K.S.R.M COLLEGE OF ENGINEERING

UGC-Autonomous
Kadapa,AP
www.ksrmce.ac.in

Dated: 25-06-2019

Lr./KSRMCE/Principal Office /2019-20/

Principal Office Orders

As per the decisions of the Academic Council meeting held on 15-06–2019 the undersigned members are been appointed as the Board of studies for Electrical and Electronics Engineering for a period of 2 years.

S.No.	Name	Designation
1.	Dr. K. Amaresh	Professor & HoD
2.	Dr. G. Yesuratnam	Professor in CSE,Osmania University
3.	Dr. B. Ravikumar	Associate Professor (IIT - Hyderabad)
4.	Dr. P. Kiranmayi	Professor & HoD,(JNTUA)
5.	Smt. T. Hari Priya	Alumni,Assistant Professor, (VNR VJIET, Hyderabad)
6.	Smt. C.N. Arpitha	Associate Professor
7.	Sri K.Rama Mohan Reddy	Associate Professor
8.	Dr. T. Mari Prasanth	Associate Professor
9.	Sri M. Bhaskar Reddy	Associate Professor
10.	Sri K. Kalyan Kumar	Assistant Professor
11.	Smt. Saleha Tabassum	Assistant Professor
12.	Sri P. Durga Prasad	Assistant Professor
13.	Sri M.Girish Babu	Industry Expert

The orders will come in to force for with immediate effect.

V. S. S. Murthy
Principal

Cc to:

The Management/ Director for information
The HoD of CSE for necessary actions
The Members for Information
The Website Committee for upload

BoS Meeting Scheduled on 21.09.2020

Inbox

HOD EEE <hod.eee@ksrmce.ac.in> Sun, Sep 20, 2020, 7:58 PM

to Yesuratnam, Ravikumar, kiranmayi0109, girishbabu.meruva, Hari, faculty.eee

Good evening to all,
Bos Meeting through online is scheduled on 21.09.2020 from 11.00-12.00 pm to discuss and finalize the Minor and Honor's degree course structure, instructions and syllabus. I request all the BoS members to attend the meeting and give your valuable suggestions so as to incorporate the same in the R18 regulations.
Platform: Google Meet
Link: meet.google.com/btj-hbfo-tja

Thanks & Regards

Dr. K. AMARESH, **M. Tech., Ph.D.,**
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BOARD OF STUDIES MEETING – 2020-21
K.S.R.M COLLEGE OF ENGINEERING
AUTONOMOUS

Minutes of the Meeting

Date	21.09. 2020	**Day**	**Monday**
Time	**10:00AM**	**Venue**	**Virtual meeting : http://meet.google.com/btj-hbfo-tja**
Dept./SS	**EEE**	**Convener**	**Dr.K. Amaresh**

MembersPresent: 12				**Members Absent: 00**		
S.No	**Name**	**Designation**	**Signature**	**S.No**	**Name**	**Designation**
1.	Dr. K. Amaresh	Professor & HoD				
2.	Smt. C.N. Arpitha	Associate Professor				
3.	Sri M. Bhaskar Reddy	Associate Professor				
4.	Sri K. Rama Mohan Reddy	Associate Professor				
5.	Dr. T. Mari Prasath	Associate Professor				
6.	Sri K. Kalyan Kumar	Assistant Professor				
7.	Smt. Saleha Tabassum	Assistant Professor				
8.	Sri P. Durga Prasad	Assistant Professor				
9.	Dr. G. Yesuratnam	Professor (Osmania University)				
10.	Dr. B. Ravikumar	Associate Professor (IIT - Hyderabad)				
11.	Dr. P. Kiranmayi	Professor & HoD (JNTU A)				

12	Sri T. Kishore Kumar	Assistant Professor				

Dr.K.Amaresh, welcomed all the members to the meeting and presented the agenda of the meeting.

