Department of Electrical and Electronics Engineering

Course Outcome and its mapping

with POs and PSOs

Regulations 2017

Vision and Mission - Institute

Vision

To carve the youth as dynamic competent, valued and knowledgeable Technocrats through research, innovation and entrepreneurial development for accomplishing the global expectations.

Mission

M1: To inculcate the academic excellence in engineering education to create talented professionals.

M2: To promote research in basic sciences and applied engineering among faculty and students to fulfill the societal expectation.

M3: To enhance the Holistic development of students through meaningful interaction with industry and academia.

M4: To foster the students on par with sustainable development goals thereby contributing to the process of nation building.

M5: To nurture and retain conducive lifelong learning environment towards professional excellence.

Vision and Mission - Department of Electrical and Electronics Engineering

Vision

To make certain transformational impact on student community towards learning, innovating, discovering and creating new knowledge with respect to the field of electrical and electronics engineering and serve the country, humanity as well as society at large.

Mission

M1: To provide well equipped infrastructure and facilities to produce electrical engineers of high caliber to serve the society.

M2: To create an ethical human resource proficient with knowledge and attitude for meeting future needs.

M3: To instill creative thinking among students through training and interaction with industries to become a successful professional.

M4: To provide state-of-the-art resources that contribute to achieve excellence in research and development activities.

M5: To facilitate individual and team activities to enhance personality and soft skills to allow them to grow in diversified fields of their careers as professional engineers, researchers, scientists or teachers.

Program Outcomes (POs)

PO1: **Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: **Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3: **Design/Development of solutions:** Design solutions for complex engineering problem and design system components or process that meet the specified needs with appropriate considerations for the public health and safety and the cultural, societal and environmental considerations.

PO4: **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5: **Modern Tool Usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

PO6: **The Engineer and Society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7: **Environment and Sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of need for sustainable development.

PO8: **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: **Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11: **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one’s own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Specific Outcomes (PSOs)

PSO1: Analyze and identify and find optimal solutions for the contemporary issues in industrial and societal energy requirements by applying suitable design and control strategies.

PSO2: Apply appropriate modern engineering tools and techniques to engage in life long learning and to get an employment in the field of Electrical and Electronics Engineering.

Program Educational Objectives (PEO's)

The graduate of Electrical and Electronics Engineering will have,

PEO1: Find employment in Core Electrical and Electronics Engineering and service sectors.

PEO2: Get elevated to technical lead position and lead the organization competitively.

PEO3: Enter into higher studies leading to post-graduate and research degrees. Become consultant and provide solutions to the practical problems of core organization.

PEO4: Become an entrepreneur and be part of electrical and electronics product and service industries.

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

BE ELECTRICAL AND ELECTRONICS ENGINEERING

CO Mapping with POs

S. No.	Sem	Course code	Course title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1	I	HS8151	Communicative English	0.00	0.00	0.00	1.00	2.00	0.00	0.00	0.00	3.00	3.00	0.00	2.00
2	I	MA8151	Engineering Mathematics - I	3.00	3.00	3.00	3.00	3.00	0.00	0.00	0.00	3.00	0.00	1.00	1.00
3	I	PH8151	Engineering Physics	3.00	1.60	1.60	1.60	2.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
4	I	CY8151	Engineering Chemistry	3.00	2.50	1.80	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
5	I	GE8151	Problem Solving and Python Programming	3.00	2.00	1.80	1.60	3.00	1.00	1.20	1.00	1.40	1.00	2.40	3.00
6	I	GE8152	Engineering Graphics	2.00	2.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
7	I	GE8161	Problem Solving and Python Programming Laboratory	3.00	3.00	2.30	2.00	2.50	1.00	1.30	1.00	2.00	1.70	2.00	3.00
8	I	BS8161	Physics and Chemistry Laboratory	3.00	1.70	1.60	1.00	1.00	1.00	1.00	2.00	1.00	1.00	0.00	1.00
9	II	HS8251	Technical English	0.00	0.00	0.00	1.00	2.00	0.00	0.00	0.00	3.00	3.00	0.00	2.00
10	II	MA8251	Engineering Mathematics - II	3.00	3.00	3.00	0.00	2.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00
11	II	PH8253	Physics for Electronics Engineering	2.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
12	II	BE8252	Basic Civil and Mechanical Engineering	2.16	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	II	EE8251	Circuit Theory	2.00	1.67	1.25	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
14	II	GE8291	Environmental Science and Engineering	0.00	0.00	0.00	0.00	0.00	3.00	3.00	2.50	0.00	1.00	0.00	1.00
15	II	GE8261	Engineering Practices Laboratory	3.00	3.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	1.00	0.00	2.00

S. No.	Sem	Course code	Course title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
16	II	EE8261	Electric Circuits Laboratory	2.20	1.30	1.25	1.00	3.00	0.00	0.00	3.00	3.00	3.00	3.00	2.00
17	III	MA8353	Transforms and Partial Differential Equations	3.00	2.83	1.83	2.00	1.00	0.00	1.20	1.00	1.40	1.00	2.67	1.00
18	III	EE8351	Digital Logic Circuits	3.00	3.00	2.00	2.00	3.00	1.00	2.00	0.00	0.00	0.00	0.00	1.00
19	III	EE8391	Electromagnetic Theory	3.00	3.00	2.00	2.00	2.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
20	III	EE8301	Electrical Machines - I	2.83	2.00	2.00	2.00	1.00	1.50	1.00	0.00	1.00	1.00	1.00	2.00
21	III	EC8353	Electron Devices and Circuits	3.00	2.00	3.00	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
22	III	ME8792	Power Plant Engineering	3.00	1.83	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
23	III	EC8311	Electronics Laboratory	2.25	1.33	1.25	1.00	3.00	0.00	0.00	3.00	3.00	3.00	3.00	2.00
24	III	EE8311	Electrical Machines Laboratory - I	3.00	3.00	1.50	1.50	1.17	1.33	1.33	0.00	0.00	1.00	1.33	0.00
25	III	MA8491	Numerical Methods	3.00	3.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
26	IV	EE8401	Electrical Machines - II	2.00	1.50	1.30	1.50	0.00	1.00	2.00	0.00	1.00	0.00	2.00	1.00
27	IV	EE8402	Transmission and Distribution	3.00	3.00	3.00	2.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
28	IV	EE8403	Measurements and Instrumentation	3.00	1.00	3.00	2.00	1.00	3.00	0.00	0.00	0.00	1.00	1.00	2.00
29	IV	EE8451	Linear Integrated Circuits and Applications	3.00	1.50	2.16	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00
30	IV	IC8451	Control Systems	3.00	2.00	1.00	1.00	0.00	1.50	1.00	1.00	0.00	1.00	0.00	1.00
31	IV	EE8411	Electrical Machines Laboratory - II	3.00	3.00	1.40	1.40	1.00	1.20	1.20	0.00	0.00	1.00	1.20	0.00
32	IV	EE8461	Linear and Digital Integrated Circuits Laboratory	1.00	0.00	1.60	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00

