-	-	-	-	1	2	3	
6101.2	3	2	3	2	2	3	-	-	-	-	-	1	3	3	
6101.3	2	3	2	1	2	2	-	-	-	-	-	2	3	3	
6101.4	3	3	3	1	3	1	-	-	-	-	-	1	2	2	
6101.5	3	2	2	2	2	2	-	-	-	-	-	3	2	2	
AVG	3	3	3	2	3	3						2	3	3	
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low															

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	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
	SEM: I-I				Reg: R15				AY:						
Course Code:	Course Name: ENGINEERING DRAWING											L	T	Drg	C
15A03101	Prerequisite: None											0	0	6	3
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
3101.1	Draw various curves applied in engineering. [BTL2]														
3101.2	Show projections of points, lines, planes and solids graphically. [BTL2]														
3101.3	Draw the development of surfaces of solids. [BTL2]														
3101.4	Use computers as a drafting tool. [BTL2]														
3101.5	Draw isometric and orthographic drawings using CAD packages. [BTL2]														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
COs	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
3101.1	3	1	1	-	-	-	-	-	-	3	-	-	3	1	
3101.2	3	3	2	-	-	-	-	-	-	3	-	-	3	1	
3101.3	3	1	1	-	-	-	-	-	-	3	-	-	3	1	
3101.4	3	3	3	-	-	-	-	-	1	3	-	-	3	1	
3101.5	3	2	3	1	-	-	-	-	2	3	-	-	3	1	
AVG	3	2	2	-	-	-	-	-	1	3	-	-	3	1	
3/2/1 Indicates Strength of Correlation. 3-High, 3-Medium and 1-Low															



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COURSE OUTCOMES & MAPPING OF COs with POs & PSOs

SEM: I-I

Reg: R15

AY:

Course Code:

**Course Name: ENGLISH LANGUAGE COMMUNICATION
SKILLS LAB**

L

T

P

C

15A52102

Prerequisite: None

0

0

4

2

L-Lecture T-Tutorial P-Practical C-Credits

COURSE OUTCOMES (COs)

CO No.	COURSE OUTCOME
2102.1	Pronounce words correctly using speech sounds, word stress, intonation and rhythm. (BTL-2)
2102.2	Acquire proficiency in spoken English. (BTL-2)
2102.3	Apply English language skills effectively for interviews, group discussions, public speaking and debates with sheer confidence. (BTL-3)
2102.4	Develop their employability skills. (BTL-3)
2102.5	Identify techniques for writing a speech on an occasion and furthermore, give reviews on a book orally or in written form. (BTL-3)

Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)

COs	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
2102.1	-	-	-	-	-	-	-	-	3	3	-	2	-	-
2102.2	-	-	-	-	-	-	-	-	3	3	2	3	-	-
2102.3	-	-	-	-	-	-	-	-	3	3	2	3	-	-
2102.4	-	-	-	-	-	-	-	-	3	3	-	3	-	-
2102.5	-	-	-	-	-	-	-	-	2	3	-	3	-	-
AVG	-	-	-	-	-	-	-	-	3	3	2	3	-	-

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COURSE OUTCOMES & MAPPING OF COs with POs & PSOs

SEM: I-I

Reg: R15

AY:

Course Code:	Course Name: ENGINEERING PHYSICS LAB	L	T	P	C
15A56102	Prerequisite: None	0	0	4	2

L-Lecture T-Tutorial P-Practical C-Credits

COURSE OUTCOMES (COs)

CO No.	COURSE OUTCOME
6102.1	Would recognize the important of optical phenomenon like Interference and diffraction.
6102.2	Would have acquired the practical application knowledge of optical fiber, semiconductor, dielectric and magnetic materials, crystal structure and lasers by the study of their relative parameters.
6102.3	Would recognize the significant importance of nano materials in various engineering fields.

Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)

COs	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
6102.1	3	1	1	-	-	-	-	-	-	-	-	-	1	
6102.2	3	3	2	-	-	-	-	-	-	-	-	-	1	
6102.3	3	1	1	-	-	-	-	-	-	-	-	-	1	
AVG	3	2	2	-	-	-	-	-	-	-	-	-	1	

3/2/1 Indicates Strength of Correlation. 3-High, 3-Medium and 1-Low



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COURSE OUTCOMES & MAPPING OF COs with POs & PSOs

SEM: I-I

Reg: R15

AY:

Course Code:

Course Name: COMPUTER PROGRAMMING LAB

L

T

P

C

15A05102

Prerequisite: None

0

0

4

2

L-Lecture T-Tutorial P-Practical C-Credits

COURSE OUTCOMES (COs)

CO No.

COURSE OUTCOME

5102.1

Apply problem solving techniques to find solutions to problems (BTL3)

5102.2

Able to use C language features effectively and implement solutions using C language. (BTL4)


5102.3

Improve logical skills. (BTL6)

Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)

COs	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
3101.1	3	1	1	-	-	-	-	-	-	3	-	-	3	1
3101.2	3	3	2	-	-	--	-	-	-	3	-	-	3	1
3101.3	3	1	1	-	-	--	-	-	-	3	-	-	3	1
AVG	3	2	2	-	-	-	-	-	-	1	3	-	3	1

3/2/1 Indicates Strength of Correlation. 3-High, 3-Medium and 1-Low

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	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
	SEM: I-II				Reg: R15				AY:						
Course Code:	Course Name: MATHEMATICS – II											L	T	P	C
15A54201	Prerequisite: None											3	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
4201.1	Understand the usage of Laplace Transforms. (BTL2)														
4201.2	Evaluate the Fourier Series expansion of periodic functions. (BTL5)														
4201.3	Understand the usage of Fourier Transforms. (BTL2)														
4201.4	Formulate/Solve/Classify the solutions of P.D. Equations and also find the solutions of 1-Dimensional Wave equations and Heat equations. (BTL6)														
4201.5	Understand the usage of Z-Transforms. (BTL2)														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
COs	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
4201.1	3	2	2	2	-	-	-	-	-	-	-	1	2	3	
4201.2	2	3	2	2	-	-	-	-	-	-	-	1	2	2	
4201.3	3	2	2	2	-	-	-	-	-	-	-	1	2	2	
4201.4	3	2	2	2	-	-	-	-	-	-	-	-	3	2	
4201.5	3	2	2	2	-	-	-	-	-	-	-	1	2	2	
AVG	3	2	2	2	-	-	-	-	-	-	-	1	2	2	
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low															



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COURSE OUTCOMES & MAPPING OF COs with POs & PSOs

SEM: I-II

Reg: R15

AY:

Course Code:	Course Name: ENGLISH FOR PROFESSIONAL COMMUNICATION	L	T	P	C
15A52201	Prerequisite: NONE	3	1	0	3

L-Lecture T-Tutorial P-Practical C-Credits

COURSE OUTCOMES (COs)

CO No.	COURSE OUTCOME
2201.1	Participate effectively in debates on modern corporatism and listen, and speak well in English in group discussions. (BTL3)
2201.2	Recall the alternative sources of energy by listening, summarizing and rewriting reports. (BTL1)
2201.3	Develop report writing skills. (BTL3)
2201.4	Interpret charts and tables. (BTL2)
2201.5	Communicate effectively in interviews by developing required competence thereby enhancing improving job prospects.(BTL2)

Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)

COs	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
2201.1	-	-	-	-	-	-	-	-	3	3	2	2	-	-
2201.2	-	-	-	-	-	-	-	-	2	3	-	2	-	-
2201.3	-	-	-	-	-	-	-	-	3	3	2	3	-	-
2201.4	-	-	-	-	-	-	-	-	3	3	3	3	-	-
2201.5	-	-	-	-	-	-	-	-	3	3	1	3	-	-
AVG	0	0	0	0	0	0	0	0	3	3	3	3	-	-

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COURSE OUTCOMES & MAPPING OF COs with POs & PSOs

SEM: I-II

Reg: R15

AY:

Course Code:	Course Name: ENGINEERING CHEMISTRY	L	T	P	C
15A51101	Prerequisite: None	3	1	0	3

L-Lecture T-Tutorial P-Practical C-Credits


COURSE OUTCOMES (COs)


CO No.	COURSE OUTCOME
1101.1	Differentiate between hard and soft water.(BTL3)
1101.2	Discuss BUNA-S and BUNA-N Elastomers (BTL2)
1101.3	Understand the electrochemical sources of energy. (BTL3)
1101.4	Discuss about solid, liquid, gaseous fuels (BTL2)
1101.5	Understand the principles of lubricants and CNTs (BTL2)

Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)

Cos	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
1101.1	3	3	3	2	2	2	-	-	2		3	2	3	-
1101.2	2	2	3	3	-	1	1	-	-	-	-	2	-	2
1101.3	3	2	3	2	-	-	3	-	1	-	-	-	3	-
1101.4	2	2	2	2	-	-	-	-	-	-	1	-	2	2
1101.5	2	1	1	2		1	-	-	-	-	-	-	2	-
AVG	2	2	2	2	2	1	2	-	2	-	2	2	2	2

