

## Department of Electrical & Electronics Engineering

Course Tittle: \_\_\_\_\_Power Electronics Lab\_\_\_\_

Following documents are available in Course File.

S.No.	Points	Yes	No
1	Institute and Department Vision and Mission Statements		
2	PEO & PO Mapping		
3	Academic Calendar		
4	Subject Allocation Sheet		
5	Class Time Table, Individual Timetable (Single Sheet)	$\checkmark$	
6	Syllabus Copy		
7	Course Handout	$\checkmark$	
8	CO-PO Mapping	$\checkmark$	
9	CO-Cognitive Level Mapping	NA	
10	Lecture Notes	NA	
11	Tutorial Sheets With Solution	NA	
12	Soft Copy of Notes/Ppt/Slides	NA	
13	Sessional Question Paper and Scheme of Evaluation	NA	
14	Best, Average and Weak Answer Scripts for Each Sessional Exam. (Photocopies)	NA	
15	Assignment Questions and Solutions	NA	
16	Previous University Question Papers	NA	
17	Result Analysis		
18	Feedback From Students		
19	Course Exit Survey		
20	CO Attainment for All Mids.		$\checkmark$
21	Remedial Action.		$\checkmark$

**Course Instructor / Course Coordinator** 

#### **Course Instructor / Course Coordinator**

(Name)

(Signature)





#### Vision of the Institute:

To achieve and impart quality education with an emphasis on practical skills and social relevance.

relevance.

### Mission of the Institute:

To be among the best of the institutions for engineers and technologists with attitudes, skill and

knowledge and to become an epicenter of creative solutions.

#### Vision of the Program:

To provide the technical knowledge and soft skills required to succeed in life, career and help society to achieve self sufficiency.

#### Mission of the Program:

- To become an internationally leading department for higher learning.
- To build upon the culture and values of universal science and contemporary education.
- To be a center of research and education generating knowledge and technologies which lay groundwork in shaping the future in the fields of electrical and electronics engineering.
- To develop partnership with industrial, R&D and government agencies and actively participate in conferences, technical and community activities.



# **GOKARAJU RANGARAJU**

INSTITUTE OF ENGINEERING AND TECHNOLOGY

### Department of Electrical & Electronics Engineering

## **Programme Educational Objectives (B.Tech. – EEE)**

This programme is meant to prepare our students to professionally thrive and to lead. During their progression:

#### Graduates will be able to

- PEO 1: Have a successful technical or professional careers, including supportive and leadership roles on multidisciplinary teams.
- PEO 2: Acquire, use and develop skills as required for effective professional practices.
- PEO 3: Able to attain holistic education that is an essential prerequisite for being a responsible member of society.
- PEO 4: Engage in life-long learning, to remain abreast in their profession and be leaders in our technologically vibrant society.

### **Programme Outcomes (B.Tech. – EEE)**

### At the end of the Programme, a graduate will have the ability to

- PO 1: Apply knowledge of mathematics, science, and engineering.
- PO 2: Design and conduct experiments, as well as to analyze and interpret data.
- PO 3: Design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- PO 4: Function on multi-disciplinary teams.
- PO 5: Identify, formulates, and solves engineering problems.
- PO 6: Understanding of professional and ethical responsibility.
- PO 7: Communicate effectively.
- PO 8: Broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
- PO 9: Recognition of the need for, and an ability to engage in life-long learning.
- PO 10: Knowledge of contemporary issues.
- PO 11: Utilize experimental, statistical and computational methods and tools necessary for engineering practice.
- PO 12: Demonstrate an ability to design electrical and electronic circuits, power electronics, power systems; electrical machines analyze and interpret data and also an ability to design digital and analog systems and programming them.

Programme Educational				Pr	ogra	mme	e Out	come	es (PC	Ds)		
<b>Objectives (PEOs)</b>	1	2	3	4	5	6	7	8	9	10	11	12
1	М	М	1	1	Н	1	-	Н	Н	-	Н	Н
2	-	-	Μ	М	Н	Η	Η	-	-	-	-	Н
3	-	-	-	-	Н	Η	Μ	Μ	Μ	М	Н	Н
4	-	-	-	Μ	М	Н	Μ	Н	Н	-	М	Н

### **PEOs & POs Mapping**

\* H: Strongly Correlating (3); M: Moderately Correlating (2)& L: Weakly Correlating (1)