S. No.	Sem	Course code	Course title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
33	IV	EE8412	Technical Seminar	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
34	IV	EE8501	Power System Analysis	3.00	3.00	3.00	2.00	3.00	1.00	2.00	0.00	0.00	0.00	2.00	2.00
35	V	EE8551	Microprocessors and Microcontrollers	3.00	0.00	3.00	0.00	3.00	0.00	0.00	3.00	3.00	0.00	3.00	3.00
36	V	EE8552	Power Electronics	2.00	2.40	2.00	2.00	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.33
37	V	EE8591	Digital Signal Processing	3.00	3.00	1.83	2.50	1.83	1.50	1.50		1.83	1.33	1.67	2.83
38	V	CS8392	Object Oriented Programming	3.00	3.00	3.00	2.67	2.67	2.83	1.00	1.00	1.50	1.33	2.17	3.00
39	V	OMD551	Open Elective I*-Basics of Biomedical Instrumentation	3.00	2.00	2.00	2.83	3.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00
40	V	EE8511	Control and Instrumentation Laboratory	2.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
41	V	HS8581	Professional Communication	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	3.00	3.00	0.00	2.00
42	V	CS8383	Object Oriented Programming Laboratory	2.00	1.00	0.00	0.00	0.00	0.00	0.00	3.00	3.00	3.00	3.00	0.00
43	V	EE8601	Solid State Drives	2.67	2.67	2.67	1.50	0.00	1.50	0.00	0.00	1.40	1.33	0.00	2.00
44	VI	EE8602	Protection and Switchgear	2.17	1.83	1.50	1.25	2.00	0.00	1.20	0.00	0.00	0.00	0.00	1.67
45	VI	EE8691	Embedded Systems	2.00	1.00	1.60	1.50	1.67	2.00	1.25	0.00	1.00	1.00	1.67	2.50
46	VI	EE8002	Professional Elective I-Design of Electrical Apparatus	3.00	3.00	2.00	2.00	2.50	1.50	1.00	0.00	1.00	1.00	1.00	1.00
47	VI	EE8005	Professional Elective II-Special Electrical Machines	3.00	1.50	2.17	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00
48	VI	EE8661	Power Electronics and Drives Laboratory	2.00	2.40	2.00	2.00	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.33

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

S. No.	Sem	Course code	Course title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
49	VI	EE8681	Microprocessors and Microcontrollers Laboratory	2.00	2.00	2.00	2.00	3.00	2.00	0.00	0.00	2.00	2.00	1.00	2.00
50	VI	EE8611	Mini Project	3.00	3.00	3.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	2.00	2.00
51	VII	EE8701	High Voltage Engineering	2.00	2.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00
52	VII	EE8702	Power System Operation and Control	3.00	3.00	3.00	2.00	3.00	1.00	2.00	0.00	0.00	0.00	2.00	2.00
53	VII	EE8703	Renewable Energy Systems	1.00	1.00	2.66	2.00	0.00	2.00	2.50	0.00	0.00	2.00	0.00	1.00
54	VII	OBT751	Open Elective II - Introduction to C Programming	2.40	2.33	2.00	0.00	2.00	2.00	0.00	0.00	0.00	0.00	0.00	1.00
55	VII	GE8074	Professional Elective III- Human Rights	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
56	VII	GE8077	Professional Elective IV- GE8077 Total Quality Management	0.00	2.00	0.00	0.00	2.00	3.00	3.00	3.00	3.00	3.00	0.00	0.00
57	VII	EE8711	Power System Simulation Laboratory	3.00	2.33	1.50	1.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
58	VII	EE8712	Renewable Energy Systems Laboratory	3.00	3.00	2.00	2.00	2.00	2.00	2.00	0.00	1.00	1.00	1.00	3.00
69	VII	MG8591	Professional Elective V- Principles of Management	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	2.00	0.00
60	VIII	EE8017	Professional Elective VI- High Voltage Direct Current Transmission	2.17	1.83	1.50	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.67
61	VIII	EE8811	Project Work	2.00	2.40	2.00	2.00	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.33

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

B.E ELECTRICAL AND ELECTRONICS ENGINEERING

CO Mapping with PSOs

S. No.	SEM	COURSE CODE	COURSE TITLE	PSO1	PSO2
1	I	HS8151	Communicative English	0.00	0.00
2	I	MA8151	Engineering Mathematics - I	1.00	1.00
3	I	PH8151	Engineering Physics	1.00	0.00
4	I	CY8151	Engineering Chemistry	1.00	0.00
5	I	GE8151	Problem Solving and Python Programming	1.00	0.00
6	I	GE8152	Engineering Graphics	1.00	0.00
7	I	GE8161	Problem Solving and Python Programming Laboratory	2.83	2.83
8	I	BS8161	Physics and Chemistry Laboratory	1.00	0.00
9	II	HS8251	Technical English	0.00	0.00
10	II	MA8251	Engineering Mathematics - II	1.00	1.00
11	II	PH8253	Physics for Electronics Engineering	2.00	0.00
12	II	BE8252	Basic Civil and Mechanical Engineering	0.00	0.00
13	II	EE8251	Circuit Theory	1.00	2.00
14	II	GE8291	Environmental Science and Engineering	1.00	0.00
15	II	GE8261	Engineering Practices Laboratory	2.00	2.00
16	II	EE8261	Electric Circuits Laboratory	1.20	0.00
17	III	MA8353	Transforms and Partial Differential Equations	3.00	1.00
18	III	EE8351	Digital Logic Circuits	2.00	1.00
19	III	EE8391	Electromagnetic Theory	3.00	1.00
20	III	EE8301	Electrical Machines - I	2.00	2.00
21	III	EC8353	Electron Devices and Circuits	2.00	1.00
22	III	ME8792	Power Plant Engineering	2.00	1.00

S. No.	SEM	COURSE CODE	COURSE TITLE	PSO1	PSO2
23	III	EC8311	Electronics Laboratory	2.00	0.00
24	III	EE8311	Electrical Machines Laboratory - I	3.00	2.00
25	III	MA8491	Numerical Methods	1.00	1.00
26	IV	EE8401	Electrical Machines - II	1.00	1.50
27	IV	EE8402	Transmission and Distribution	3.00	2.00
28	IV	EE8403	Measurements and Instrumentation	2.00	3.00
29	IV	EE8451	Linear Integrated Circuits and Applications	3.00	1.00
30	IV	IC8451	Control Systems	2.00	2.00
31	IV	EE8411	Electrical Machines Laboratory - II	3.00	2.00
32	IV	EE8461	Linear and Digital Integrated Circuits Laboratory	2.00	2.00
33	IV	EE8412	Technical Seminar	0.00	0.00
34	IV	EE8501	Power System Analysis	2.00	2.00
35	V	EE8551	Microprocessors and Microcontrollers	3.00	2.00
36	V	EE8552	Power Electronics	1.00	1.50
37	V	EE8591	Digital Signal Processing	2.00	2.33
38	V	CS8392	Object Oriented Programming	3.00	2.83
39	V	OMD551	Open Elective I*- Basics of Biomedical Instrumentation	3.00	1.00
40	V	EE8511	Control and Instrumentation Laboratory	3.00	0.00
41	V	HS8581	Professional Communication	0.00	0.00
42	V	CS8383	Object Oriented Programming Laboratory	2.00	0.00
43	V	EE8601	Solid State Drives	1.50	2.50
44	VI	EE8602	Protection and Switchgear	1.00	1.67
45	VI	EE8691	Embedded Systems	2.00	2.00