There solutions are:

	Todo item	Discussion	Resolution	Coordinator/in-charge
1	Minor Degree Course Structure & Syllabus	The Head of the Department has presented the syllabus designed by the faculty after taking the feedback from all stakeholders and comparing with premier institute syllabus.	The panel members have suggested to make few changes regarding the titles of the subjects in Minor Degree. The changes are as follows: a) Circuits & Networks to Circuit Theory b) Basics of electrical Measurements to Basics of Electrical Measurements & Instrumentation.	Dr.K.Amaresh/ Sri M. Bhaskar Reddy
2	Honour's Degree Course Structure & Syllabus Regulations for Minor & Honour's Degree Course	The Head of the Department has presented the syllabus designed by the faculty after taking the feedback from all stakeholders and comparing with premier institute syllabus.	Regarding the syllabus of Basics of Power electronics few modifications have been suggested by the members. In Honour's degree course structure the members have suggested to replace Fiber Optic Communications with SCADA & its Applications and Embedded Systems with Signals & Systems. Members along with university nominee, subject experts and chairman of BoS has decided that the Mini Project under Minor Degree course should be evaluated for 100 Marks by Internal Committee Members (HoD, Two Senior Faculty Members) and Concerned Guide by conducting Three Reviews and Final Project Viva-voce.	Dr.K.Amaresh/ Sri T. Kishore Kumar

3.	Any other information for discussion	The Head of the Department has presented the syllabus designed by the faculty after taking the feedback from all stakeholders and comparing with premier institute syllabus.	As per the suggestions given by the members amendments have been done and taken approval for the above courses. BOS members suggested to add certification courses on latest technologies.	Sri K.Kalyan Kumar/Sri P.Durga Prasad

The Head of the Department have proposed the Vote of thanks and Concluded the meeting.

Convener

Dr. K. AMARESH,
M.Tech., Ph.D
Professor & HOD
Department of EEE
SRM College of Engineering
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V. S. S. Murty
Principal

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Department of Electrical and Electronics Engineering

The following are the list of the Certificate Courses/Short Term Courses for the academic year 2020-21.

S. No.	B.Tech, Sem	Certificate Courses / Short Term Courses	Course Duration	Resource Person	Faculty coordinators	Total No. of Students
1	B.Tech III Sem	Design of Electrical Circuits using MULTISIM	24/08/2020 - 11/09/2020	Smt.Saleha Tabassum	Miss.A.Jyothirmayi	48
2	B.Tech III Sem	Introduction to Solar PV Systems	16/11/2020 - 04/12/2020	Sri M.Bhasker Reddy	Sri K.RamaMohan Reddy	52
3	B.Tech V Sem	Circuit Design using MULTISIM	21/09/2020 - 09/10/2020	Miss.A.Jyothirmayi	Smt.Saleha Tabassum	51
4	B.Tech V Sem	MATLAB Programming	23/11/2020 - 15/12/2020	Dr.T.Mariprasath	Sri S.Khader Vali	54
5	B.Tech VII Sem	PLC and Its Applications	01/09/2020 - 19/09/2020	Sri Kalyan Kumar	Sri T.Kishore Kumar	84
6	B.Tech VII Sem	LAB VIEW Programming	16/11/2020 - 04/12/2020	Dr.T.Mariprasath	Sri P.Durga Prasad	92
7	B.Tech IV sem	Industrial Safety	22/03/2021 - 16/04/2021	Sri K.RamaMohan Reddy	Sri M.Bhasker Reddy	56
8	B.Tech VI Sem	Internet of Things - Its Applications	24/05/2021- 15/06/2021	Sri N.Sidhik	Smt.Saleha Tabassum	52
9	B.Tech VI Sem	Introduction to ETAP	22/03/2021- 15/04/2021	Dr. K.Amaresh	Sri N.Sidhik	45
10	B.Tech VIII Sem	PCB Design	17/05/2021 – 22/05/2021	Sri T.Kishore Kumar	Sri K.Kalyan Kumar	72