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	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
	SEM: I-II	Reg: R15					AY:								
Course Code:	Course Name: ENVIRONMENTAL STUDIES											L	T	P	C
15A01101	Prerequisite: None											3	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
1101.1	Understand the various natural resources (BTL2)														
1101.2	Describe about the Biodiversity and Ecosystem (BTL2)														
1101.3	Discuss about the pollution aspects (BTL3)														
1101.4	To know about the social issues related to environment and their protection acts (BTL1)														
1101.5	Describe about the population explosion and welfare programme (BTL2)														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
Cos	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
1101.1	3	2	3	2	3	-	2	-	2	-	-	-	2	2	
1101.2	2	2	3	2	-	2	3	-	-	-	-	-	3	2	
1101.3	3	2	3	2	-	-	2	-	-	-	-	3	3	2	
1101.4	2	2	3	2	-	-	2	2	-	-	-	-	-	3	
1101.5	2	2	3	2	3	-	3	-	-	-	-	3	-	3	
AVG	2	2	3	2	3	2	2	2	2	-	-	3	3	3	
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low															

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	DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING														
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
	SEM: I-II				Reg: R15				AY:						
Course Code:	Course Name: ELECTRICAL CIRCUITS - I											L	T	P	C
15A02201	Prerequisite: None											3	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
2201.1	Determine the equivalent impedance of given network by using network reduction techniques and determine the current, voltage and power in any element(BTL3)														
2201.2	To understand voltage, current and power relationships in 1- ϕ AC circuits with basic elements R,L,C and determine the real power, reactive power, power factor etc,. For a Given a circuit and the excitation (BTL3)														
2201.3	Apply methods to find current locus diagrams of various circuits and explain the resonance phenomenon (BTL2,BTL3)														
2201.4	Apply the network theorems suitably(BTL3)														
2201.5	Determine various two port network parameters (BTL3)														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
Cos	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
2201.1	2	3	2	1	-	-	-	-	-	-	-	2	1	2	
2201.2	3	3	2	1	-	-	-	-	-	-	-	2	1	2	
2201.3	3	3	2	1	-	-	-	-	-	-	-	2	1	2	
2201.4	2	3	3	2	-	-	-	-	-	-	-	1	1	2	
2201.5	3	3	2	1	-	-	-	-	-	-	-	1	1	2	
AVG	3	3	2	2	-	-	-	-	-	-	-	1	1	2	
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low															



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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

COURSE OUTCOMES & MAPPING OF COs with POs & PSOs

SEM: I-II

Reg: R15

AY:

Course Code:

Course Name: ENGINEERING CHEMISTRY LAB

L

T

P

C

15A51102

Prerequisite: None

0

0

4

2

L-Lecture T-Tutorial P-Practical C-Credits

COURSE OUTCOMES (COs)

CO No.	COURSE OUTCOME
1102.1	Determine the cell constant and conduct of the solutions.(BTL3)
1102.2	Estimate the ferrous iron and Strength of an acid in battery. (BTL2)
1102.3	Prepare the advanced materials and analyse the properties. (BTL3)
1102.4	Analyse the IR and NMR spectroscopy. (BTL3)
1102.5	Analyse the separation method of HPLC and TLC (BTL3)

Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)

Cos	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
1102P.1	2	3	-	2	-	1	3	-	2	2	3	-	3	-
1102P.2	3	2	-	1	-	-	-	2	3	3	2	-	-	2
1102P.3	3	2	-	1	-	-	-	2	3	3	2	-	3	-
1102P.4	3	2	-	1	2	2	2	-	3	3	2	-	2	2
1102P.5	2	3	-	-	-	-	-	-	2	2	3	-	2	-
AVG	3	3	-	1	2	2	2	2	3	3	3	-	2	2

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low



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COURSE OUTCOMES & MAPPING OF COs with POs & PSOs

SEM: I-II

Reg: R15

AY:

Course Code:

Course Name: ELECTRICAL CIRCUITS LAB

L

T

P

C

15A02202

Prerequisite: None

0

0

4

2

L-Lecture T-Tutorial P-Practical C-Credits

COURSE OUTCOMES (COs)

CO No.	COURSE OUTCOME
2202.1	Demonstrate and apply various theorems and verify practically(BTL2)
2202.2	Determine Self, Mutual Inductances and Coefficient of Coupling of magnetic coil(BTL2)
2202.3	Determine and Draw Locus diagrams and resonance curves of electrical circuits(BTL3)
2202.4	Experiment with active, reactive power measurements in three phase balanced Star circuits(BTL3)
2202.5	Experiment with active, reactive power measurements in three phase balanced Delta circuits(BTL3)
2202.6	Develop circuits to Measurement of 3-Phase Power by Two Wattmeter Method for Unbalanced Loads(BTL3)
2202.7	Determine various two port network parameters of simple electrical circuits (BTL3)

Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)

Cos	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
2202.1	2	2	1	-	-	-	-	-	1	-	-	2	1	1
2202.2	2	2	1	-	-	-	-	-	1	-	-	2	1	1
2202.3	2	2	1	-	-	-	-	-	1	-	-	2	1	1
2202.4	2	2	1	-	-	-	-	-	1	-	-	2	1	1
2202.5	2	2	1	-	-	-	-	-	1	-	-	2	1	1
2202.6	2	2	1	-	-	-	-	-	1	-	-	2	1	1
2202.7	2	2	1	-	-	-	-	-	1	-	-	2	1	1
AVG	2	2	1	-	-	-	-	-	1	-	-	2	1	1

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low



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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

COURSE OUTCOMES & MAPPING OF COs with POs & PSOs

SEM: I-II

Reg: R15

AY: 2017-2018

Course Code:

Course Name: ENGINEERING & I.T. WORKSHOP

L

T

P

C

15A99201

Prerequisite: None

0

0

4

2

L-Lecture T-Tutorial P-Practical C-Credits

COURSE OUTCOMES (COs)

CO No.	COURSE OUTCOME
9201.1	Disassemble and Assemble a Personal Computer and prepare the computer ready to use [BTL6]
9201.2	Prepare the Documents using Word processors [BTL3]
9201.3	Prepare Slide presentations using the presentation tool [BTL3]
9201.4	Interconnect two or more computers for information sharing [BTL4]
9201.5	Access the Internet and Browse it to obtain the required information [BTL6]
9201.6	Install single or dual operating systems on computer [BTL3]

Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)

Cos	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
9201.1	2	2	1	-	-	-	-	-	1	-	-	2	1	1
9201.2	2	2	1	-	-	-	-	-	1	-	-	2	1	1
9201.3	2	2	1	-	-	-	-	-	1	-	-	2	1	1
9201.4	2	2	1	-	-	-	-	-	1	-	-	2	1	1
9201.5	2	2	1	-	-	-	-	-	1	-	-	2	1	1
9201.6	2	2	1	-	-	-	-	-	1	-	-	2	1	1
AVG	2	2	1	-	-	-	-	-	1	-	-	2	1	1

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low



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COURSE OUTCOMES & MAPPING OF COs with POs & PSOs

SEM: II-I

Reg: R15

AY:

Course Code:	Course Name: MATHEMATICS-III	L	T	P	C
15A54301	Prerequisite: NIL	3	1	0	3

L-Lecture T-Tutorial P-Practical C-Credits

COURSE OUTCOMES (COs)

CO No.	COURSE OUTCOME
4301.1	Develop the use of matrix algebra techniques i.e needed by engineers for practical applications (BTL6)
4301.2	Apply Numerical methods to solve Algebraic and Transcendental equations. (BTL3)
4301.3	Derive Interpolating polynomials using Interpolation formulae. (BTL4)
4301.4	Solve Integral equations using Trapezoidal Rule, Simpson's 1/3 and 3/8 rules. (BTL3)
4301.5	Solve Differential & Integral Equations numerically. (BTL3)

Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)

COs	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
4301.1	2	2	3	1	-	-	-	-	-	-	-	-	1	1
4301.2	2	3	2	1	1	-	-	-	-	-	-	1	1	1
4301.3	2	2	1	1	1	-	-	-	-	-	-	-	1	1
4301.4	2	2	2	2	2	-	-	-	-	-	-	2	1	1
4301.5	2	2	2	2	2	-	-	-	-	-	-	2	1	1
AVG	2	2	2	2	2	-	-	-	-	-	-	2	1	1

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low



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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

COURSE OUTCOMES & MAPPING OF COs with POs & PSOs

SEM: II-I

Reg: R20

AY:

Course Code:	Course Name: ELECTRICAL CIRCUITS-II	L	T	P	C
15A02301	Prerequisite: Electrical Circuits-I	3	1	0	3

L-Lecture T-Tutorial P-Practical C-Credits


COURSE OUTCOMES (COs)


CO No.	COURSE OUTCOME
2301.1	Determine the transient response of R-L, R-C, R-L-C circuits for D.C. and A.C. excitations [BTL2]
2301.2	Analyze three phase balanced and unbalanced circuits and determine line voltages, line currents, phase voltages and phase currents [BTL4]
2301.3	Apply Fourier transforms to electrical circuits excited by non-sinusoidal sources [BTL3]
2301.4	Analysis of electrical networks, duality and dual networks [BTL4]
2301.5	Calculate different types of filters [BTL4]


Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)


COs	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
2301.1	2	2	1	-	-	-	-	-	-	-	-	1	1	1
2301.2	2	2	1	-	-	-	-	-	-	-	-	1	1	1
2301.3	2	2	1	-	-	-	-	-	-	-	-	1	1	1
2301.4	2	2	1	-	-	-	-	-	-	-	-	1	1	1
2301.5	2	2	1	-	-	-	-	-	-	-	-	1	1	1
AVG	2	2	2	-	-	-	-	-	-	-	-	1	1	1