S. No.	SEM	COURSE CODE	COURSE TITLE	PSO1	PSO2
46	VI	EE8002	Professional Elective I-Design of Electrical Apparatus	1.50	2.00
47	VI	EE8005	Professional Elective II-Special Electrical Machines	3.00	1.00
48	VI	EE8661	Power Electronics and Drives Laboratory	1.00	1.68
49	VI	EE8681	Microprocessors and Microcontrollers Laboratory	2.50	1.00
50	VI	EE8611	Mini Project	3.00	3.00
51	VI	EE8701	High Voltage Engineering	1.00	1.00
52	VII	EE8702	Power System Operation and Control	2.00	2.00
53	VII	EE8703	Renewable Energy Systems	1.50	1.67
54	VII	OBT751	Open Elective II -Introduction to C Programming	1.00	0.00
55	VII	GE8074	Professional Elective III- Human Rights	0.00	0.00
56	VII	GE8077	Professional Elective IV-GE8077 Total Quality Management	2.00	2.00
57	VII	EE8711	Power System Simulation Laboratory	1.00	1.00
58	VII	EE8712	Renewable Energy Systems Laboratory	3.00	3.00
59	VII	MG8591	Professional Elective V- Principles of Management	1.00	0.00
60	VIII	EE8017	Professional Elective VI- High Voltage Direct Current Transmission	1.00	1.67
61	VIII	EE8811	Project Work	1.00	1.50

Course Code/ Name :	HS8151/ COMMUNICATIVE ENGLISH
Semester	I
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Develop communication skills effectively in conversation by asking/sharing questions with the support of language development.
CO2	Infer the passages from the articles for improving parts of speech and language.
CO3	Write the jumbled sentences and the product description meaningfully.
CO4	Analyze different genres of texts for improving language skills such as email etiquette and personal letters
CO5	Produce well organized essays, and dialogue writing in English effectively.
CO6	Integrate their knowledge in language skills and grammar for the work place.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	0	0	0	1	2	0	0	0	3	3	0	2
CO2	0	0	0	1	2	0	0	0	3	3	0	2
CO3	0	0	0	1	2	0	0	0	3	3	0	2
CO4	0	0	0	1	2	0	0	0	3	3	0	2
CO5	0	0	0	1	2	0	0	0	3	3	0	2
CO6	0	0	0	1	2	0	0	0	3	3	0	2
CO	0	0	0	1	2	0	0	0	3	3	0	2

CO-PSO matrices

Course code	PSO1	PSO2
CO1	0	0
CO2	0	0
CO3	0	0
CO4	0	0
CO5	0	0
CO6	0	0
CO	0	0

1	Slight	2	Moderate	3	Substantial

Course Code / Name	MA8151/ ENGINEERING MATHEMATICS – I
Semester	I
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Understand limit , continuity, derivatives, Maxima, Minima of functions of one variable
CO2	Apply differentiation techniques to solve Maxima, Minima of functions of two variables.
CO3	Evaluate integrals using techniques of integration for various functions.
CO4	Evaluate multiple integrals in Cartesian and polar coordinates.
CO5	Apply various techniques in solving differential equations.
CO6	Possess knowledge in the concept of differentiation and techniques of integration in solving engineering problems.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	3	3	3	3	3	0	0	0	3	0	1	1
CO2	3	3	3	3	3	0	0	0	3	0	1	1
CO3	3	3	3	3	3	0	0	0	3	0	1	1
CO4	3	3	3	3	3	0	0	0	3	0	1	1
CO5	3	3	3	3	3	0	0	0	3	0	1	1
CO6	3	3	3	3	3	0	0	0	3	0	1	1
CO	3.0	3.0	3.0	3.0	3.0	0.0	0.0	0.0	3.0	0.0	1.0	1.0

CO-PSO matrices

Course code	PSO1	PSO2
CO1	1	1
CO2	1	1
CO3	1	1
CO4	1	1
CO5	1	1
CO6	1	1
CO	1.0	1.0

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	PH8151/ ENGINEERING PHYSICS
Semester	I
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Apply the knowledge on the elastic properties of solids in the engineering field.
CO2	Examine the characteristics of waves and optics
CO3	Use the thermal physics principles in the field of engineering.
CO4	Demonstrate the concepts of quantum physics and its applications in tunneling microscopes.
CO5	Classify the various crystalline structures and use the various crystal growth techniques in engineering applications.
CO6	Analyze the logical and mathematical concepts of physical theories and its applications which are utilized in the field of engineering.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	3	2	2	1	0	0	0	0	0	0	0	1
CO2	3	1	1	2	2	0	0	0	0	0	0	1
CO3	3	2	2	1	0	0	0	0	0	0	0	1
CO4	3	0	1	0	0	0	0	0	0	0	0	1
CO5	3	1	0	2	0	0	0	0	0	0	0	1
CO6	3	2	2	2	2	0	0	0	0	0	0	1
CO	3.0	1.3	1.3	1.3	0.7	0.0	0.0	0.0	0.0	0.0	0.0	1.0

CO-PSO matrices

Course code	PSO1	PSO2
CO1	1	0
CO2	1	0
CO3	1	0
CO4	1	0
CO5	1	0
CO6	1	0
CO	1.0	0.0

1	Slight	2	Moderate	3	Substantial

Course Code / Name	CY8151/ ENGINEERING CHEMISTRY
Semester	I
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Solve the problems of using hard water in boiler and methods of water treatment.
CO2	Examine the knowledge about the surface chemistry and catalysis.
CO3	Analyze the making of alloys with help of the basic concepts of phase rule.
CO4	Differentiate the significance of solids, liquids and gaseous fuels and calculate the calorific values of fuels and the requirements of air for complete combustion in fuels.
CO5	Express the components, functions of nuclear reactor and the constructions, applications of batteries and fuel cells.
CO6	Compile the knowledge gained on engineering materials, fuels, energy sources and water treatment techniques will facilitate better understanding of engineering process and applications.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	3	3	2	0	0	1	1	0	0	0	0	1
CO2	3	3	1	0	0	0	0	0	0	0	0	1
CO3	3	2	2	0	0	0	0	0	0	0	0	1
CO4	3	3	2	0	0	1	1	0	0	0	0	1
CO5	3	2	2	0	0	1	1	0	0	0	0	1
CO6	3	2	2	0	0	1	1	0	0	0	0	1
CO	3.0	2.5	1.8	0.0	0.0	0.7	0.7	0.0	0.0	0.0	0.0	1.0

CO-PSO matrices

Course code	PSO1	PSO2
CO1	1	0
CO2	1	0
CO3	1	0
CO4	1	0
CO5	1	0
CO6	1	0
CO	1	0.0

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	GE8151/ PROBLEM SOLVING AND PYTHON PROGRAMMING
Semester	I
Regulation	2017

COs	Course Outcome
Students should able to	
CO1	Develop algorithmic solutions to simple computational problems
CO2	Implement simple Python programs for solving problems.
CO3	Design Decomposing of Python program into functions..
CO4	Construct compound data using Python lists, tuples, and dictionaries.
CO5	Develop Python Programs using Read and write data from/to files
CO6	Demonstrate simple Python programs for solving real world problems.