# **CO - PO Mapping**

### **Course Outcomes-Program Outcomes(POs) Relationship Matrix:**

P-Outcomes	a	b	c	d	e	f	g	h	i	j	k	1
Course outcomes												
1	-	Н	Н	М	-	Н	М	М	Н	-	Н	Н
2	Н	Н	Η	М	-	Н	-	М	Н	-	Н	Н
3	-	Н	Η	М	-	Н	-	М	Н	Н	Н	Н
4	Η	М	-	Η	-	М	Η	-	М	-	-	М
5	Η	-	Η	М	-	М	Н	М	М	-	Н	Μ
6	Η	Н	М	М	-	Н	Н	Η	-	-	Н	Μ
7	-	Н	Η	М	-	Н	Н	М	Η	М	Н	Η





### GRIET/DAA/1H/G/18-19

05 May 2018

### ACADEMIC CALENDAR

### Academic Year 2018-19

#### III B.TECH – FIRST SEMESTER

S. No.	EVENT	PERIOD	DURATION
1	1 <sup>st</sup> Spell of Instructions	02-07-2018 to 01-09-2018	9 Weeks
2	1 <sup>st</sup> Mid-term Examinations	03-09-2018 to 05-09-2018	3 Days
3	2 <sup>nd</sup> Spell of Instructions	06-09-2018 to 24-10-2018	7 Weeks
4	2 <sup>nd</sup> Mid-term Examinations	25-10-2018 to 27-10-2018	3 Days
5	Preparation	29-10-2018 to 06-11-2018	1 Week 3 Days
6	End Semester Examinations (Theory/	08-11-2018 to 08-12-2018	4 Weeks 3 Days
	Practicals) Regular/Supplementary		_
7	Commencement of Second Semester,	10-12-2018	
	A.Y 2018-19		

### **III B.TECH – SECOND SEMESTER**

S. No.	EVENT	PERIOD	DURATION
1	1 <sup>st</sup> Spell of Instruction	10-12-2018 to 02-02-2019	8 Weeks
2	1 <sup>st</sup> Mid-term Examinations	04-02-2019 to 06-02-2019	3 Days
3	2 <sup>nd</sup> Spell of Instruction	07-02-2019 to 06-04-2019	8 Weeks 3 Days
4	2 <sup>nd</sup> Mid-term Examinations	08-04-2019 to 10-04-2019	3 Days
5	Preparation	11-04-2019 to 17-04-2019	1 Week
6	End Semester Examinations (Theory/	18-04-2019 to 08-05-2019	3 Weeks
	Practicals) Regular		
7	Supplementary and Summer Vacation	09-05-2019 to 22-06-2019	6 Weeks 3 Days
8	Commencement of First Semester,	24-06-2019	
	A.Y 2019-20		

Copy to Director, Principal, Vice Principal, DOA, DOE, Balaji Kumar, DCGC, All HODs



Department of Electrical & Electronics Engineering

	Section-A	Section-B
Special Functions and Complex Variable	Dr GS	Dr GS
Electromagnetic Fields	SN	SN
Network Theory	MS	MS
DC Machines and Transformers	Dr BPB	Dr BPB
Computer Organization	PRK	PRK
DC Machines Lab	MP/DSR	PRK/DSR
Electrical Networks Lab	YSV/GBR	YSV/GBR
Electrical Simulation Lab	GSR/PS	GSR/PS
Environmental Science		
III YEAR (GR15)	Section-A	Section-B
Power Transmission System	VVRR/MP	VVRR/MP
Microcontrollers	РК	РК
Power Electronics	Dr TSK	DKK
Electrical Measurements& Instrumentation (PE-1)	UVL	UVL
		PSVD/Dr
Solar & Wind Energy Systems (OE-1)	PSVD/Dr JP	JP
Sensors/Measurements& Instrumentation Lab	PSVD/PS	UVL/PS
Power Electronics Lab	PPK/MRE	SN/MRE
Microcontrollers Lab	RAK/DKK	PK/DKK
IV YEAR(GR15)	Section-A	Section-B
Power Semiconductor Drives	YSV	Dr DGP
Power System Operation & Control	Dr JSD	Dr JSD

# (2018-19) I- Sem Subject Allocation Sheet



# Department of Electrical & Electronics Engineering

High Voltage DC Transmission Systems	MRE	Dr SVJK			
Electrical Distribution Systems (PE-3)	VVSM				
High Voltage Engineering (PE-3)	VL	VUR			
Soft Computing Techniques (OE-3)	RAK	RAK			
DSP based Electrical Lab	AVK/DKK	AVK/DKK			
	VVSM /	VVSM /			
Power Systems Simulation Lab	GSR	GSR			
Power Electronic Drives Lab	MP/GBR	MP/GBR			
I/I BEE(AICTE)	A/B	C/D/E			
BEE	ML				
BEE	KS				
BEE	МК				
BEE	MVK				
BEE	MNSR				
Civil II/I (GR15)	А	В			
ET	РРК	РРК			