Convener/HOD

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Department of Electrical & Electronics Engineering

R18 (B. Tech., IV Semester)

Course Title	**Electrical Measurements**					**B. Tech. EEE IV Sem**		
Course Code	Category	Hours/Week			Credits	Maximum Marks		
1802403	Professional Core (PCC)	L	T	P	C	Continuous Internal Assessment	End Exam	Total
		3	--	--	3	30	70	100
Mid Exam Duration : 2Hrs						End Exam Duration : 3Hrs		

Course Objectives: The objective of the course is to learn about the measuring instruments, ac and dc bridges, instrument transformer, potentiometer and CRO.

Course Outcomes: On successful completion of this course, the students will be able to,

CO 1	Classify the types of instruments and bridges.
CO 2	Choose suitable instrument to measure Voltage, Current, Power, Energy and lissajous patterns.
CO 3	Determine circuit parameters using Bridges.
CO 4	Measure Phase angle errors from CT's and PT's, magnitude and frequency from the CRO.

UNIT - I

Measuring Instruments

Classification, deflecting, control and damping torques, ammeters and voltmeters, PMMC, moving iron, dynamometer type instruments, expression for the deflecting torque and control torque, errors and compensations, extension of range using shunt and multipliers, numeric problems.

UNIT - II

Measurement of Power

Single phase dynamometer wattmeter, expression for deflecting and control torques, types of p.f. meters –dynamometer and moving iron type, 1Φ& 3Φ meters

Measurement of Energy

Single phase induction type energy meter, driving and braking torques, errors and compensations. Threephase energy meter.

UNIT - III

D.C. Bridges

Method of measuring low, medium and high resistance – sensitivity of wheatstone's bridge – kelvin's double bridge for measuring low resistance,measurement of high resistance – loss of charge method.

A.C Bridges

Measurement of inductance - maxwell's bridge, anderson's bridge, measurement of capacitance and loss angle, desauty's bridge, schering bridge- frequency measurement- wien's bridge.

UNIT - IV

Instrument Transformers

CT and PT – ratio and phase angle errors–design considerations.

Potentiometers

Principle and operation of d.c. crompton's potentiometer, standardization, measurement of unknown resistance, current and voltage. a.c. potentiometers: polar and coordinate type's, standardization – applications.

UNIT - V

Electronic Measurements

Cathode ray oscilloscope – cathode ray tube – time base generator – horizontal and vertical amplifiers – application of cro – measurement of phase, frequency, current & voltage – lissajous pattern.

Digital meters

Digital voltmeter – successive approximation, ramp and integrating type.

Text Books

1. Electrical measurements and measuring Instruments – by E.W. Golding and F.C. Widdis, 5th Edition, Reem Publications.
2. Electrical & Electronic Measurement & Instruments by A. K. Sawhney, Dhanpat Rai & Co.Publications.
3. Electronic Instrumentation and measurement techniques by William D Cooper- Prentice Hall Publishers

Reference Books

1. Electrical Measurements – by Buckungham and Price, Prentice – Hall
2. Electrical Measurements: Fundamentals, Concepts, Appliations – by Ressland, M.U, New AgeInternational (P) Limited, Publish.
3. Electronic Instrumentation by H. S. Kalsi, Tata Grawhill Mc, 3rd Edition.

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Department of Electrical & Electronics Engineering

R18 (B. Tech., IV Semester)

Course Title	Electrical Measurements Lab				B. Tech. EEE IV Sem		
Course Code	Category	Hours/Week		Credits	Maximum Marks		
		L	T	P	C	Continuous Internal Assessment	End Exam	Total
1802407	Professional Core (PCC)	--	--	2	1	50	50	100
						End Exam Duration : 3Hrs		

Course Objectives: The objective of the course is to calibrate instruments and measure various circuit parameters.