CO-PO – PSO – matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	3	2	1	1	3	1	1	0	1	1	2	3
CO2	3	2	2	2	3	1	1	0	1	1	2	3
CO3	3	2	2	2	3	1	2	0	1	0	2	3
CO4	3	2	2	2	3	1	1	1	2	0	3	3
CO5	3	2	2	1	3	1	1	1	2	1	3	3
CO6	3	2	3	2	3	1	2	0	2	2	3	3
CO	3.0	2.0	2.0	1.7	3.0	1.0	1.3	0.3	1.5	0.8	2.5	3.0

CO-PSO matrices

Course code	PSO1	PSO2
CO1	1	0
CO2	1	0
CO3	1	0
CO4	1	0
CO5	1	0
CO6	1	0
CO	1.0	0.0

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	GE8152/ ENGINEERING GRAPHICS
Semester	I
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Understand the fundamentals of curves and free hand sketching of engineering graphics
CO2	Project orthographic projections of lines and plane surfaces.
CO3	Draw projections of solids in different planes
CO4	Draw true shape of sectioned solids and development of surfaces
CO5	Visualize and to project isometric and perspective sections of simple solids.
CO6	To know the applications of scales used in engineering field.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	2	2	1	0	0	0	0	1	0	1	0	1
CO2	2	2	1	0	0	0	0	1	0	1	0	1
CO3	2	2	1	0	0	0	0	1	0	1	0	1
CO4	2	2	1	0	0	0	0	1	0	1	0	1
CO5	2	2	1	0	0	0	0	1	0	1	0	1
CO6	2	2	1	0	0	0	0	1	0	1	0	1
CO	2.0	2.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	1.0	0.0	1.0

CO-PSO matrices

Course code	PSO1	PSO2
CO1	1	0
CO2	1	0
CO3	1	0
CO4	1	0
CO5	1	0
CO6	1	0
CO	1.0	0.0

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	GE 8161 - PROBLEM SOLVING AND PYTHON PROGRAMMING LABORATORY
Semester	I
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Develop solutions to simple computational problems using Python programs
CO2	Implement problems using conditionals and loops in Python.
CO3	Design Python programs by defining functions and calling them.
CO4	Create Python lists, tuples and dictionaries for representing compound data.
CO5	Construct Python programs using files
CO6	Solve Python real world applications

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	3	3	1	2	2	1	1	0	2	3	2	3
CO2	3	3	2	2	2	1	1	1	2	2	2	3
CO3	3	3	2	2	2	1	2	1	2	2	2	3
CO4	3	3	3	2	3	1	1	1	2	1	2	3
CO5	3	3	3	2	3	1	1	0	2	1	2	3
CO6	3	3	3	2	3	1	2	0	2	1	2	3
CO	3	3	2.33	2	2.5	1	1.33	0.5	2	1.7	2	3

CO-PSO matrices

Course code	PSO1	PSO2
CO1	3	2
CO2	2	3
CO3	3	3
CO4	3	3
CO5	3	3
CO6	3	3
CO	2.83	2.83

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	BS8161/ PHYSICS AND CHEMISTRY LABORATORY
Semester	I
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Examine the characteristics of light in the visible region
CO2	Calculate the elastic moduli of a solid
CO3	Demonstrate the band of a semiconductor
CO4	Estimate of ferrous ion and copper content of the given solution by potentiometer and iodometric.
CO5	Determine of strength of given acids using various meter.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	3	1	2	1	1	1	0	2	1	1	0	1
CO2	3	2	2	1	1	1	1	2	1	1	0	1
CO3	3	1	0	1	1	1	1	2	1	1	0	1
CO4	3	2	1	0	1	1	1	2	1	1	0	1
CO5	3	2	1	0	1	1	1	2	1	1	0	1
CO6	3	2	2	1	1	1	1	2	1	1	0	1
CO	3	1.67	1.33	0.67	1	1	0.83	2	1	1	0	1

CO-PSO matrices

Course code	PSO1	PSO2
CO1	1	0
CO2	1	0
CO3	1	0
CO4	1	0
CO5	1	0
CO6	1	0
CO	1.0	0.0

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	HS 8251/ TECHNICAL ENGLISH
Semester	II
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Develop the lexical terms through grammar and vocabulary for improving technical writing skill
CO2	Analyze and Interpret visual images into descriptive passage with grammar and vocabulary.
CO3	Infer the speed reading task to develop vocabulary and language.
CO4	Write emails, job application letter and issue based essays with the support of language skills.
CO5	Compile the wide range of points for preparing minutes and reports effectively.
CO6	Combine the knowledge along with the language skills and grammar for the work place.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	0	0	0	1	2	0	0	0	3	3	0	2
CO2	0	0	0	1	2	0	0	0	3	3	0	2
CO3	0	0	0	1	2	0	0	0	3	3	0	2
CO4	0	0	0	1	2	0	0	0	3	3	0	2
CO5	0	0	0	1	2	0	0	0	3	3	0	2
CO6	0	0	0	1	2	0	0	0	3	3	0	2
CO	0.0	0.0	0.0	1.0	2.0	0.0	0.0	0.0	3.0	3.0	0.0	2

CO-PSO matrices

Course code	PSO1	PSO2
CO1	0	0
CO2	0	0
CO3	0	0
CO4	0	0
CO5	0	0
CO6	0	0
CO	0.0	0.0

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	MA8251/ ENGINEERING MATHEMATICS – II
Semester	II
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Apply Eigen values and Eigen vectors concept to diagonalizable a matrix.
CO2	Evaluate the line, surface and volume integrals using Gauss, Green's and Stoke's theorems.
CO3	Acquire knowledge in Analytic functions and conformal mapping.
CO4	Develop the knowledge in concept of standard techniques of complex variable theory.
CO5	Evaluation of contour integrals.
CO6	Gain knowledge in Laplace transform techniques and its applications to solve linear differential equations