Department of Electrical & Electronics Engineering

# **CLASS TIME TABLE**

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

GRIET/PRIN/06/G/01/18-19

BTech - EEE - A										III y	ear - I Semester
DAY/ HOUR	9:00 - 9:45	9:45 - 10:30	10:30 - 11:15	11:15- 12:00	12:00- 12:30	12:30 - 1:20	1:20 - 2:10	2:10 - 3:00			Room No
MONDAY	PI	E		SWE		MC	PE	PE		Theory	4501
TUESDAY	SMI Lab / PE Lab A1 / A2					SWE	PE	PE		Lab	SMI Lab - 4507 MC Lab - 4505 PE Lab - 4405
WEDNESDAY	PT	PTS SWE			BR	MC	MC	EMI			
THURSDAY	PE Lab / MC Lab A1 / A2				EAK	PTS	PTS	EMI		Class Incharge:	M Lohita
FRIDAY		MC La A	b /SMI La 1 / A2	b		EMI	EMI	МС			
SATURDAY	М	IC		PTS		SWE	EMI	EMI			
Subject Code	Su	bject Nan	ne	Faculty Code	Faculty name			А			
GR15A3016	Power	r Transmi System	ssion	VVRR/MP	V Vijaya Pr	Rama Ra ashanth	ju/M	1 <sup>st</sup> Spell of Instructions			02-07-2018 to 01-09- 2018
GR15A2055	Mic	rocontroll	ers	PK	PF	rashanth		1 <sup>st</sup> Mid-ter Examination	m ons		03-09-2018 to 05-09- 2018
GR15A3018	Powe	er Electro	nics	Dr TSK	Dr T S	uresh Kum	nar	2 <sup>nd</sup> Spell o	f In	structions	06-09-2018 to 24-10- 2018
GR15A3017	Electrica and Ir	al Measur nstrument	ements tation	UVL	U Vija	iya Lakshr	ni	2 <sup>nd</sup> Mid-ter Examinati	rm ons		25-10-2018 to 27-10- 2018
GR15A3152	Solar	& Wind E Systems	nergy	PSVD/Dr JP	P Sri Vi P	dya Devi/[ raveen	Dr J	Preparatio	n		29-10-2018 to 06-11- 2018
GR15A3019	Sensors and Inst	s/Measure trumentat	ements ion Lab	PSVD/PS	P Sri Vidya	a Devi /P S	Sirisha	End Seme	este ons	(Theory/	08-11-2018 to 08-12-
GR15A3020	Power	Electronic	cs Lab	PPK/MRE	P Praveen	Kumar/M	Rekha	Practicals) Suppleme	Re ntai	gular /	2018
GR15A2059	Micro	controller	s Lab	RAK/DKK	R Anil Ku	ımar/ D Ka Kumar	aruna	Commencement of Second Semester, A.Y			10/12/2018