Course Outcomes: On successful completion of this course, the students will be able to,

CO 1	Compare and calibrate various measuring Instruments
CO 2	Identify balanced conditions among bridges
CO 3	Measure the percentage errors among measuring instruments

List of Experiments (Any Ten Experiments)

1. Calibration and testing of single phase energy meter.
2. Calibration of dynamometer power factor meter.
3. Crompton d.c. potentiometer – calibration of pmmc ammeter and pmmc voltmeter.
4. Kelvin's double bridge – measurement of resistance – determination of tolerance.
5. Measurement of % ratio error and phase angle of given C. T. by comparison.
6. Schering bridge & Anderson bridge.
7. Measurement of 3 phase reactive power with single phase wattmeter.
8. Measurement of parameters of a choke using 3 voltmeter and 3 ammeter methods.
9. Calibration lpf wattmeter – by phantom testing.
10. Measurement of 3 phase power with two wattmeter method (balanced & unbalanced).
11. Dielectric oil testing using H. T. testing kit
12. AC potentiometer – calibration of ac voltmeter, parameters of choke.

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Department of Electrical & Electronics Engineering

R18 (B. Tech., V Semester)

Course Title	Power Electronics					B. Tech. V Sem		
Course Code	Category	Hours/Week			Credits	Maximum Marks		
1802503	Professional Core (PCC)	L	T	P	C	Continuous Internal Assessment	End Exam	Total
		3	0	0	3	30	70	100
Mid Exam Duration : 2Hrs						End Exam Duration : 3Hrs		

Course Objectives: The objective of the course is to learn the basic concepts of power semiconductor devices, converters, choppers and inverters and their analysis.

Course Outcomes: On successful completion of this course, the students will be able to

CO 1	Understand the basic operation of power semiconductor devices and passive components.
CO 2	Analyze the performance of different power converters subjected to various loads.
CO 3	Design static and dynamic equalizing circuits, Snubber circuits.
CO 4	Evaluate number of SCRs required for desired series /parallel operation, Electrical parameters and different variables of various power electronic circuits.
CO 5	

UNIT - I

Silicon Controlled Rectifier: SCR – static characteristics –turn on and off mechanism – gate characteristics – dynamic characteristics – series and parallel operation of scr's – static and dynamic equalization circuits – design of snubber circuit – line commutation and forced commutation circuits, MOSFET, IGBT, GTO Characteristics.

UNIT - II

Phase controlled Rectifiers: Phase controlled rectifiers – single phase half and fully controlled converters – midpoint and bridge connections with R and RL loads – effect of source inductance-single phase and three phase half and fully controlled converters with R load - single phase and three phase dual converters with R and RL loads-numerical problems.

UNIT - III

AC Voltage Controllers: AC voltage controllers- single phase ac voltage controllers with SCR and triac for R and RL load –cyclo converters – single phase cyclo converters (mid- point and bridge configuration) with R and RL loads.

UNIT - IV

Choppers: Choppers – principle of operation – control strategies- types of chopper circuits – type A, type B, type C, type D and type E chopper circuits - multiphase chopper circuits – buck converter, boost converter, buck -boost converter, problems.

UNIT - V

Inverters: Inverters – single phase inverter – basic series inverter – basic parallel capacitor inverter – bridge inverter– current source inverter - forced commutation circuits for bridge inverters – output voltage control techniques- PWM techniques- space vector modulation - harmonic reduction techniques.

Text Books

1. Power Electronics – By M.D Singh & K.B. Kanchandhani, Tata McGrawHill PublishingCompany, 1998.
2. Power Electronics - Circuits, Devices and Applications – by M.H. Rashid, Prentice Hall ofIndia, 2nd Edition 1998.
3. Power Electronics- by PS Bimbhra, Khanna Publications.