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	3	3	3	0	2	0	0	0	1	1	1	1
CO2	3	3	3	0	2	0	0	0	1	1	1	1
CO3	3	3	3	0	2	0	0	0	1	1	1	1
CO4	3	3	3	0	2	0	0	0	1	1	1	1
CO5	3	3	3	0	2	0	0	0	1	1	1	1
CO6	3	3	3	0	2	0	0	0	1	1	1	1
CO	3.0	3.0	3.0	0.0	2.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0

CO-PSO matrices

Course code	PSO1	PSO2
CO1	1	1
CO2	1	1
CO3	1	1
CO4	1	1
CO5	1	1
CO6	1	1
CO	1.0	1.0

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	PH8253/ PHYSICS FOR ELECTRONICS ENGINEERING
Semester	II
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Adapt the classical and quantum concepts involved in the conduction process
CO2	Estimate the carrier concentration and hall coefficients of semiconductor.
CO3	Classify the different behaviors of magnetic materials; implement the zero Resistance features in the field of engineering like maglev0train construction.
CO4	Discuss the functioning of optical materials for optoelectronics.
CO5	Formulate the basic knowledge of quantum structures and their applications in
CO6	Create the knowledge about various sort of materials in the field of engineering

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	2	0	0	0	0	0	0	0	0	0	0	1
CO2	2	1	0	1	0	0	0	0	0	0	0	1
CO3	2	0	0	0	0	0	0	0	0	0	0	1
CO4	2	1	0	1	0	0	0	0	0	0	0	1
CO5	2	0	0	0	0	0	0	0	0	0	0	1
CO6	2	1	0	1	0	0	0	0	0	0	0	1
CO	2.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0

CO-PSO matrices

Course code	PSO1	PSO2
CO1	2	0
CO2	2	0
CO3	2	0
CO4	2	0
CO5	2	0
CO6	2	0
CO	2.0	0.0

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	BE8252/ BASIC CIVIL & MECHANICAL ENGINEERING
Semester	II
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Appreciate the Civil and Mechanical Engineering components of Projects.
CO2	Explain the usage of construction material and proper selection of construction Materials.
CO3	Measure distances and area by surveying
CO4	Identify the components used in power plant cycle.
CO5	Demonstrate working principles of petrol and diesel engine.
CO6	Elaborate the components of refrigeration and Air conditioning cycle.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	2	2	2	0	0	0	0	0	0	0	0	0
CO2	2	2	2	0	0	0	0	0	0	0	0	0
CO3	3	2	2	0	0	0	0	0	0	0	0	0
CO4	2	2	2	0	0	0	0	0	0	0	0	0
CO5	2	2	2	0	0	0	0	0	0	0	0	0
CO6	2	2	2	0	0	0	0	0	0	0	0	0
CO	2.16	2	2	0	0	0	0	0	0	0	0	0

CO-PSO matrices

Course code	PSO1	PSO2
CO1	0	0
CO2	0	0
CO3	0	0
CO4	0	0
CO5	0	0
CO6	0	0
CO	0	0

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	GE8291/ ENVIRONMENTAL SCIENCE AND ENGINEERING
Semester	II
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Enumerate the importance of public awareness on environment and nature of biodiversity.
CO2	Explain the causes, effect and control measures of different pollution and disasters.
CO3	Point out the human development that leads to environmental disasters, the values of natural resources and their conservation.
CO4	Examine the knowledge about the social issues related to environmental problems.
CO5	Evaluate the environmental effects due to population explosion.
CO6	Find and implement the scientific, technological, economical and political solutions to environmental problems.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	0	0	0	0	0	3	3	3	0	1	0	1
CO2	0	0	0	0	0	3	3	3	0	1	0	1
CO3	0	0	0	0	0	3	3	3	0	1	0	1
CO4	0	0	0	0	0	3	3	2	0	1	0	1
CO5	0	0	0	0	0	3	3	2	0	1	0	1
CO6	0	0	0	0	0	3	3	2	0	1	0	1
CO	0.0	0.0	0.0	0.0	0.0	3.0	3.0	2.5	0.0	1.0	0.0	1.0

CO-PSO matrices

Course code	PSO1	PSO2
CO1	1	0
CO2	1	0
CO3	1	0
CO4	1	0
CO5	1	0
CO6	1	0
CO	1.0	0.0

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	EE8251/ Circuit Theory
Semester	II
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Analyze the electric circuits
CO2	Apply to apply circuit theorems
CO3	Analyze the transient response in RL, RC and RLC
CO4	Compute power, line/ phase voltage and currents of the given three phase circuit
CO5	Explain the frequency response of series and parallel RLC circuits.
CO6	Explain the behavior of magnetically coupled circuits.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	2	0	1	0	0	1	1	0	0	0	0	1
CO2	2	2	0	0	0	0	0	0	0	0	0	0
CO3	2	2	1	0	0	0	0	0	0	0	0	0
CO4	2	1	0	0	0	0	0	0	0	0	0	1
CO5	2	0	2	0	0	0	0	0	0	0	0	0
CO6	2	0	1	0	0	0	0	0	0	0	0	0
CO	2.00	0.83	0.83	0.00	0.00	0.17	0.17	0.00	0.00	0.00	0.00	0.33

CO-PSO matrices

Course code	PSO1	PSO2
CO1	1	2
CO2	1	2
CO3	1	2
CO4	1	2
CO5	1	2
CO6	1	2
CO	1	2

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	GE8261 / ENGINEERING PRACTICES LABORATORY
Semester	II
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Fabricate carpentry components and pipe connections for residential and industrial buildings
CO2	Use welding equipments to join the structures and carryout the various basic machining operation in lathe and drilling machine
CO3	Fabricate various models using sheet metal works and to demonstrate the assembly of centrifugal pump , air conditioner, operation of smithy, foundry and fittings
CO4	Practice the various home electrical works and appliances
CO5	Practice electronics equipments using various components , gates and soldering
CO6	Gain hands-on experience on various basic engineering practices in civil, mechanical, electrical and electronics engineering.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	3	3	2	0	2	2	0	2	2	1	0	2
CO2	3	3	2	0	2	2	0	2	2	1	0	2
CO3	3	3	2	0	2	2	0	2	2	1	0	2
CO4	3	3	2	0	2	2	0	2	2	1	0	2
CO5	3	3	2	0	2	2	0	2	2	1	0	2
CO6	3	3	2	0	2	2	0	2	2	1	0	2
CO	3.0	3.0	2.0	0.0	2.0	2.0	0	2.0	2.0	1.0	0.0	2.0

CO-PSO matrices

Course code	PSO1	PSO2
CO1	2	2
CO2	2	2
CO3	2	2
CO4	2	2
CO5	2	2
CO6	2	2
CO	2.0	2.0

1	Slight	2	Moderate	3	Substantial

Course Code / Name	EE8261/ Electric Circuits Laboratory
Semester	II
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Apply KVL,KCL in Series and Parallel circuit
CO2	Use various theorems for solving complex networks
CO3	Design and analysis the resonance circuits and coupled circuits
CO4	Plot the transient response and steady state response
CO5	Study the three phase power and power factor measurement