HOD

**Co-ordinator** 

Wef : 02 July 2018



# **GOKARAJU RANGARAJU**

INSTITUTE OF ENGINEERING AND TECHNOLOGY

# Department of Electrical & Electronics Engineering

#### DEPARTMENT OF ELECTRICAL AND ELECTRONICS

#### Wef : 02 July 2018 Wef

III year - I Semester

ENGINEERING GRIET/PRIN/06/G/01/18-19 BTech - EEE - B

DAY/ HOUR	9:00 - 9:50	9:50 - 10:40	10:40 - 11:30	11:30 - 12:00	12:00- 12:45	12:45- 1:30	1:30 - 2:15	2:15 - 3:00		Room No
MONDAY	PE	PE	MC		SMI Lab / PE Lab B1/ B2				Theory	4404
TUESDAY	PE	PE	MC		Γ	MCLab / SMI Lab B1/ B2			Lab	SMI Lab - 4507
WEDNESDAY	PE	PE	PTS	BREA	EN	11	S	WE	Lab	PE Lab - 4405
THURSDAY	PTS	PTS	EMI	١K	SW	E	ſ	VIC		
FRIDAY	PTS	PTS	EMI		M	2	SWE		Class Incharge:	M Lohita
SATURDAY	PTS	EMI	EMI			PELab / MC Lab B1/ B2				
Subject Code	Su	hiect Nan	1e	Faculty	Faculty name A		Alm	anac		
v	54	bjeet Han		Code	1 44	unty nume				
GR15A3016	Power	Transmi System	ssion	Code VVRR/MP	V Vijaya P	Rama Ra rashanth	ju/M	1 <sup>st</sup> Spell of Ir	nstructions	02-07-2018 to 01-09- 2018
GR15A3016 GR15A2055	Power	Transmi System	ers	Code VVRR/MP PK	V Vijaya P P I	Rama Ra rashanth Prashanth	ju/M	1 <sup>st</sup> Spell of Ir 1 <sup>st</sup> Mid-term Examination	nstructions	02-07-2018 to 01-09- 2018 03-09-2018 to 05-09- 2018
GR15A3016 GR15A2055 GR15A3018	Power	Transmi System rocontroll	ers nics	Code VVRR/MP PK DKK	V Vijaya P P I D Ka	Rama Ra rashanth Prashanth runa Kuma	ju/M	1 <sup>st</sup> Spell of Ir 1 <sup>st</sup> Mid-term Examination 2 <sup>nd</sup> Spell of I	nstructions s nstructions	02-07-2018 to 01-09- 2018 03-09-2018 to 05-09- 2018 06-09-2018 to 24-10- 2018
GR15A3016 GR15A2055 GR15A3018 GR15A3017	Power Mic Power Electrica and Ir	r Transmin System rocontroll er Electro al Measur	ers nics ements ation	Code VVRR/MP PK DKK UVL	V Vijaya P P I D Ka U Viji	i Rama Ra rashanth Prashanth runa Kuma aya Lakshr	ju/M ar ni	1 <sup>st</sup> Spell of Ir 1 <sup>st</sup> Mid-term Examination 2 <sup>nd</sup> Spell of I 2 <sup>nd</sup> Mid-term Examination	nstructions s nstructions s	02-07-2018 to 01-09- 2018 03-09-2018 to 05-09- 2018 06-09-2018 to 24-10- 2018 25-10-2018 to 27-10- 2018
GR15A3016 GR15A2055 GR15A3018 GR15A3017 GR15A3152	Power Mic Power Electrica and Ir Solar 8	Transmi System rocontroll er Electro al Measur hstrument & Wind El Systems	ers nics ements ation nergy	Code VVRR/MP PK DKK UVL PSVD/Dr JP	V Vijava P P I D Ka U Viji P Sri V	a Rama Ra rashanth Prashanth runa Kuma aya Lakshr idya Devi/[ Praveen	ju/M ar ni Dr J	1 <sup>st</sup> Spell of Ir 1 <sup>st</sup> Mid-term Examination 2 <sup>nd</sup> Spell of I 2 <sup>nd</sup> Mid-term Examination Preparation	nstructions s nstructions s	02-07-2018 to 01-09- 2018 03-09-2018 to 05-09- 2018 06-09-2018 to 24-10- 2018 25-10-2018 to 27-10- 2018 29-10-2018 to 06-11- 2018
GR15A3016 GR15A2055 GR15A3018 GR15A3017 GR15A3152 GR15A3019	Power Mic Power Electrica and Ir Solar & Sensors and Inst	Transmi System rocontroll er Electro al Measur hstrument & Wind En Systems s/Measure trumentat	ers nics ements ation nergy ements ion Lab	Code VVRR/MP PK DKK UVL PSVD/Dr JP UVL/PS	V Vijaya P P I D Ka U Viji P Sri V F U Vijaya L	n Rama Ra rashanth Prashanth runa Kuma aya Lakshr idya Devi/[ Praveen akshmi/ P	ju/M ar ni Dr J Sirisha	1 <sup>st</sup> Spell of Ir 1 <sup>st</sup> Mid-term Examination 2 <sup>nd</sup> Spell of I 2 <sup>nd</sup> Mid-term Examination Preparation End Semest Examination	nstructions s nstructions s er s (Theory/	02-07-2018 to 01-09- 2018 03-09-2018 to 05-09- 2018 06-09-2018 to 24-10- 2018 25-10-2018 to 27-10- 2018 29-10-2018 to 06-11- 2018 08-11-2018 to 08-12-
GR15A3016 GR15A2055 GR15A3018 GR15A3017 GR15A3152 GR15A3019 GR15A3020	Power Mic Power Electrica and Ir Solar & Sensors and Inst Power	Transmi System rocontroll er Electro al Measur hstrument & Wind El Systems s/Measure trumentat Electronic	ers nics ements ation nergy ements ion Lab	Code VVRR/MP PK DKK UVL PSVD/Dr JP UVL/PS SN/MRE	V Vijaya P P I D Ka U Viji P Sri V F U Vijaya L Syed Sar	a Rama Ra rashanth Prashanth runa Kuma aya Lakshr idya Devi/[ Praveen akshmi/ P faraz Naw Rekha	ju/M ar ni Dr J Sirisha az/ M	1 <sup>st</sup> Spell of Ir 1 <sup>st</sup> Mid-term Examination 2 <sup>nd</sup> Spell of I 2 <sup>nd</sup> Mid-term Examination Preparation End Semest Examination Practicals) R Supplementa	nstructions s nstructions s er s (Theory/ tegular / ary	02-07-2018 to 01-09- 2018 03-09-2018 to 05-09- 2018 06-09-2018 to 24-10- 2018 25-10-2018 to 27-10- 2018 29-10-2018 to 06-11- 2018 08-11-2018 to 08-12- 2018