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low

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	DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING													
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs													
SEM: II-I			Reg: R15					AY:						
Course Code:	Course Name: ELECTRICAL MACHINES-I										L	T	P	C
15A02302	Prerequisite: NIL										3	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits														
COURSE OUTCOMES (COs)														
CO No.	COURSE OUTCOME													
2302.1	To illustrate the principles of electromechanical energy conversion, to extract energy and force in a singly and multi excited systems. (BTL4)													
2302.2	To examine the construction and types of DC generators, analyze armature reaction and commutation in DC generators (BTL4)													
2302.3	To evaluate the failure of DC generator to build up voltage, get the complete idea of types of DC generators, their characteristics, compute the load shared by each generator when several generators are connected in parallel. (BTL5)													
2302.4	To gain Knowledge on Principle of DC motors, their types and their characteristics, determine the gross torque, useful torque developed by the motor, determine speed control of DC motors and operation of starters. (BTL1)													
2302.5	To estimate the losses of DC generators and motors, perform the testing of DC motors by direct and indirect methods and hence calculate the efficiency (BTL5)													
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)														
COs	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
2302.1	2	2	1	0	0	-	-	-	0	1	0	1	1	1
2302.2	3	3	1	2	0	-	-	-	0	1	0	3	3	2
2302.3	2	3	3	3	2	-	-	-	0	1	0	3	2	3
2302.4	3	1	2	2	2	-	-	-	0	1	0	2	2	3
2302.5	2	3	3	2	2	-	-	-	0	1	0	3	2	1
AVG	2	3	2	2	2				0	1	0	3	2	1
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low														

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	DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING														
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
SEM: II-I				Reg: R15				AY:							
Course Code:	Course Name: Control Systems Engineering											L	T	P	C
15A02303	Pre-requisite:None											3	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
2303.1	Understand the concepts of control systems classification, feedback effect, mathematical modeling, time response and frequency response characteristics (BTL2)														
2303.2	Apply the concepts of block diagram reduction, signal flow graph method and root locus, bode, Nyquist, polar plots for stability calculations, and demonstrate the use of these techniques (BTL3)														
2303.3	Analyse time response analysis ,error constants, and stability characteristics of a given mathematical model using different methods (BTL4)														
2303.4	Design and develop different compensators, controllers and their performance evaluation for various conditions. Implement them in solving various engineering applications (BTL6)														
2303.5	Understand the concepts of state space analysis ,controllability and observability (BTL2)														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
Cos	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
2303.1	3	3	1	1	1	1	-	-	-	1	-	1	2	1	
2303.2	3	3	1	1	1	1	-	-	-	1	-	1	2	1	
2303.3	3	3	1	1	1	1	-	-	-	1	-	1	2	1	
2303.4	3	3	1	1	1	1	-	-	-	1	-	1	2	1	
2303.5	3	3	1	1	1	1	-	-	-	1	-	1	2	1	
AVG	3	3	1	1	1	1	-	-	-	1	-	1	2	1	
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low															

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	DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING													
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs													
SEM: II-I				Reg: R15				AY:						
Course Code:	Course Name: ELECTRONIC DEVICES AND CIRCUITS										L	T	P	C
15A04301	Prerequisite: None										3	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits														
COURSE OUTCOMES (COs)														
CO No.	COURSE OUTCOME													
4301.1	Analyze the operating principles of major electronic devices, its characteristics and applications.[L4]													
4301.2	Design and analyze the DC bias circuitry of BJT and FET.[L6]													
4301.3	Design and analyze basic transistor amplifier circuits using BJT and FET[L6]													
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)														
Cos	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
4301.1	3	2	1	-	-	-	-	-	-	-	-	-	2	1
4301.2	3	2	1	-	-	-	-	-	-	-	-	-	2	1
4301.3	3	3	2	-	-	-	-	-	-	-	-	-	2	1
AVG	3	3	2	-	-	-	-	-	-	-	-	-	2	1
3/2/1 Indicates Strength of Correlation. 3-High, 3-Medium and 1-Low														

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	DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING														
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
SEM: II-I				Reg: R20				AY:							
Course Code:	Course Name: Data Structures											L	T	P	C
15A05201	Prerequisite: None											3	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
5201.1	Understand different Data Structures [BTL2]														
5201.2	Understand Searching and Sorting technique [BTL2]														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
COs	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
5201.1	2	2	1	2	-	--	-	-	-	-	-	1	2	1	
5201.2	2	2	1	2	-	--	-	-	-	-	-	1	2	1	
AVG	2	2	1	2	-	--	-	-	-	-	-	1	2	1	
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low															



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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

COURSE OUTCOMES & MAPPING OF COs with POs & PSOs

SEM: II-I

Reg: R15

AY:

Course Code:	Course Name: Electrical Circuits & Simulation Lab	L	T	P	C
15A02305	Prerequisite: None	0	0	4	2

L-Lecture T-Tutorial P-Practical C-Credits


COURSE OUTCOMES (COs)


CO No.	COURSE OUTCOME
2305.1	Explain electric circuit concepts by interpreting the simulation results(BTL2)
2305.2	Design RLC series circuit for specified frequency response(BTL6)
2305.3	Design RL, RC and RLC circuits for specified transient response(BTL6)
2305.4	Analyze three phase balanced and unbalanced circuits(BTL4)
2305.5	Verifies the maximum power dissipation (BTL5)


Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)


COs	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
2305.1	3	2	3	3	3	-	-	-	3	2	-	2	1	2
2305.2	3	2	3	2	-	-	-	-	3	2	-	2	1	2
2305.3	3	2	3	2	3	-	-	-	3	2	-	2	1	2
2305.4	3	3	1	1	-	-	-	-	3	2	-	2	1	2
2305.5	3	2	1	1	-	-	-	-	3	2	-	3	1	2
AVG	3	2	2	2	3	-	-	-	3	2	-	2	1	2


3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low


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	DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING														
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
	SEM: II-I				Reg: R15				AY:						
Course Code:	Course Name: ELECTRONIC DEVICES AND CIRCUITS LABORATORY											L	T	P	C
15A04305	Pre requisite: None											0	0	4	2
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
4305.1	Understand the parameters of Diodes and transistors from the characteristics. (BTL2)														
4305.2	Demonstrate the rectifier and voltage regulator circuits using diodes. (BTL2)														
4305.3	Construct various amplifiers using BJTs and FETs. T(L6)														
4305.4	Analyze the characteristics of SCR and UJT. (BTL4)														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
Cos	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
4305.1	3	2	1	1	-	-	-	-	1	1	2	1	3	1	
4305.2	3	2	1	1	-	-	-	-	1	1	2	1	3	1	
4305.3	3	2	1	1	-	-	-	-	1	1	2	1	3	1	
4305.4	3	3	2	1	-	-	-	-	1	1	2	1	3	1	
AVG	3	2	2	1	-	-	-	-	1	1	2	1	3	1	
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low															


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	DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING														
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
SEM: II-II				Reg: R15				AY:							
Course Code:	Course Name: Mathematics-IV											L	T	P	C
15A54402	Prerequisite: NIL											3	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
4402.1	Learn the utilization of Special functions such as Beta and Gamma functions. (BTL4)														
4402.2	Learn the utilization of Bessel functions and Legendre Polynomials. (BTL1)														
4402.3	Understand the analyticity of complex functions and conformal mappings. (BTL2)														
4402.4	Apply Cauchy's Integral theorem and Cauch's integral formula. (BTL3)														
4402.5	Evaluate improper integrals of complex functions using Residue theorem. (BTL5)														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
COs	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
4402.1	2	3	1	2	-	-	-	-	-	-	-	-	1	1	
4402.2	2	2	1	2	-	-	-	-	-	-	-	-	1	1	
4402.3	3	2	2	3	1	-	-	-	-	-	-	1	1	1	
4402.4	3	2	2	2	-	-	-	-	-	-	-	2	1	1	
4402.5	2	2	1	3	-	-	-	-	-	-	-	1	1	1	
AVG	2	2	1	2	1	-	-	-	-	-	-	1	1	1	
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low															

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	DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING														
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
	SEM: II-II				Reg: R15				AY:						
Course Code:	Course Name: MANAGERIAL ECONOMICS AND FINANCIAL ANALYSIS											L	T	P	C
15A52301	Prerequisite: NIL											3	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
2301.1	Understand the basic concepts of Managerial economics. (BTL2)														
2301.2	Explain the concepts of cost and production and can calculate the breakeven point.(BTL2)														
2301.3	Apply the Concept of Production cost and revenues for effective Business decision. (BTL3)														
2301.4	Prepare and evaluate the financial statements. (BTL5)														
2301.5	Analyze how to invest their capital and maximize returns. (BTL4)														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
COs	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
2301.1	2	-	-	-	2	1	-	-	-	-	-	1	-	-	
2301.2	3	-	1	-	-	2	-	-	-	-	-	2	2	2	
2301.3	2	-	-	-	-	1	-	-	-	-	-	1	-	-	
2301.4	2	-	-	-	2	1	-	2	-	-	-	1	-	-	
2301.5	2	-	1	-	2	1	-	-	-	-	-	1	-	-	
AVG	2	-	1	-	2	1	-	2	-	-	-	1	2	2	
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low															