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	2	1	1	0	0	0	0	0	0	0	0	0
CO2	2	1	1	0	0	0	0	0	0	0	0	0
CO3	3	2	2	1	3	0	0	0	3	3	3	0
CO4	2	0	1	0	0	0	0	0	0	0	0	0
CO5	0	0	0	0	0	0	0	3	0	0	0	2
CO	1.8	0.8	1	0.2	0.6	0	0	0.6	0.6	0.6	0.6	0.4

CO-PSO matrices

Course code	PSO1	PSO2
CO1	3	0
CO2	3	0
CO3	0	0
CO4	0	0
CO5	0	0
CO	1.2	0

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	MA8353 / TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATION
Semester	III
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Solve the partial differential equations
CO2	Apply Fourier series analysis in Engineering application
CO3	Apply Fourier series techniques to solve one dimensional wave ,one &two dimensional heat equations
CO4	Gain the knowledge in Fourier transform techniques to solve the problems.
CO5	Apply Z-transform techniques to solve the difference equations.
CO6	Formulate & solve some of the physical problems of engineering using Transforms and Partial Differential Equations

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	2	1	0	2	0	2	1	2	1
CO2	3	3	2	2	0	0	1	0	1	0	3	1
CO3	3	3	2	2	1	0	0	0	1	0	3	1
CO4	3	2	1	2	1	0	1	1	0	0	3	1
CO5	3	3	2	2	1	0	1	0	2	1	3	1
CO6	3	3	2	2	1	0	1	0	1	0	2	1
CO	3.00	2.83	1.83	2.00	0.83	0.00	1.00	0.17	1.17	0.33	2.67	1.00

CO-PSO matrices

Course code	PSO1	PSO2
CO1	3	1
CO2	3	1
CO3	3	0
CO4	3	1
CO5	3	1
CO6	3	1
CO	3	0.833

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	EE8351/ Digital Logic Circuits
Semester	III
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Interpret different number systems and choose the family of logic devices Based on the characteristics.
CO2	Solve the logic functions using different simplification technique and to Design the combinational circuits using logic gates.
CO3	Design and analyze the different flip-flops.
CO4	Design and analyze the synchronous sequential circuit.
CO5	Design and analyze the asynchronous sequential circuit and to understand The working of different types of memories and programmable logic devices.
CO6	Develop and simulate VHDL codes for logic circuits.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	1	1	0	0	0	0	0	0	0	0	0	0
CO2	3	3	2	2	0	0	0	0	0	0	0	0
CO3	1	0	0	1	0	0	0	0	0	0	0	0
CO4	2	1	1	2	0	1	2	0	0	0	0	0
CO5	2	1	1	0	0	0	0	0	0	0	0	0
CO6	1	0	0	1	3	0	0	0	1	0	2	1
CO	1.67	1.00	0.67	1.00	0.50	0.17	0.33	0.00	0.17	0.00	0.33	0.17

CO-PSO matrices

Course code	PSO1	PSO2
CO1	1	0
CO2	1	1
CO3	0	1
CO4	3	1
CO5	0	1
CO6	3	1
CO	1.33	0.83

1	Slight	2	Moderate	3	Substantial

Course Code / Name	EE8391/ Electromagnetic Theory
Semester	III
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Analyze the various coordinate systems and to analyze the application of Coulomb's and Gauss's law.
CO2	Discriminate the symmetrical and unsymmetrical nature of the problem and the ability to solve the problems based on boundary conditions in electric field.
CO3	Discriminate the symmetrical and unsymmetrical nature of the problem and the ability to solve the problems based on boundary conditions in magnetic field.
CO4	Apply the Maxwell's equation relating to the electric and magnetic fields and the applications in the machines.
CO5	Analyze the characteristics of radio waves, TV signals, radar beams and light rays.
CO6	Apply basic science, circuit theory and Electro-magnetic field theory to electrical engineering problems.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	3	3	2	2	1	1	0	0	1	0	1	0
CO2	3	3	2	2	2	0	1	0	1	0	1	1
CO3	3	3	2	2	2	0	1	0	1	0	1	1
CO4	3	2	2	2	2	0	0	0	1	0	2	0
CO5	2	3	2	2	1	1	1	0	1	0	2	0
CO6	3	3	2	2	2	1	0	0	1	0	1	0
CO	2.83	2.83	2.00	2.00	1.67	0.50	0.50	0.00	1.00	0.00	1.33	0.33

CO-PSO matrices

Course code	PSO1	PSO2
CO1	3	0
CO2	3	0
CO3	3	0
CO4	0	1
CO5	3	0
CO6	3	0
CO	2.5	0.17

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	EE8301/ ELECTRICAL MACHINES-I
Semester	III
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Understand the magnetic circuits.
CO2	Acquire knowledge on transformer.
CO3	Understand the energy Conversion and rotating Machines.
CO4	Understand the construction and working principle of DC Generator.
CO5	Understand the construction and working principle of DC Motor.
CO6	Understand the application of DC machines and Transformers.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	2	1	2	1	0	1	1	1	2
CO2	3	2	2	2	1	1	0	0	1	1	1	2
CO3	3	2	2	2	1	2	1	0	1	1	1	2
CO4	3	2	2	2	1	1	1	0	1	1	1	2
CO5	2	2	2	2	1	1	1	0	1	1	1	2
CO6	3	2	2	2	1	2	1	0	1	1	1	2
CO	2.83	2	2	2	1	1.5	0.83	0	1	1	1	2

CO-PSO matrices

Course code	PSO1	PSO2
CO1	2	2
CO2	2	2
CO3	2	2
CO4	2	2
CO5	2	2
CO6	2	2
CO	2	2

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	EC8353/ ELECTRON DEVICES AND CIRCUITS
Semester	III
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Analyze the operation, Characteristics, and applications of PN junction devices.
CO2	Distinguish the different transistor configuring and apply it in different fields.
CO3	Develop the small signal model for BJT and FET amplifiers.
CO4	Analyze the performance of multistage amplifiers, and differential amplifiers based on their operation
CO5	Analyze the operation of oscillators and feedback amplifiers
CO6	Apply the semiconductor devices under different circuits and analyze the stages of operation.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	3	2	3	2	2	0	0	0	0	0	0	1
CO2	3	2	3	2	2	0	0	0	0	0	0	1
CO3	3	2	3	2	2	0	0	0	0	0	0	1
CO4	3	2	3	2	2	0	0	0	0	0	0	1
CO5	3	2	3	2	2	0	0	0	0	0	0	1
CO6	3	2	3	2	2	0	0	0	0	0	0	1
CO	3	2	3	2	2	0	0	0	0	0	0	1