Reference Books

1. Power Electronics – By Vedam Subramanyam, New Age Information Limited, 3rd Edition.
2. Power Electronics – By V.R. Murthy, Oxford University Press, 1st Edition – 2005
3. Power Electronics – By P.C Sen, Tata Mc Graw Hill Publishing.
4. Thyristorised Power Controllers – By G.K. Dubey, S. R. Doradla, A. Joshi and R. M. K.Sinha, New Age Informational(p) Limited Publishing 1996.

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Department of Electrical & Electronics Engineering

R18 (B. Tech., VIII Semester)

Course Title	SCADA & ItsApplications(PE – IV)					B. Tech. VIII Semester		
Course Code	Category	Hours/Week			Credits	Maximum Marks		
1802804	Professional Elective (PEC)	L	T	P	C	Continuous Internal Assessment	End Exam	Total
		3	0	0	3	30	70	100
Mid Exam Duration: 2 Hrs						End Exam Duration : 3Hrs		

Course Objectives: The student is able to understand SCADA and its applications.

On successful completion of this course, the students will be able to

CO 1	Describe the basic tasks of Supervisory Control Systems (SCADA) as well as their typical applications.
CO 2	Acquire knowledge about SCADA architecture, various advantages and disadvantages of each system
CO 3	Acquire knowledge about SCADA system components: remote terminal units, PLCs, intelligent electronic devices, HMI systems, SCADA server
CO 4	Acquire knowledge about SCADA communication, various industrial communication technologies, open standard communication protocols
CO5	Learn and understand about SCADA applications in transmission and distribution sector, industries etc
CO6	Gain knowledge and understanding for the design and implementation of a SCADA system

UNIT - I

Introduction to SCADA: Data acquisition systems, Evolution of SCADA, Communication technologies, Monitoringand supervisory functions, SCADA applications in Utility Automation, Industries

UNIT - II

SCADA System Components: Schemes- Remote Terminal Unit (RTU), Intelligent Electronic Devices (IED),Programmable Logic Controller (PLC), Communication Network, SCADA Server, SCADA/HMI Systems

UNIT - III

SCADA Architecture: Various SCADA architectures, advantages and disadvantages of each system - single unified standard architecture -IEC 61850

UNIT - IV

SCADA Communication: various industrial communication technologies -wired and wireless methods and fiber optics. Open standard communication protocols

UNIT - V

SCADA Applications: Utility applications- Transmission and Distribution sector -operations, monitoring, analysis and improvement. Industries - oil, gas and water.

Text Books

1. Stuart A. Boyer: SCADA-Supervisory Control and Data Acquisition, Instrument Society of America Publications, USA,2004.
2. Gordon Clarke, Deon Reynders: Practical Modern SCADA Protocols: DNP3, 60870.5 and RelatedSystems, Newnes Publications, Oxford, UK,2004.

Reference Books

1. William T. Shaw, Cyber security for SCADA systems, PennWell Books, 2006.
2. David Bailey, Edwin Wright, Practical SCADA for industry, Newnes, 2003.
3. Michael Wiebe, A guide to utility automation: AMR, SCADA, and IT systems for electric power,PennWell 1999.

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Course Title	Project Stage - I				B. Tech. VII Semester		
Course Code	Category	Hours / Week			Credits	Maximum Marks	
1802711	PROJ	L	T	P	C	Continuous Internal Assessment	End Exam	Total
		--	--	6	3	100	--	100

Course Objectives: The objective of the course is to

- develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
- Acquire and apply new knowledge as needed, using appropriate learning strategies.
- Apply knowledge of probability and statistics to applications in electrical engineering.

Course Outcomes: On successful completion of this course, the students will be able to

CO 1	Demonstrate a sound technical knowledge of their selected project topic.
CO 2	Understand problem identification, formulation and solution
CO 3	Design engineering solutions to complex problems utilising a systems approach.
CO 4	Communicate with engineers and the community at large in written an oral form
CO 5	Demonstrate the knowledge, skills and attitudes of a professional engineer

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