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	DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING														
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
SEM: II-II				Reg: R15				AY:							
Course Code:	Course Name: Electrical Machines – II											L	T	P	C
15A02401	Prerequisite: NIL											3	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
2401.1	Summarize the constructional aspects of a single phase transformer, emf equation, draw the equivalent circuit, extract various losses and hence calculate the efficiency and regulation. (BTL6)														
2401.2	Analyzing O.C & S.C tests on a single phase transformer and finding the regulation and efficiency, Examine different types of three-phase transformer connections like star-star etc, inspect auto transformers, their construction, analyze the parallel operation of transformers and load sharing (BTL4)														
2401.3	Elaborate the poly phase induction motors, their constructional details, gain knowledge on slip, rotor related parameters. (BTL2)														
2401.4	Determine the starting torque, maximum torque, slip at maximum torque, draw the circle diagram of a three-phase induction motor and predetermine the performance characteristics. (BTL3)														
2401.5	Apply speed control methods for a three-phase induction motor, implement starting methods. (BTL3)														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
COs	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
2401.1	3	2	2	3	-	-	-	-	-	-	-	1	2	1	
2401.2	3	3	3	3	-	-	-	-	-	-	-	1	2	-	
2401.3	3	2	1	3	-	-	-	-	-	-	-	1	2	1	
2401.4	3	1	1	3	-	-	-	-	-	-	-	1	2	1	
2401.5	3	1	3	3	-	-	-	-	-	-	-	1	2	-	
AVG	3	2	2	3	0	0	0	0	0	0	0	1	2	1	
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low															

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	DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING														
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
	SEM: II-II				Reg: R15				AY:						
Course Code:	Course Name: ELECTRICAL POWER GENERATING SYSTEMS											L	T	P	C
15A02402	Prerequisite: None											3	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
2402.1	Determine the coal requirement, cost per kWh generation and number of units generated for thermal power station [BTL5]														
2402.2	Describe Estimate the required flow of river water, cost of generation and number of units generated in hydel power generation [BTL2]														
2402.3	Remember and understand the concepts of wind and solar power generation [BTL2]														
2402.4	Explain economic aspects of biogas [BTL2]														
2402.5	Explain and Plot the load curve, load duration curve and hence determine the load capacity of the plant [BTL2]														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
COs	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
2402.1	2	2	2	1	-	-	-	-	-	-	-	1	1	2	
2402.2	2	2	2	1	-	-	-	-	-	-	-	1	1	1	
2402.3	2	2	2	1	-	-	-	-	-	-	-	1	1	2	
2402.4	2	2	2	1	-	-	-	-	-	-	-	1	1	1	
2402.5	2	2	2	1	-	-	-	-	-	-	-	1	1	2	
AVG	2	2	2	1	-	-	-	-	-	-	-	1	1	2	
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low															

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	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
SEM: II-II				Reg: R15				AY:							
Course Code:	Course Name: Electromagnetic Fields											L	T	P	C
15A02403	Prerequisite: NIL											3	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
2403.1	Knowledge on basic principles, concepts and fundamental laws of electromagnetic fields.(BTL2)														
2403.2	Understands the concept of Conductors, Dielectrics ,polarization process(BTL2)														
2403.3	Knowledge of different laws for magneto statics, Develop MFI for different applications(BTL2)														
2403.4	The knowledge to understand 3-dimensional co-ordinate systems, electrostatics, magneto statics, time-varying fields and interaction between electricity and magnetism.(BTL2)														
2403.5	Understand the concepts of Magnetic Potential and Time varying Fields (BTL2)														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
COs	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
2403.1	3	2	2	2	3	-	-	-	-	-	-	2	1	1	
2403.2	2	1	2	2	2	-	-	-	-	-	-	1	1	1	
2403.3	3	3	2	2	3	-	-	-	-	-	-	-	1	1	
2403.4	3	3	2	2	3	-	-	-	-	-	-	3	1	1	
2403.5	3	3	2	2	3	-	-	-	-	-	-	2	1	1	
AVG	3	3	2	2	3	-	-	-	-	-	-	2	1	1	
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low															

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	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
SEM: II-II				Reg: R15				AY:							
Course Code:	Course Name: ANALOG ELECTRONIC CIRCUITS											L	T	P	C
15A04409	Prerequisite: NIL											3	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
4409.1	Methods of biasing transistors & Design of simple amplifier circuits. [BTL3,BTL6]														
4409.2	Mid – band analysis of amplifier circuits using small - signal equivalent circuits to determine gain, input impedance and output impedance. [BTL3]														
4409.3	Method of calculating cutoff frequencies and to determine bandwidth (BTL5)														
4409.4	Design and analyze different Oscillator circuits [BTL6]														
4409.5	Design of circuits for linear wave shaping and Multi-vibrators.[BTL6]														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
COs	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
4409.1	2	2	3	1	-	-	-	-	-	-	-	1	1	2	
4409.2	2	2	3	1	-	-	-	-	-	-	-	1	1	1	
4409.3	2	2	3	1	-	-	-	-	-	-	-	-	1	1	
4409.4	2	2	2	1	-	-	-	-	-	-	-	-	1	1	
4409.5	2	2	2	1	-	-	-	-	-	-	-	1	1	1	
AVG	2	2	2	1	0	0	0	0	0	0	0	1	1	1	
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low															



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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

COURSE OUTCOMES & MAPPING OF COs with POs & PSOs

SEM: II-II

Reg: R15

AY:

Course Code:

Course Name: ELECTRICAL MACHINES LABORATORY-I

L

T

P

C

15A02404

Prerequisite: NIL

0

0

4

2

L-Lecture T-Tutorial P-Practical C-Credits


COURSE OUTCOMES (COs)

CO No.	COURSE OUTCOME
2404.1	Conduct experiments to obtain the no-load and load characteristics of D.C. Shunt Generators (BTL3)
2404.2	Conduct and Analyze Direct and Indirect Tests on DC shunt motor (BTL3, BTL4)
2404.3	Conduct experiments to obtain the load characteristics of D.C. compound Generators (BTL3)
2404.4	Understand and analyze speed control techniques and efficiency of DC machines (BTL1, BT L6)
2404.5	Analyze the losses and determine the efficiency of DC Motors (BTL6)

Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)

COs	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
2404.1	3	2	3	2	1	0	2	0	3	2	2	2	2	1
2404.2	3	2	2	2	2	0	2	0	3	1	1	2	2	3
2404.3	3	2	3	2	1	0	2	0	3	2	2	2	2	1
2404.4	3	2	3	2	2	0	2	0	3	2	2	2	2	2
2404.5	3	2	2	2	1	0	2	0	3	1	1	2	2	3
AVG	3	2	2	2	1	0	2	0	3	1	1	2	2	3

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low

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	DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING													
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs													
SEM: II-II			Reg: R15					AY:						
Course Code:	Course Name: CONTROL SYSTEMS & SIMULATION LAB										L	T	P	C
15A02405	Prerequisite:NIL										0	0	4	2
L-Lecture T-Tutorial P-Practical C-Credits														
COURSE OUTCOMES (COs)														
CO No.	COURSE OUTCOME													
2405.1	Design the controllers /compensators to achieve desired specifications [BTL6]													
2405.2	Understand the effect of location of poles and zeros on transient and stead state behaviour of systems [BTL2]													
2405.3	Asses the performance, in terms of time domain specifications of first and second order systems [BTL4]													
2405.4	use MATLAB/SIMULINK software for control system analysis and design [BTL2]													
2405.5	Design PID controllers for given control system model[BTL6]													
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)														
COs	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
2405.1	2	2	1	-	-	-	-	-	-	-	-	1	1	1
2405.2	2	2	1	-	-	-	-	-	-	-	-	1	1	1
2405.3	2	2	1	-	-	-	-	-	-	-	-	1	1	1
2405.4	2	2	1	-	-	-	-	-	-	-	-	1	1	1
2405.5	2	2	1	-	-	-	-	-	-	-	-	1	1	1
AVG	2	2	1	-	-	-	-	-	-	-	-	1	1	1
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low														



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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

COURSE OUTCOMES & MAPPING OF COs with POs & PSOs

SEM: III-I

Reg: R15

AY:

Course Code:	Course Name: Electrical Measurements	L	T	P	C
15A02502	Prerequisite: None	3	1	0	3

L-Lecture T-Tutorial P-Practical C-Credits


COURSE OUTCOMES (COs)


CO No.	COURSE OUTCOME
2502.1	Describe the transmission line parameters [BTL2]
2502.2	Analyse the performance of a given transmission line [BTL3]
2502.3	To get the complete idea of insulators [BTL2]
2502.4	Analyze the effect of over voltages on transmission lines [BTL3]
2502.5	Explain the construction, types and grading of underground cables and analyze cable performance. [BTL2]

Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)

COs	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
2502.1	2	2	1	-	-	-	-	-	-	-	-	1	1	1
2502.2	2	2	1	-	-	-	-	-	-	-	-	1	1	1
2502.3	2	2	1	-	-	-	-	-	-	-	-	1	1	1
2502.4	2	2	1	-	-	-	-	-	-	-	-	1	1	1
2502.5	2	2	1	-	-	-	-	-	-	-	-	1	1	1
AVG	2	2	1	-	-	-	-	-	-	-	-		1	1