CO-PSO matrices

Course code	PSO1	PSO2
CO1	2	1
CO2	2	1
CO3	2	1
CO4	2	1
CO5	2	1
CO6	2	1
CO	2	1

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	ME8792/ POWER PLANT ENGINEERING
Semester	III
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Understand the layout, construction and working of the components inside a thermal power plant.
CO2	Know the layout, construction and working of the components inside a Diesel, Gas and Combined cycle power plants.
CO3	Analyze the layout, construction and working of the components inside nuclear power plants.
CO4	Demonstrate the layout, construction and working of the components inside Renewable energy power plants.
CO5	Understand the applications of power plants while extend their knowledge to power plant economics and environmental hazards and estimate the costs of
CO6	Analyze and solve the energy and economical issues in power plants

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	3	2	1	0	0	1	1	0	0	0	0	0
CO2	3	2	1	0	0	1	1	0	0	0	0	0
CO3	3	2	1	0	0	1	1	0	0	0	0	0
CO4	3	1	1	0	0	1	1	0	0	0	0	0
CO5	3	2	1	0	0	1	1	0	0	0	0	0
CO6	3	2	1	0	0	1	1	0	0	0	0	0
CO	3	1.83	1	0	0	1	1	0	0	0	0	0

CO-PSO matrices

Course code	PSO1	PSO2
CO1	2	1
CO2	2	1
CO3	2	1
CO4	2	1
CO5	2	1
CO6	2	1
CO	2	1

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	EC8311/ ELECTRONICS LAB
Semester	III
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Illustrate the operation of Semiconductor devices with their characteristics for various applications
CO2	Construct the amplifier and Oscillator Circuits for any frequency using BJT and determine the output
CO3	Compare the ripple factor of the diode rectifiers with and without filters
CO4	Identify the performance of Multivibrators and differential amplifier using FET
CO5	Build passive filters for particular cutoff frequencies

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	2	1	1	1	0	0	0	0	0	0	0	0
CO2	3	2	2	2	0	0	0	0	0	0	0	0
CO3	2	1	1	1	0	0	0	0	0	0	0	0
CO4	3	2	2	2	0	0	0	0	0	0	0	0
CO5	3	2	2	2	0	0	0	0	0	0	0	0
CO	2.6	1.6	1.6	1.6	0	0	0	0	0	0	0	0

CO-PSO matrices

Course code	PSO1	PSO2
CO1	2	0
CO2	2	0
CO3	2	0
CO4	2	0
CO5	2	0
CO	2	0

1	Slight	2	Moderate	3	Substantial

Course Code / Name	EE8311/ ELECTRICAL MACHINES LABORATORY-I
Semester	III
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	To analyze the DC shunt, series and compound motor by load test and speed control.
CO2	To analyze and predetermine the efficiency by performing Swinburne's test.
CO3	To interpret the open circuit and load characteristics of DC generator and Transformers.
CO4	To examine the load characteristics of DC compound generator in cumulative and differential connections
CO5	To interpret the load characteristics of single phase and three phase transformers
CO6	To analyze the single phase transformers by Separation of losses and Sumpner's test.

CO-PO matrices

Course code	PO1	PO2	PO3	PO14	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	3	3	2	2	1	2	2	0	0	1	2	0
CO2	3	3	1	1	1	1	1	0	0	1	1	0
CO3	3	3	1	1	1	1	1	0	0	1	1	0
CO4	3	3	1	1	1	1	1	0	0	1	1	0
CO5	3	3	2	2	1	1	1	0	0	1	1	0
CO6	3	3	2	2	2	2	2	0	0	1	2	0
CO	3	3	1.5	1.5	1.17	1.33	1.33	0	0	1	1.33	0

CO -PSO matrices

Course code	PSO1	PSO2
CO1	3	2
CO2	3	2
CO3	3	2
CO4	3	2
CO5	3	2
CO6	3	2
CO	3.0	2

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	MA8491/ NUMERICAL METHODS
Semester	IV
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Understand the Basic concepts and techniques of solving algebraic and transcendental equations
CO2	Appreciate the Numerical Techniques of interpolation and error approximation in various intervals in real life situations
CO3	Apply the numerical techniques of differentiation and integration for engineering problems
CO4	Understand the knowledge of various techniques and methods for solving first and second order ordinary differential equations
CO5	Solve the partial and ordinary differential equations with initial and boundary conditions by using certain techniques with engineering applications
CO6	Possess the knowledge of power of numerical techniques ideas and demonstrate the applications of these techniques to problem drawn from the industry, management and Engineering fields

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	3	3	2	0	0	0	0	0	0	1	0	1
CO2	3	3	2	0	0	0	0	0	0	1	0	1
CO3	3	3	2	0	0	0	0	0	0	1	0	1
CO4	3	3	2	0	0	0	0	0	0	1	0	1
CO5	3	3	2	0	0	0	0	0	0	1	0	1
CO6	3	3	2	0	0	0	0	0	0	1	0	1
CO	3	3	2	0	0	0	0	0	0	1	0	1

CO-PSO matrices

Course code	PSO1	PSO2
CO1	1	1
CO2	1	1
CO3	1	1
CO4	1	1
CO5	1	1
CO6	1	1
CO	1	1

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	EE8401/ Electrical Machines II
Semester	IV
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Understand the construction and working principle of Synchronous Generator
CO2	Understand MMF curves and armature windings.
CO3	Acquire knowledge on Synchronous motor.
CO4	Understand the construction and working principle of Three phase Induction Motor
CO5	Understand the construction and working principle of Special Machines
CO6	Predetermine the performance characteristics of Synchronous Machines.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	3	2	2	2	0	0	0	0	0	0	0	0
CO2	2	1	1	2	0	0	0	0	0	0	0	0
CO3	3	2	2	2	0	0	0	0	0	0	0	0
CO4	1	0	1	1	0	1	2	0	0	0	0	1
CO5	1	0	1	1	0	0	0	0	0	0	0	0
CO6	2	1	1	1	0	1	2	0	1	0	2	1
CO	2	1	1.33	1.5	0	0.33	0.67	0	0.17	0	0.33	0.33

CO-PSO matrices

Course code	PSO1	PSO2
CO1	1	1
CO2	1	1
CO3	1	1
CO4	1	3
CO5	1	2
CO6	1	1
CO	1	1.5

1	Slight	2	Moderate	3	Substantial

Course Code / Name	EE8402/ TRANSMISSION AND DISTRIBUTION
Semester	IV
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Analyze the typical configurations & parameters of various types of transmission lines.
CO2	Illustrate the types of transmission line, Calculate the regulation, efficiency and voltage control
CO3	Demonstrate about the Mechanical design of OH lines, types of towers and Insulators
CO4	Evaluate types of cables, grading of cables.
CO5	Visualize the concept of distribution systems & analyze various types of FACTS devices.
CO6	Apply the modeling of transmission lines and distribution system

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2	1	0	1	0	0	0	0	1
CO2	3	3	3	2	1	0	1	0	0	0	0	1
CO3	3	3	3	2	1	0	1	0	0	0	0	1
CO4	3	3	3	2	1	0	1	0	0	0	0	1
CO5	3	3	3	2	1	0	1	0	0	0	0	1
CO6	3	3	3	2	1	0	1	0	0	0	0	1
CO	3	3	3	2	1	0	1	0	0	0	0	1