# FACULTY INDIVIDUAL TIME TABLE

# Academic Year 2018-19 I SEM

	9		10		11	12		1		2	3	
MON							PE	LAE	B(B-S	Sec)		
TUE												
WED	PE	LAF	3(A-\$	Sec)								
THU							PE	LAE	B(B-S	Sec)		
FRI												
SAT	PE	LAE	B(A-S	Sec)								





# **COURSE OBJECTIVES**

Academic Year	: 2018-2019
Semester	: I
Name of the Program:	B.Tech Year:III Section: A/B
Course/Subject:Power	Electronics Lab Course Code: GR15A3020

Name of the Faculty: P.Praveen Kumar(Asst.Prof), M.Rekha(Asst.Prof), Dept.: .....EEE.....

Syed Sarfaraz Nawaz(Assoc.Prof)

On completion of this Subject/Course the student shall be able to:

S.No	Objectives
1	To provide the students a deep insight in to the working of different switching devices with
	respect to their characteristics.
2	To analyze different converters and control with their applications.
3	To study advanced converters and switching techniques implemented in recent technology

Signature of HOD

Signature of faculty

Date:

Date:

Note: Please refer to Bloom's Taxonomy, to know the illustrative verbs that can be used to state the objectives.



Department of Electrical & Electronics Engineering

# **COURSE OUTCOMES**

Academic Year	: 2018-2019
Semester	: I
Name of the Program:	B.TechYear:III Section: A/B
Course/Subject: I	ower Electronics Lab Course Code: GR15A3020
Name of the Faculty:. P.I	caveen Kumar(Asst.Prof), M.Rekha(Asst.Prof), Dept.: EEE

Syed Sarfaraz Nawaz(Assoc.Prof)

The expected outcomes of the Course/Subject are:

S.No	Outcomes
1	Design and conduct simulation and experiments
2	Use the techniques, skills and modern engineering tools necessary for engineering practice.
3	Identify, formulate and sole engineering problems with simulation.
4	Simulate characteristics of SCR, MOSFET, IGBT.
5	Simulate Rectifiers, Choppers, AC voltage controller, Inverter, Cyclo-converter circuits
6	Perform cyclo converter circuits on hardware kits.
7	Demonstrate working of AC voltage controller circuit on hardware kit.

Signature of HOD

Date:

Signature of faculty

Date:

Note: Please refer to Bloom's Taxonomy, to know the illustrative verbs that can be used to state the outcomes.



Department of Electrical & Electronics Engineering

# **GUIDELINES TO STUDY THE COURSE /SUBJECT**

Academic Year	: 2018-2019		
Semester	: I		
Name of the Program: B	.Tech	Year:III	Section: A/B
Course/Subject: Po	ower Electronics Lab	Course Code: GH	R15A3020
Name of the Faculty: P.I	Praveen Kumar(Asst.Pr	rof), M.Rekha(Asst.Prot	f)Dept.: EEE.
	Syed Sarfaraz Na	awaz(Assoc.Prof)	
Guidelines to study the	Course/ Subject:		

### Course Design and Delivery System (CDD):

The Course syllabus is written into number of learning objectives and outcomes.

These learning objectives and outcomes will be achieved through lectures, assessments, assignments, experiments in the laboratory, projects, seminars, presentations, etc.

Every student will be given an assessment plan, criteria for assessment, scheme of evaluation and grading method.

The Learning Process will be carried out through assessments of Knowledge, Skills and Attitude by various methods and the students will be given guidance to refer to the text books, reference books, journals, etc.