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low

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	DEPARTMENT OF ELECTRICAL & ELETRONICS ENGINEERING														
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
SEM: III-I				Reg: R15				AY:							
Course Code:	Course Name: Linear & Digital IC Applications											L	T	P	C
15A04509	Pre-requisite: None											3	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
4509.1	Understand the basic building blocks of linear integrated circuits and its characteristics.(BTL1)														
4509.2	Design various multi-vibrator circuits using IC 555 timer. Understand the theory of ADC and DAC.(BTL6)														
4509.3	Design of active filters using op-amp. Analyze the various waveform Generators using op-amp.(BTL4)														
4509.4	Classification of IC's. Comparison of different logic families and analyze the concept of IC interfacing.(BTL4)														
4509.5	Design various combinational & sequential circuits.(BTL6)														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
COs	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
4509.1	2	3	2	-	-	-	-	-	-	-	-	2	1	1	
4509.2	3	3	2	-	-	-	-	-	-	-	-	1	1	1	
4509.3	3	2	3	-	-	-	-	-	-	-	-	2	1	1	
4509.4	3	3	3	-	-	-	-	-	-	-	-	3	1	1	
4509.5	3	3	3	-	-	-	-	-	-	-	-	2	1	1	
AVG	3	3	3	-	-	-	-	-	-	-	-	2	1	1	
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low															

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	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
	SEM: III-I				Regulation: R15				AY:						
Course Code:	Course Name: Electrical Power Transmission Systems											L	T	P	C
15A02502	Prerequisite: Power Systems-Basics.											3	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
2502.1	Describe the transmission line parameters [BTL2]														
2502.2	Analyse the performance of a given transmission line [BTL3]														
2502.3	To get the complete idea of insulators [BTL2]														
2502.4	Analyze the effect of over voltages on transmission lines [BTL3]														
2502.5	Explain the construction, types and grading of underground cables and analyze cable performance. [BTL2]														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
COs	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
2502.1	2	2	1	-	-	-	-	-	-	-	-	1	1	1	
2502.2	2	2	1	-	-	-	-	-	-	-	-	1	1	1	
2502.3	2	2	1	-	-	-	-	-	-	-	-	1	1	1	
2502.4	2	2	1	-	-	-	-	-	-	-	-	1	1	1	
2502.5	2	2	1	-	-	-	-	-	-	-	-	1	1	1	
AVG	2	2	1	-	-	-	-	-	-	-	-	1	1	1	
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low															



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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

COURSE OUTCOMES & MAPPING OF COs with POs & PSOs

SEM: III-I

Reg: R15

AY:

Course Code:	Course Name: Power Electronics	L	T	P	C
15A02503	Prerequisite: None	3	1	0	3

L-Lecture T-Tutorial P-Practical C-Credits


COURSE OUTCOMES (COs)


CO No.	COURSE OUTCOME
2503.1	Basic operating principles of power semiconductor switching devices(BTL2)
2503.2	Ability to analyze various single phase & three phase power converter circuits and understand the applications(BTL4)
2503.3	Learn the controlling strategies of choppers for different loads, Design the regulators with different IC's(BTL2)
2503.4	Apply the different modulation techniques to inverters and identify the harmonic reduction methods(BTL3)
2503.5	Constructs and demonstrate the operation of AC voltage controllers & Cyclo converters. (BTL2)

Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)

COs	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
2503.1	3	2	3	2	-	-	-	-	2	2	0	2	2	3
2503.2	3	2	2		-	-	-	-	1	2	0	2	1	3
2503.3	2	2	1	2	-	-	-	-	2	-	0	1	0	3
2503.4	3	2	1	1	-	-	-	-	1	1	0	1	1	3
2503.5	3	2	2	2	-	-	-	-	3	-	0	3	1	3
AVG	3	2	2	2	-	-	-	-	2	2	0	2	2	3

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low

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	DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING														
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
SEM: III-I				Reg: R15				AY:							
Course Code:	Course Name: Electrical Machines – III											L	T	P	C
15A02504	Prerequisite: AC MACHINES											3	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
2504.1	learns the operation of Synchronous motor & harmonics elimination(BTL2)														
2504.2	predetermine the regulation of synchronous generators using different methods(BTL3)														
2504.3	Determine how several alternators running in parallel share the load on the system.(BTL5)														
2504.4	Make necessary calculations for power factor improvement using synchronous condenser.(BTL3)														
2504.5	Chooses specific 1-phase motor and/or special motors for a given application (BTL6)														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
COs	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
2504.1	2	3	2	2	-	-	-	-	-	-	-	2	1	1	
2504.2	2	2	2	2	-	-	-	-	-	-	-	2	1	1	
2504.3	2	2	2	2	-	-	-	-	-	-	-	2	1	1	
2504.4	3	3	-	-	-	-	-	-	-	-	-	3	1	1	
2504.5	2	2	-	-	-	-	-	-	-	-	-	2	1	1	
AVG	3	2	2	2	-	-	-	-	-	-	-	2	1	1	
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low															

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	DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING														
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
SEM: III – I				Reg: R15				AY:							
Course Code:		Course Name: Digital Circuits and Systems										L	T	P	C
15A04510		Prerequisite: Nil										3	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
4510.1	Understand the concept of numeric information in different forms and Boolean algebra[BTL2]														
4510.2	Evaluate the Boolean expressions using the theorems and Boolean algebra to minimize combinational functions[BTL5]														
4510.3	Analyse the sequential circuits[BTL4]														
4510.4	Understand the concept of memory devices[BTL4]														
4510.5	Analyse the synchronous and asynchronous sequential circuits[BTL4]														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
COs	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
4510.1	2	3	2	2	-	-	-	-	-	-	-	2	1	1	
4510.2	2	2	2	2	-	-	-	-	-	-	-	2	1	1	
4510.3	2	2	2	2	-	-	-	-	-	-	-	2	1	1	
4510.4	3	3	-	-	-	-	-	-	-	-	-	3	1	1	
4510.5	2	2	-	-	-	-	-	-	-	-	-	2	1	1	
AVG	3	2	2	2	-	-	-	-	-	-	-	2	1	1	
3/2/1 Indicates Strength of Correlation. 3-High, 3-Medium and 1-Low															



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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

COURSE OUTCOMES & MAPPING OF COs with POs & PSOs

SEM: III-I

Reg: R15

AY:

Course Code:	Course Name: Electrical Machines Laboratory – II	L	T	P	C
15A02506	Prerequisite: NONE	0	0	4	2

L-Lecture T-Tutorial P-Practical C-Credits


COURSE OUTCOMES (COs)


CO No.	COURSE OUTCOME
2506.1	Understand the testing of transformers, predetermine the efficiency and calculate the regulation of single phase transformers (BTL2)
2506.2	Provide supply in industries when two-phase is required for furnaces using Scott connection BT(L3)
2506.3	Draw the circle diagram of a three phase induction motor and determine its performance parameters (BTL6)
2506.4	Assess the regulation of an alternator and determine the Xd and Xq parameters (BTL5)
2506.5	Draw the V and Inverted V curves of a three phase synchronous motor (BTL6)

Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)

COs	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
2506.1	3	3	3	2	2	0	2	0	3	2	2	2	2	3
2506.2	3	3	2	2	3	0	2	0	3	1	1	2	3	2
2506.3	3	2	3	2	1	0	2	0	3	2	2	2	3	3
2506.4	3	2	3	2	2	0	2	0	3	2	2	1	2	3
2506.5	3	2	2	2	1	0	2	0	3	1	1	2	2	3
AVG	3	2	2	2	1	0	2	0	3	2	2	2	2	3

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low

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	DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING														
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
	SEM: III-I				Reg: R15				AY:						
Course Code:	Course Name:Electrical Measurements Laboratory											L	T	P	C
15A02507	Prerequisite: None											0	0	4	2
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
2507.1	Students knows the idea of energy meter working and can calculate the power factor by dynamo meter(BTL3)														
2507.2	Students acquires knowledge on calibration of Ammeter & Voltmeter using Crompton's DC potentiometer (BTL3)														
2507.3	Accurately determine the values of inductance and capacitance & resistances using different bridges(BTL5)														
2507.4	Determine ratio error and phase angle error of CT(BTL5)														
2507.5	Measure reactive power in 3-phase circuit using single wattmeter(BTL5)														
2507.6	Students gets knowledge on testing the transformer oil (BTL5)														
2507.7	Calibrates the displacement and resistances using LVDT& Strain gauge (BTL5)														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
Cos	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
2507.1	3	3	2	3	2	-	2	-	3	2	2	1	1	1	
2507.2	3	3	2	3	2	-	2	-	3	2	2	1	1	1	
2507.3	3	3	2	3	2	-	2	-	3	2	2	2	1	1	
2507.4	3	3	2	3	2	-	2	-	3	2	2	2	1	1	
2507.5	3	3	2	3	2	-	2	-	3	2	2	1	1	1	
2507.6	3	3	2	3	2	-	2	-	3	2	2	3	1	1	
2507.7	3	3	2	3	2	-	2	-	3	2	2	3	1	1	
AVG	3	3	2	3	2	-	2	-	3	2	2	2	1	1	
3/2/1 Indicates Strength of Correlation. 3-High, 3-Medium and 1-Low															

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	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
	SEM: III-I				Reg: R15				AY:						
Course Code:	Course Name: SOCIAL VALUES AND ETHICS											L	T	P	C
15A99501	Prerequisite: None											2	0	2	0
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
9501.1	To Provide the basic building blocks for anyone who want to make decisions (BTL3)														
9501.2	To Evaluate objects, persons and situations that form part and parcel of sociality. (BTL5)														
9501.3	To apply ethical principles as a basis for identifying, analyzing and managing ethical issues in contemporary business settings. (BTL3)														
9501.4	To facilitate inculcating values of equality, inclusivity and diversity for building a healthy society. (BTL5)														
9501.5	To develop physical skills and confidence among the students. (BTL5)														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
Cos	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
2507.1	-	1	-	-	-	2	2	2	-	-	-	1	1	1	
2507.2	-	1	-	-	-	2	2	2	-	-	-	1	-	1	
2507.3	-	1	-	-	-	2	2	2	-	-	-	1	-	1	
2507.4	-	1	-	-	-	2	2	2	-	-	-	1	-	1	
2507.5	--	1	--	--	--	2	2	2	--	--	--	1	-	1	
AVG	-	1	-	-	-	2	2	2	-	-	-	1	--	1	
3/2/1 Indicates Strength of Correlation. 3-High, 3-Medium and 1-Low															



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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

COURSE OUTCOMES & MAPPING OF COs with POs & PSOs

SEM: III-II

Reg: R15

AY:

Course Code:	Course Name: MANAGEMENT SCIENCE	L	T	P	C
15A52601	Prerequisite:NIL	3	1	0	3

L-Lecture T-Tutorial P-Practical C-Credits

COURSE OUTCOMES (COs)

CO No.	COURSE OUTCOME
2601.1	Understand the concepts & principles of management and know the designs of organizational structures. (BTL2)
2601.2	Apply the knowledge of Work-study principles & Quality Control techniques. (BTL3)
2601.3	Analyze the concepts of HRM in Recruitment, Selection and Training & Development. (BTL4)
2601.4	Evaluate PERT/CPM Techniques in project management& and Basic knowledge about Strategy formulation and implementation in enterprises. (BTL5)
2601.5	Understand the modern concepts in management like SCM, BPO, Six Sigma and TQM. (BTL2)

Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)

COs	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
2601.1	-	2		2	-	-	-	1	3	2	-	-	-	2
2601.2	-	3	3	2	-	-	-				-	-	-	2
2601.3	-	2	3	2	-	-	-	2	2	2	-	-	-	2
2601.4	-	3	3	2	1	-	-	-	-	-	1	-	-	2
2601.5	-			2		-	-		2	2	1	-	-	2
AVG	-	3	3	2	1	-	-	2	2	2	1	-	-	2

3/2/1 Indicates Strength of Correlation. 3-High,2-Medium and 1-Low



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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

COURSE OUTCOMES & MAPPING OF COs with POs & PSOs

SEM: III-II

Reg: R19

AY: 2019-2020

Course Code:	Course Name: Power Semiconductor Drives	L	T	P	C
15A02601	Prerequisite: None	3	1	0	3

L-Lecture T-Tutorial P-Practical C-Credits


COURSE OUTCOMES (COs)


CO No.	COURSE OUTCOME
2601.1	Identify the choice of the electric drive system based on their applications(BTL2)
2601.2	Acquires knowledge on operation of single and multi quadrant electric drives(BTL2)
2601.3	Analyze single phase and three phase rectifiers fed DC motors as well as chopper fed DC motors(BTL4)
2601.4	Knowledge on speed control methods for AC-AC & DC-AC converters fed to Induction motors(BTL2)
2601.5	Knowledge on speed control methods for AC-AC & DC-AC converters fed to Synchronous motors with closed loop, and open loop operations (BTL4)


Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)


COs	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
2601.1	2	2	3	1	-	-	-	-	1	-	-	2	1	1
2601.2	2	2	2	2	-	-	-	-	2	-	-	1	1	1
2601.3	3	2	2	2	-	-	-	-	2	-	-	1	1	1
2601.4	2	2	2	2	-	-	-	-	1	-	-	2	1	1
2601.5	2	2	2	2	-	-	-	-	1	-	-	2	1	1
AVG	2	2	2	2	-	-	-	-	1	-	-	2	1	1


3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low


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	DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING														
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
SEM: III-II				Reg: R15				AY:							
Course Code:	Course Name: Power System Protection											L	T	P	C
15A02602	Prerequisite: None											3	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
2602.1	Gains the knowledge on principles of operation of various types of electromagnetic relays, Static relays as well as Microprocessor based relays(BTL2)														
2602.2	Understanding the protection of generators and determination of what % generator winding is unprotected under fault occurrence(BTL2)														
2602.3	Gets knowledge on relays in protecting Feeders, lines and bus bars(BTL2)														
2602.4	Solve numerical problems concerning the arc interruption and recovery in circuit breakers (BTL5)														
2602.5	Understand why over voltages occur in power system and how to protect the system (BTL2)														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
COs	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
2602.1	2	1	-	-	-	-	-	-	-	-	-	2	-	-	
2602.2	3	2	2	-	-	-	-	-	-	-	-	2	-	-	
2602.3	2	2	2	-	-	-	-	-	-	-	-	2	-	-	
2602.4	3	2	2	-	-	-	-	-	-	-	-	3	-	-	
2602.5	2	1	-	-	-	-	-	-	-	-	-	3	-	-	
AVG	2	2	2	-	-	-	-	-	-	-	-	2	-	-	
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low															


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	DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING														
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
SEM: III-II				Reg: R15				AY:							
Course Code:	Course Name: Microprocessors & Microcontrollers											L	T	P	C
15A04601	Prerequisite: None											3	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
4601.1	Do programming with 8086 microprocessors.(BTL6)														
4601.2	Understand concepts of Intel x86 series of processors (BTL2).														
4601.3	Program MSP 430 for designing any basic Embedded System.(BTL6)														
4601.4	Design and implement some specific real time applications Using MSP 430 low power microcontroller.(BTL6)														
4601.5	Develop skill in simple program writing for 8051, 8086 & 8085 and applications. (BTL4,BTL6)														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
COs	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
4601.1	3	2	1	1	-	-	-	-	-	-	-	2	1	1	
4601.2	3	2	2	2	-	-	-	-	-	-	-	2	1	1	
4601.3	3	2	2	2	-	-	-	-	-	-	-	1	1	1	
4601.4	3	2	3	1	-	-	-	-	-	-	-	2	1	1	
4601.5	3	2	2	2	-	-	-	-	-	-	-	1	1	1	
AVG	3	2	2	2	-	-	-	-	-	-	-	-	1	1	
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low															

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	DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING														
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
	SEM: III-II				Reg: R15				AY:						
Course Code:	Course Name:Power System Analysis											L	T	P	C
15A02603	Prerequisite: None											3	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
2603.1	Infer the concepts of Networks Modeling, and demonstrate the process of Ybus and Zbus formation(BTL2)														
2603.2	Explain the concepts of per unit values, Analyse the symmetrical faults and unsymmetrical faults and done the fault calculations(BTL2,BTL3)														
2603.3	Examine the concepts of Gauss Seidel Algorithm for the given power system network and discover the converged load flow solution(BTL4)														
2603.4	Examine the concepts of Newton Raphson and Decoupled Algorithms for the given power system network and discover the converged load flow solution(BTL4)														
2603.5	Inspect the stability of the system and Compare methods to improve the stability(BTL4)														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
COs	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
2603.1	3	2	2	2	-	-	-	-	-	-	-	2	2	2	
2603.2	3	3	2	2	-	-	-	-	-	-	-	2	2	2	
2603.3	2	2	2	2	-	-	-	-	-	-	-	1	2	2	
2603.4	2	3	3	3	-	-	-	-	-	-	-	1	2	2	
2603.5	2	3	2	2	-	-	-	-	-	-	-	1	2	2	
AVG	2	3	2	2	-	-	-	-	-	-	-	1	2	2	
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low															

 <p>RAMIREDDY SUBBARAMI REDDY ENGINEERING COLLEGE Engineering Excellence Through Innovation</p>	RAMIREDDY SUBBARAMI REDDY ENGINEERING COLLEGE														
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	DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING														
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
SEM: III-II				Reg: R15				AY:							
Course Code:	Course Name: Programmable Logic Controller & Its Applications											L	T	P	C
19A02605	Prerequisite:none											3	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
2605.1	Able to state the basic plc terminology and their meanings(L2)														
2605.2	Program a PLC for a given application(L2,L6)														
2605.3	Implement Ladder logic for various Industrial applications(L6)														
2605.4	Design control circuits for various applications(L6)														
2605.5	Able to design and program a small ,automated industrial programme (L6)														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
COs	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
2605.1	2	2	2	-	-	-	-	-	-	-	1	2	1	2	
2605.2	3	3	3	2	2	-	-	-	2		-	3	1	2	
2605.3	2	2	3	2	2	-	-	-	2	2	-	3	1	2	
2605.4	1	2	2	3	2	-	-	-	2	2	-	3	1	2	
2605.5	2	2	2	2	2	-	-	-	3	2	3	3	1	2	
AVG	2	2	2	2	2	-	-	-	2	2	2	3	1	2	
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low															