The faculty be able to –

Understand the principles of Learning

Understand the psychology of students

Develop instructional objectives for a given topic

Prepare course, unit and lesson plans

Understand different methods of teaching and learning

Use appropriate teaching and learning aids

Plan and deliver lectures effectively

Provide feedback to students using various methods of Assessments and tools of Evaluation

Act as a guide, advisor, counselor, facilitator, motivator and not just as a teacher alone





# POWER ELECTRONICS LAB SYLLABUS

#### LIST OF EXPERIMENTS:

#### SIMULATION CIRCUITS:

Task1: 1-Phase Half Wave Controlled Converter With R, RL& RLE load

Task2: 1-Phase Semi Converter With R, RL & RLE-Load

Task3: 1-Phase Full Controlled Converter With R, RL & RLE–Load Task4: 1-Phase Ac Voltage Controller With R, RL & RLE – Load

Task5: 1-Phase Cycloconverter

Task6: Phase Half & Full Bridge Inverter

Task7: 3- Phase Full Controlled Converter with R, RL & RLE –Load Task8: 3- Phase Bridge Inverter

Task9: Buck converter

Task10: Boost converter

#### HARDWARE:

**Task11:** Thyristorised Drive for PMDC Motor with Speed Measurement and Closed Loop Control

 Task12:
 IGBT
 Based
 4
 Quadrant
 Drive
 for
 PMDC
 Motor
 with
 Speed

 Measurement & Closed Loop Control
 Image: Clope Control
 Image: Clope Control

**Task13:** Three Phase Input Thyristorised Drive For Dc Motor With Closed Loop Control

**Task14:** Closed Loop control of Dc Motor Using Three Phase Fed Four Quadrant Chopper Drive

Task15: Speed Control of Three Phase Wound Induction Motor

Task16: Single Phase Fully Controlled Bridge Converter

Task17: Single Phase Half Controlled Bridge Converter

Task18: Single Phase Cyclo Converter



Department of Electrical & Electronics Engineering

# **COURSE SCHEDULE**

Academic Year	: 2018-2019
Semester	: I
Name of the Program:	B.Tech Year:III Section: A/B

Course/Subject: ... Power Electronics Lab Course Code: ... GR15A3020

Name of the Faculty: .P.Praveen Kumar(Asst.Prof), M.Rekha (Asst.Prof), Dept.: ... EEE...

Syed Sarfaraz Nawaz(Assoc.Prof)

S.No	Description	Total No.of
		Periods
1	Introduction to MATLAB	1
2	1-Phase Half Wave Controlled Converter With ,RL&RLE Loads	2
3	1-Phase Semi Converter With R,RL&RLE Loads	3
4	1-Phase Full Controlled Converter With R,RL&RLE Loads	3
5	1-Phase AC Voltage Controller With R,RL&RLE Loads	3
6	1-Phase Cyclo converter	3
7	1-Phase Half and Full Bridge Inverter	3
8	3-Phase Full Controlled Converter With R,RL,RLE-Load	3
9	3-Phase Bridge Inverter	3
10	Buck Converter	3
11	Boost converter	3
12	Thyristorised drive for PMDC motor with speed measurement and closed loop control	3
13	IGBT based 4 quadrant drive for PMDC motor with speed measurement & closed loop control	3
14	Three phase input Thyristorised drive for DC motor with closed loop control	3
15	Closed loop control of DC motor using three phase fed four quadrant Chopper Drive	3
16	Speed control of Three phase wound induction motor	3
17	Speed control of Three phase wound induction motor	3
18	Single phase fully controlled bridge converter	3
19	Single phase half controlled bridge converter	3
20	Single phase Cyclo converter	3

Total No. of Instructional periods available for the course: .....54.... Periods





## SCHEDULE OF INSRTUCTIONS COURSE PLAN

Academic Year : 2018-2019

Semester : I

Course/Subject: ...... Power Electronics Lab ...... Course Code: GR15A3020...

Name of the Faculty: P.Praveen Kumar(Asst.Prof), M.Rekha(Asst.Prof)., Dept.: ... EEE.....