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	DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING														
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
SEM: III-II				Reg: R15				AY:							
Course Code:	Course Name:Microprocessors & Microcontrollers Laboratory											L	T	P	C
15A04601	Prerequisite: None											0	0	4	2
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
4601.1	Do programming with 8086 microprocessors.(BTL6)														
4601.2	Understand concepts of Intel x86 series of processors (BTL2).														
4601.3	Program MSP 430 for designing any basic Embedded System.(BTL6)														
4601.4	Design and implement some specific real time applications Using MSP 430 low power microcontroller.BT(L6)														
4601.5	Develop skill in simple program writing for 8051, 8086 & 8085 and applications. (BTL4, BTL6)														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
COs	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
4601.1	2	1	2	1	2	-	-	-	1	1	1	2	1	1	
4601.2	2	1	2	1	2	-	-	-	1	1	1	2	1	1	
4601.3	2	2	2	2	2	-	-	-	1	1	1	2	2	2	
4601.4	2	2	2	2	2	-	-	-	2	1	2	2	2	2	
4601.5	2	1	2	2	2	-	-	-	1	1	2	2	2	2	
AVG	2	1	2	2	2	-	-	-	1	1	1	2	2	2	
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low															

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	DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING													
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs													
	SEM: III-II				Reg: R15				AY:					
Course Code:	Course Name :Power Electronics & Simulation Laboratory										L	T	P	C
15A02607	Prerequisite: None										0	0	4	2
L-Lecture T-Tutorial P-Practical C-Credits														
COURSE OUTCOMES (COs)														
CO No.	COURSE OUTCOME													
2607.1	Test the turn on –turn off characteristics of various power electronic devices[BTL3]													
2607.2	Test and analyze firing circuits for SCRs [BTL4]													
2607.3	Test different types of voltage controllers, converters and Inverters with R and RL loads [BTL2]													
2607.4	Analyze the TPS7A4901, TPS7A8300 and TPS54160 buck regulator[BTL4]													
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)														
COs	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
2607.1	2	2	2	1	3	-	-	-	3	2	1	2	2	1
2607.2	3	2	2	1	2	-	-	-	3	2	1	3	2	2
2607.3	3	3	3	2	2	-	-	-	3	2	2	3	2	1
2607.4	3	3	3	2	3	-	-	-	3	2	2	3	2	2
AVG	3	3	3	2	3	-	-	-	3	2	2	3	2	2
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low														

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	DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING														
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
SEM: III-II				Reg: R15				AY:							
Course Code:	Course Name: :ADVANCED ENGLISH LANGUAGE COMMUNICATION SKILLS LAB											L	T	P	C
15A52602	Prerequisite: None											0	0	2	0
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
2602.1	Develop a wide range of vocabulary to Speak English effectively, and respond appropriately in different socio-cultural and professional contexts. (BTL-2 & BTL3)														
2602.2	Apply unique qualities of professional writing style such as sentence conciseness, readability, clarity, accuracy, avoiding wordiness or ambiguity, previewing, objectivity, summarizing, coherence and transitional devices. (BTL-3)														
2602.3	Deliver presentations successfully devising and applying various techniques. (BTL-2)														
2602.4	Identify areas of evaluation in GDs as part of the selection procedure, and prepare accordingly and moreover, understand the strategies of the interviewers to facilitate better responses during the Placement interviews. (BTL-2)														
2602.5	Acquire personality traits as self-confidence, positive attitude, emotional intelligence, social grace, flexibility, time management, problem solving, decision making, friendliness and effective communication skills. (BTL-2)														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
COs	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
2607.1	1	2	2	-	-	-	-	-	-	-	-	2	1	1	
2607.2	1	1	1	-	-	-	-	-	-	-	-	2	1	1	
2607.3	1	2	1	-	-	-	-	-	-	-	-	2	1	1	
2607.4	1	1	1	-	-	-	-	-	-	-	-	2	1	1	
2602.5	1	1	1	-	-	-	-	-	-	-	-	2	1	1	
AVG	1	1	1	-	-	-	-	-	-	-	-	2	1	1	
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low															



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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

COURSE OUTCOMES & MAPPING OF COs with POs & PSOs

SEM: IV-I

Reg: R15

AY: 2021-2022

Course Code:	Course Name: ELECTRICAL DISTRIBUTION SYSTEMS	L	T	P	C
15A02701	Prerequisite: ELECTRICAL POWER SYSTEMS	3	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits					

COURSE OUTCOMES (COs)

CO No.	COURSE OUTCOME
2701.1	Compute the various factors associated with power distribution [BTL2]
2701.2	Calculate voltage drop calculations in given distribution networks [BTL3]
2701.3	Interpret principles of substation maintenance [BTL2]
2701.4	Determine power factor improvement for a given system and load [BTL2]
2701.5	Understand implementation of SCADA for distribution automation [BTL2]

Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)

COs	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
2701.1	3	3	1	2	-	-	-	-	-	-	-	1	2	2
2701.2	3	3	1	2	-	-	-	-	-	-	-	-	2	2
2701.3	2	2	2	2	-	-	-	-	-	-	-	1	1	2
2701.4	2	2	1	2	-	-	-	-	-	-	-	1	1	2
2701.5	2	2	1	2	-	-	-	-	-	-	-	1	1	2
AVG	2	2	1	2	0	0	0	0	0	0	0	1	1	2

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low



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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

COURSE OUTCOMES & MAPPING OF COs with POs & PSOs

SEM: IV-I

Reg: R15

AY: 2021-2022

Course Code:

Course Name: Digital Signal Processing

L

T

P

C

15A04603

Pre-requisite: Signals and systems

3

0

0

3

L-Lecture T-Tutorial P-Practical C-Credits


COURSE OUTCOMES (COs)


CO No.	COURSE OUTCOME
4603.1	Understand the concepts of DFS,DFT and its properties (BTL1)
4603.2	Find N-Point DFT/FFT for a given signal/sequence (BTL2)
4603.3	Realization of different structures for FIR and IIR filters (BTL2)
4603.4	Design of FIR and IIR filters using different techniques(BTL4)
4603.5	Analyze and compare different signal processing strategies(BTL3)


Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)


COs	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
4603.1	3	3	1	1	2	1	-	-	-	1	-	1	3	1
4603.2	3	3	2	1	2	1	-	-	-	1	-	1	3	1
4603.3	3	3	1	1	2	1	-	-	-	1	-	1	3	1
4603.4	3	3	2	1	2	1	-	-	-	1	-	1	3	1
4603.5	3	3	2	1	2	1	-	-	-	1	-	1	3	1
AVG	3	3	2	1	2	1	-	-	-	1	-	1	3	1


3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low

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	DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING														
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
	SEM: IV-I				Reg: R15				AY: 2021-2022						
Course Code:	Course Name: Power System Operation and Control											L	T	P	C
15A02702	Prerequisite: None											2	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
2702.1	Learns the importance of load characteristics and forecasting curves (BTL2)														
2702.2	Develop the mathematical models of turbines and governors (BTL6)														
2702.3	Explains the steady state analysis for load frequency control systems (BTL4)														
2702.4	Explain how shunt and series compensation helps in reactive power control (BTL4)														
2702.5	Explain the issues concerned with power system operation in competitive environment (BTL4)														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
COs	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
2702.1	2	3	2	2	-	1	-	-	1	-	-	2	2	1	
2702.2	3	3	2	2	-	-	2	-	1	-	-	2	2	1	
2702.3	2	2	2	2	-	-	-	-	-	-	-	1	2	1	
2702.4	2	1	2	1	-	-	-	-	-	-	-	1	2	1	
2702.5	2	2	1	2	-	-	3	-	-	-	-	2	2	1	
AVG	2	2	2	2	-	1	2	-	1	-	-	2	2	1	
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low															

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	DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING													
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs													
	SEM: IV-I				Reg: R15				AY: 2021-2022					
Course Code:	Course Name: UTILIZATION OF ELECTRICAL ENERGY								L	T	P	C		
15A02703	Prerequisite: None								3	0	0	3		
L-Lecture T-Tutorial P-Practical C-Credits														
COURSE OUTCOMES (COs)														
CO No.	COURSE OUTCOME													
2703.1	Develop a lighting scheme for a given practical case [BTL2]													
2703.2	Analyze the performance of Heating and Welding methods [BTL3]													
2703.3	Make all numerical calculations associated with electric traction [BTL2]													
2703.4	Assess the economic aspects in utilisation of electrical energy [BTL2]													
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)														
COs	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
2703.1	2	2	2	1	-	3	2	2	-	-	-	2	2	2
2703.2	3	2	2	2	-	3	1	2	-	-	-	2	2	2
2703.3	3	2	2	2	-	3	1	2	-	-	-	2	2	2
2703.4	2	2	3	2	-	3	2	2	-	-	-	2	2	2
AVG	3	2	3	3	-	3	2	2	-	-	-	2	2	2
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low														

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	DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING														
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
	SEM: IV/I				Regulation: R15				AY: 2021-2022						
Course Code:	Course Name: SWITCHED MODE POWER CONVERTERS											L	T	P	C
15A02705	Prerequisite: None											3	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
2705.1	To Analyze the operation of various non-isolated DC-DC converters and their associated phenomena. (BTL-L4)														
2705.2	To Analyze the operation of various Isolated DC-DC converters and their associated phenomena. (BTL-L4)														
2705.3	To Analyze the operation of ZVS and ZCS resonant DC-DC converters and their associated phenomena. (BTL-L4)														
2705.4	To Formulate dynamic equations for DC-DC converters and to Construct state space and averaged models for the basic DC-DC converters. (BTL-L6)														
2705.5	To Design the controllers for SMPC in frequency domain namely P, PI and PID regulators. (BTL-L6)														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
COs	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
2705.1	1	3	3	-	2	2	-	-	-	-	-	1	-	1	
2705.2	1	3	3	-	2	2	-	-	-	-	-	1	-	1	
2705.3	1	3	3	-	2	2	-	-	-	-	-	1	3	1	
2705.4	-	3	3	-	2	1	-	-	-	-	-	1	-	1	
2705.5	-	-	3	-	3	-	-	2	-	-	-	-	2	3	
AVG	1	3	3	-	2	2	-	2	-	-	-	1	3	2	
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low															