Syed Sarfaraz Nawaz (Assoc.Prof)

	No. of		Objecti	References
Event No.	Dorioda	Topics / Sub Topics	ves &	(Tayt Book
Expl.No.	Periods	Topics / Sub-Topics	Oute	(Text Dook,
			ome	Journal)
1.	1	Introduction to MATLAB	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Modelling and simulation by Dr.Shailender Jain Manual
2.	2	1-Phase Half Wave Controlled Converter With R,RL&RLE Loads	1,2&1,3, 6	Pg 251 in Power Electronics by P.S.Bimbra &Power Electronics Manual
3. 3.	2	1-Phase SemiConverter With R,RL&RLE Loads	1,2&1,3, 6	Pg 280 in Power Electronics by P.S.Bimbra Manual
4.	2	1-Phase Full Controlled Converter With R,RL&RLE Loads	1,2&1,3, 6,	Pg 265, PowerElectronics by P. S.Bimbhra &Power Electronics Manual
5.	2	1-Phase AC Voltage Controller With R,RL&RLE Loads	1,2&1,3, 6	Pg 511, Power Electronics by P. S.Bimbhra &Power Electronics Manual
6.	2	1-Phase Cycloconverter	1,2&1,3, 7	Pg 534, Power Electronics by P. S.Bimbhra &Power Electronics Manual
7.	2	1-Phase Half and Full Bridge Inverter	1,2&1,3, 6	Pg 416, Power Electronics by P. S.Bimbhra &Power Electronics Manual
	1	Internal Viva		
9.				



### Department of Electrical & Electronics Engineering

10.	2	3-Phase Full Controlled Converter With R,RL,RLE-Load	1,2&1,3, 6	Pg 295, Power Electronics by P. S.Bimbhra &Power Electronics Manual
11.	2	3-Phase Bridge Inverter	1,2&1,3, 6	Pg 442, Power Electronics by P. S.Bimbhra &Power Electronics Manual
12.	2	Buck Converter	1,2&1,3, 6	Pg 348, Power Electronics by P. S.Bimbhra &Power Electronics Manual
13.	2	Boost Converter	1,2&1,3, 6	Pg351,Power Electronics&Power ElectronicsManual
14.	2	Thyristorised drive for PMDC motor with speed measurement and closed loop control	1,2,3&1, 2	Power Electronics Manual
15.	2	IGBT based 4 quadrant drive for PMDC motor with speed measurement &closed loop control	1,2,3&1, 2	Power Electronics Manual
16.	2	Three phase input Thyristorised drive for DC motor with closed loop control	1,2,3&1,2	Power Electronics Manual
17.	2	Speed control of Three phase wound induction motor	1,2,3&1, 2	Power Electronics Manual
18.	1	Single phase fully controlled bridge converter	1,2&1,2	Power Electronics Manual
19.	1	Single phase half controlled bridge converter	1,2&1,2	Power Electronics Manual
20.	1	Single phase Cyclo converter	1,2&2,7	Powe rElectronics Manual

Signature of HOD

Signature of faculty

Date:

Date:

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.

2. ADDITIONAL TOPICS COVERED, IF ANY, MAY ALSO BE SPECIFIED IN BOLD

3. MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH

TOPIC



Department of Electrical & Electronics Engineering

# **EVALUATION STRATEGY**

Academic Year : 2018-2019

Semester : I

Name of the Faculty: P.Praveen Kumar(Asst.Prof), M.Rekha(Asst.Prof)., Dept.:....EEE......Syed Sarfaraz Nawaz(Assoc.Prof)

1. TARGET:

- a) Percentage for pass:
- b) Percentage of class:

### 2. COURSE PLAN & CONTENT DELIVERY

(Please write how you intend to cover the contents: i.e., coverage of Units/Lessons by lectures, design, exercises, solving numerical problems, demonstration of models, model preparation, experiments in the Lab., or by assignments, etc.)

- 2.1 Demonstrating the experiments
- 2.2 Using softwares like PSim and Matlab in laptops/pc's
- 2.3 Using hardware kits

### 3. METHOD OF EVALUATION

- 3.1 Continuous Assessment Examinations (CAE-I, CAE-II)
- 3.2 Internal Exam
- 3.3 Mini Projects
- 3.4 Quiz
- 3.5 Semester/End Examination
- 3.6  $\Box$  Others

4. List out any new topic(s) or any innovation you would like to introduce in teaching the subjects in this Semester.

Signature of HOD



Department of Electrical & Electronics Engineering

# **RESULT ANALYSIS**

	Total	Total	No. of	GRA	GRA	GRAD	GRA	GRA	GRA	GRA	PASS
	No.	No. of	Stude	DE	DE=	E=8	DE=	DE=	DE=	DE=	PERCE
	Of	Stude	nts	=10	9		7	6	5	4	NTAG
Year	Studen	nts	Failed								E(%)
	ts	Passe									
	appear	d									
	ed										
2018-19	142	139	02	00	01	02	07	27	31	72	98.59
2010 15											
	140	138	02	00	03	00	01	18	11	105	98.57
2017-18				(<60	(60-	(>70					
				%)	70%)	%)					
	124	122	02	00	07	105					98.38
2016-17				(<60	(60-	(>70					
				%)	70%)	%)					

# Faculty

Lab	Batch	Faculty
POWER ELECTRONICS AND SIMULATION LAB	2018-19	P.PRAVEEN KUMAR,SYED SARAFARAZ NAWAZ, M.REKHA
POWER ELECTRONICS AND SIMULATION LAB	2017-18	DR.T.SURESH KUMAR, SYED SARFARAZ NAWAZ, M REKHA
POWER ELECTRONICS AND SIMULATION LAB	2016-17	G SWAPNA, M REKHA,S RADHIKA





# FEEDBACK FROM STUDENTS

Name	of the Instructor	F.Fraueen Kumar		
Facul	ny 1D	609		
Branc	h	tit .		
Class	and Semester/Section	11/1/8		
Acade	ch Tatle	2018-19		
Total	No. of Responses (class strength	53/21		
No	Questions of Fe	odback	Average	
No				
2	The teacher pays attention to	diares.	2.5	
3	The Lauguage and communication	skills of the teacher is	3.5	
4	In the sension Interactive?		3 4807692307692308	
2	Rate your teacher's explanation in	clearing the doubts	3.5576973076923075	
	Rate your teachers commitment in	competing the systems	1.5769230769230771	
	Rate your teachers use of teaching	aids	3.6153846153846154	
9	Rate your teacher's guidance in of NPTEL, Mondle, Swayam, Project	her activities like fs.	3.634615384615384	
	What is your overall opinion about	t the teacher?	3.595153846153846	
Net Fa	ndback on a scale of 1 to 4: 3.5556			
	to by Principal			



# Department of Electrical & Electronics Engineering

	Nonnitation of Toucher	Appraired by Student		
	Academic Ye	or 2018-19		
Name	e of the instructor	Syed Sartaria: Nawar		
Facul	ty ID	8.95		
Brane	h	100		
Class	and Semester/Section	III/1/A		
Acade	HINC YEAR	2018-19		
Subje	et Tute	PELah		
Total	No. of thesportses/class strength	45/74		
Accesso	e rating on a scale of 4 for the second	ses conditioned		
. *	Questions of Fee	stback.	Average	
No	and the second se	MARCE .		
	How do the teacher explain the sub-	yeek?	1.1006956521739131	
	The line of pays and communication	skills of the teacher Is	1.046/9545217391304	
-	Is the sension Docractive?	and the second second	1 1304347926006958	
30	Rate your teacher's explanation in	3 0434752608695634		
0.	Rate your teachers commitment in	3 3354347826086958		
7	Rate your wachers prateriality	3 152173933043478		
	Rate your teachers use of teaching.	3.1086950521739131		
8	Rate your leacher's guidance in on	vour leacher's guidance in other activities like		
10	What is your overall oninion about	the teacher?	3.153173913043478	
et Fes	edback on a scale of 1 to 4: 3.11086 s by HOD:	/05652173912		
rinark	s by Principal:			
emarka	by Director:			



### Department of Electrical & Electronics Engineering

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# Gokaraju Rangaraju Institute of Engineering & Technology (Autonomous)

### Summation of Teacher Appraisal by Student Academic Year 2018-19

Name of the Instructor	M Delha
Faculty ID	W Rekna
Branch	933
oralich	EEE
Class and Semester/Section	W/1/A
Academic Year	2018 10
Subject Title	2018-19
Total No (D.	PE Lab
rotar No. of Responses/class strength	45/71

Average rating on a scale of 4 for the responses considered:

S. No	Questions of Feedback	Average
1	How do the teacher explain the subject?	2 1055524220400400
2	The teacher pays attention to	3.1956521739130435
3	The Language and communication skills of the teacher in	3.1956521/39130435
4	Is the session Interactive?	3.2826086956521/38
5	Rate your teacher's explanation in clearing the doubte	3.1521/39130434/8
6	Rate your teachers commitment in completing the syllabus	3.1930321/39130435
7	Rate your teachers punctuality	3.221/39130434/8262
8	Rate your teachers use of teaching aids	3 1956521720120425
9	Rate your teacher's guidance in other activities like NPTEL, Moodle, Swayam, Projects,	3.152173913043478
10	What is your overall opinion about the teacher?	3.2173913043478262

2

Net Feedback on a scale of 1 to 4: 3.2043478260869565