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	DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING														
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
SEM: IV-I				Reg: R15				AY: 2021-2022							
Course Code:	Course Name: POWER QUALITY											L	T	P	C
15A02709	Prerequisite: Electrical power system fundamentals											2	1	0	3
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
2709.1	Identify power quality issues to ensure meeting of standards (L1)														
2709.2	Distinguish the concepts of compensation for sags and swells using voltage regulating device(L2)														
2709.3	Interpret harmonic distortion and its mitigation(L2)														
2709.4	Outline Power quality bench marking and List various Monitoring devices(L1)														
2709.5	Compare power quality enhancement possibilities by custom power devices(L3)														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
COs	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
2709.1	3	-	-	-	-	2	-	-	-	-	-	2	2	3	
2709.2	2	2	2	1	-	-	-	-	-	-	-	1	2	3	
2709.3	2	2	2	-	-	2	-	-	-	-	-	1	2	3	
2709.4	3	-	1		3	2	-	-	-	-	-	2	2	3	
2709.5	3	-	3	2	3	2	-	-	-	-	-	2	2	3	
AVG	3	1	2	1	2	2	-	-	-	-	-	2	2	3	
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low															

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	DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING														
	COURSE OUTCOMES & MAPPING OF COs with POs & PSOs														
SEM: IV-I				Reg: R15				AY: 2021-2022							
Course Code:		Course Name: Power Systems & Simulation Laboratory										L	T	P	C
15A02710		Prerequisite:ELECTRICAL POWER SYSTEMS										0	0	4	2
L-Lecture T-Tutorial P-Practical C-Credits															
COURSE OUTCOMES (COs)															
CO No.	COURSE OUTCOME														
2710.1	Determines the sequence impedance & sub transient reactance in Synchronous machines(BTL5)														
2710.2	Analyzes LG, LL, LLG, LLLG faults(BTL4)														
2710.3	The equivalent circuit of three winding transformer by conducting a suitable experiment(BTL5)														
2710.4	Developing MATLAB program for formation of Y and Z buses, gauss-seidel and fast decoupled load flow studies(BTL6)														
2710.5	Developing the SIMULINK model for single area load frequency control problem. (BTL6)														
Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)															
COs	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
2710.1	3	3	-	-	-	-	-	-	3	1	1	1	2	2	
2710.2	3	3	-	2	-	-	-	-	3	1	2	3	2	2	
2710.3	3	3	-	-	-	-	-	-	3	1	1	2	2	2	
2710.4	3	3	3	3	3	3	-	-	3	2	3	3	2	2	
2710.5	3	3	3	3	3	3	-	-	3	2	3	3	2	2	
AVG	3	3	1	1	1	1	0	0	3	2	2	3	2	2	
3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low															



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RAMIREDDY SUBBARAMI REDDY ENGINEERING COLLEGE

(Approved by AICTE, Affiliated to JNTUA. An ISO 9001: 2015 Certified Institution.
NH-16, Kadanuthala, Bogole Mandal, Kavali- 524 142, S.P.S.R. Nellore, A.P.)

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

COURSE OUTCOMES & MAPPING OF COs with POs & PSOs

SEM: IV-II

Reg: R15

AY: 2021-2022

Course Code:	Course Name: INSTRUMENTATION	L	T	P	C
15A02801	Prerequisite: None	3	1	0	3

L-Lecture T-Tutorial P-Practical C-Credits

COURSE OUTCOMES (COs)

CO No.	COURSE OUTCOME
2801.1	Identify and explain the types of errors occurring in measurement systems(BTL2)
2801.2	Differentiate among the types of data transmission and modulation techniques. (BTL4)
2801.3	Comprehend different types of analyzers, their construction and operation(BTL4)
2801.4	Describe the working principle, selection criteria and applications of various transducers used in measurement systems.(BTL3)
2801.5	Choose suitable transducers for the measurement of non-electrical quantities. (BTL3)

Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)

COs	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
2801.1	3	2	2	-	2	-	-	-	-	1	-	2	-	-
2801.2	2	2	3	2	2	-	1	-	-	1	-	2	-	-
2801.3	2	3	1	1	-	-	1	-	-	1	-	2	3	3
2801.4	3	3	1	1	-	-	1	-	-	1	-	2	3	3
2801.5	1	2	2	-	2	-	-	-	-	2	-	3	2	2
AVG	2	3	2	1	2	-	1	-	-	1	-	2	3	3

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low



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COURSE OUTCOMES & MAPPING OF COs with POs & PSOs

SEM: IV-II

Regulation: R15

AY: 2021-2022

Course Code:	Course Name: HVDC Transmission	L	T	P	C
15A02804	Prerequisite: None	3	0	0	3

L-Lecture T-Tutorial P-Practical C-Credits

COURSE OUTCOMES (COs)

CO No.	COURSE OUTCOME
2804.1	To Compare HVDC and HVAC transmission systems and To Discuss the types of DC links and static power conversion principles. (BTL-L4 and BTL-L6)
2804.2	To Analyze the operation of various three phase converters used in HVDC transmission, and to Construct the equivalent circuits of rectifier, inverter and HVDC link (BTL-L4 and BTL-L6)
2804.3	To Examine the Control Schemes in HVDC system namely CC, CIA, CEA, IPC and EPC (BTL-L4)
2804.4	To Interpret the reason for occurrence of harmonics in HVDC systems and to Formulate means to suppress harmonics using filters (BTL-L5 and BTL-L6)
2804.5	To Inspect the reason for occurrence of overvoltages in HVDC systems and To Develop protection against overvoltages and over currents (BTL-L4 and BTL-L6)

Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)

COs	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
2804.1	3	-	-	2	3	1	-	2	-	-	-	1	1	3
2804.2	-	3	3	-	-	1	-	-	-	-	-	-	-	2
2804.3		3	3	3	3	2	-	-	-	-	-	2	-	2
2804.4	3	3	3	3	3	3	-	-	-	-	2	2	3	1
2804.5	1	-	-	3	3	3	-	2	-	-	-	2	1	2
AVG	1	2	2	2	2	2	-	1	-	-	2	1	1	2

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low



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COURSE OUTCOMES & MAPPING OF COs with POs & PSOs

SEM: IV-II

Regulation: R15

AY: 2021-2022

Course Code:	Course Name: PROJECT WORK	L	T	P	C
15A02808	Prerequisite: None	0	0	24	12

L-Lecture T-Tutorial P-Practical C-Credits

COURSE OUTCOMES (COs)

CO No.	COURSE OUTCOME
2808.1	Identifying and define the engineering problems and complex problems related to the specific engineering branch [BTL-1]
2808.2	Identify, formulate, research literature and analyze complex engineering problems[BTL-1]
2808.3	Design/development of solutions and conducts investigations of complex engineering problems [BTL-6]
2808.4	Create, select and apply appropriate techniques , uses modern tools including predictions and limitations [BTL-6]
2808.5	Applying, analyzing health safety legal & cultural environmental issues. Applying ethical principles and commit to professional ethics [BTL-3]
2808.6	Analyze result, communicate and discuss with team members managing the project and recognize the need for lifelong learning [BTL-4]

Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)

COs	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
2808.1	3	3							3	2			1	1
2808.2	2	2							3	2			1	1
2808.3	3	3	3	2					3	2			1	1
2808.4	2	2		3	3				3	2			1	1
2808.5	1	1	2		3	2	2	2	2	2			1	1
2808.6	2	2	2	2	2	2	2	2	3	3			1	1
AVG	2	2	2	2	3	2	2	2	3	2			1	1

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low



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COURSE OUTCOMES & MAPPING OF COs with POs & PSOs

SEM: IV-II

Reg: R15

AY: 2021-2022

Course Code:

Course Name: TECHNICAL SEMINAR

L

T

P

C

15A02807

Prerequisite: None

3

1

0

3

L-Lecture T-Tutorial P-Practical C-Credits

COURSE OUTCOMES (COs)

CO No.	COURSE OUTCOME
2807.1	To Inspect research papers in electrical engineering, to summarize and review them. (BTL-4)
2807.2	To Assess various latest cutting edge technologies. (BTL-5)
2807.3	To Develop skills in preparing detailed report regarding an allotted task. (BTL-6)
2807.4	To Utilize the knowledge gained by research papers and exchange a few words by making oral presentation before an assessment team. (BTL-6)

Mapping of Course Outcomes (COs) with Program Outcomes (POs) & Program Specific Outcomes (PSOs)

COs	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
2801.1	1	1	-	-	-	-	-	-	-	2	-	-	3	-
2801.2	1	1	-	-	-	-	-	-	-	-	-	3	3	-
2801.3	1	1	-	-	2	-	-	-	-	-	2	-	3	-
2801.4	1	1	-	-	-	-	-	-	3	-	-	-	3	-
AVG	1	1	-	-	2	-	-	-	3	2	2	3	3	-

3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low