CO-PSO matrices

Course code	PSO1	PSO2
CO1	3	2
CO2	3	2
CO3	3	2
CO4	3	2
CO5	3	2
CO6	3	2
CO	3	2

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	EE8403/ MEASUREMENTS AND INSTRUMENTATION
Semester	IV
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	To acquire knowledge on Basic Fundamental elements of instrumentation
CO2	To Understand the concepts of Fundamentals of electrical and electronic instruments
CO3	Ability to compare between various measurement techniques
CO4	To acquire knowledge on Various storage and display devices
CO5	To understand the concepts various transducers and the data acquisition systems
CO6	Ability to model and analyze electrical and electronic instruments and understand operational features of display devices and acquisition system.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	3	1	3	2	1	3	0	0	0	1	1	2
CO2	3	1	3	2	1	3	0	0	0	1	1	2
CO3	3	1	3	2	1	3	0	0	0	1	1	2
CO4	2	1	3	2	1	3	0	0	0	1	1	2
CO5	3	1	3	2	1	3	0	0	0	1	1	2
CO6	3	1	3	2	1	3	0	0	0	1	1	2
CO	3	1	3	2	1	3	0	0	0	1	1	2

CO-PSO matrices

Course code	PSO1	PSO2
CO1	2	3
CO2	2	3
CO3	2	3
CO4	2	3
CO5	2	3
CO6	2	3
CO	2	3

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code/ Name	EE8451/ Linear Integrated Circuits and Applications
Semester	IV
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Acquire knowledge on IC fabrication procedure.
CO2	Analyze characteristics of op-amp.
CO3	Apply knowledge on applications of Op-amp.
CO4	Impart knowledge of functional blocks and applications of special ICs like Timers, PLL circuits, regulator circuits.
CO5	Develop knowledge of Signal analysis using Op-amp based circuits
CO6	Evaluate and analyze, linear integrated circuits their Fabrication and applications.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	3	3	3	1	0	0	0	0	0	0	0	0
CO2	3	1	2	1	1	0	0	0	0	0	0	0
CO3	3	1	2	1	1	0	0	0	0	0	0	0
CO4	3	1	2	1	1	0	0	0	0	0	0	0
CO5	3	1	2	1	1	0	0	0	0	0	0	3
CO6	3	2	2	1	0	0	0	0	0	0	0	3
CO	3	1.5	2.17	1	0.67	0	0	0	0	0	0	1

CO-PSO matrices

Course code	PSO1	PSO2
CO1	3	1
CO2	3	1
CO3	3	1
CO4	3	1
CO5	3	1
CO6	3	1
CO	3	1

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	IC8451/ CONTROL SYSTEM
Semester	IV
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Comprehend the use of transfer function models for analyzing physical systems and introduce the control system components.
CO2	Analyze and interpret the time response analysis and design closed loop controllers.
CO3	Evaluate the frequency response of the system using conventional methods and to design compensator confirming to frequency domain specifications.
CO4	Apply the concepts of various system stability criterions
CO5	Develop state variable representation of physical and digital control system and study the effect of state feedback.
CO6	Apply knowledge of Mathematics, Science and Engineering fundamentals to find solution for complex control problem.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	3	2	1	0	0	2	1	0	0	1	0	1
CO2	3	2	1	1	0	2	1	1	0	1	0	1
CO3	3	2	1	1	0	1	1	0	0	1	0	1
CO4	3	2	1	1	0	1	1	0	0	1	0	1
CO5	3	2	0	1	0	1	1	0	0	1	0	1
CO6	3	2	1	1	0	2	1	0	0	1	0	1
CO	3	2	1	1	0	2	1	1	0	1	0	1

CO-PSO matrices

Course code	PSO1	PSO2
CO1	2	2
CO2	2	1
CO3	1	1
CO4	2	2
CO5	1	1
CO6	2	2
CO	2	2

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code/ Name	EE8411/ ELECTRICAL MACHINES LABORATORY-II
Semester	IV
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Understand and analyze EMF and MMF methods
CO2	Analyze the characteristics of V and Inverted V curves
CO3	Understand the importance of Synchronous machines
CO4	Understand the importance of Induction Machines
CO5	Acquire knowledge on separation of losses

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	3	3	2	2	1	2	2	0	0	1	2	0
CO2	3	3	1	1	1	1	1	0	0	1	1	0
CO3	3	3	1	1	1	1	1	0	0	1	1	0
CO4	3	3	1	1	1	1	1	0	0	1	1	0
CO5	3	3	2	2	1	1	1	0	0	1	1	0
CO	3	3	1.4	1.4	1	1.2	1.2	0	0	1	1.2	0

CO-PSO matrices

Course code	PSO1	PSO2
CO1	3	2
CO2	3	2
CO3	3	2
CO4	3	2
CO5	3	2
CO	3	2

1	Slight	2	Moderate	3	Substantial

Course Code/ Name	EE8461/LINEAR AND DIGITAL INTEGRATED CIRCUITS LABORATORY
Semester	IV
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Understand and implement Boolean Functions
CO2	Understand the importance of code conversion
CO3	Design and implement 4-bit shift registers
CO4	Acquire knowledge on Application of Op-Amp
CO5	Design and implement counters using specific counter IC

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	1	0	1	1	0	0	0	0	0	1	1	1
CO2	1	0	1	1	0	0	0	0	0	1	1	1
CO3	1	0	2	1	0	0	0	0	0	1	1	1
CO4	1	0	2	1	0	0	0	0	0	1	1	1
CO5	1	0	2	1	0	0	0	0	0	1	1	1
CO	1	0	1.67	1	0	0	0	0	0	1	1	1

CO-PSO matrices

Course code	PSO1	PSO2
CO1	2	2
CO2	2	2
CO3	2	2
CO4	2	2
CO5	2	2
CO	2	2

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code/ Name	EE8412/ TECHNICAL SEMINAR
Semester	IV
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Present seminar in the field of electrical and electronics engineering subjects Studied.
CO2	Solve objective type questions in the field of electrical and electronics Engineering
CO3	Communicate effectively, the subjects learned in the form of seminar presentation.
CO4	Communicate effectively, the modern trends in the field of electrical and electronics engineering.
CO5	Answer effectively during technical interviews
CO6	Express the Engineering activities with effective presentation and report.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	0	0	0	0	0	0	0	0	1	1	1	0
CO2	0	0	0	0	0	0	0	0	1	1	1	0
CO3	0	0	0	0	0	0	0	0	1	1	1	0
CO4	0	0	0	0	0	0	0	0	1	1	1	0
CO5	0	0	0	0	0	0	0	0	1	1	1	0
CO6	0	0	0	0	0	0	0	0	1	1	1	0
CO	0	0	0	0	0	0	0	0	1	1	1	0

CO-PSO matrices

Course code	PSO1	PSO2
CO1	0	0
CO2	0	0
CO3	0	0
CO4	0	0
CO5	0	0
CO6	0	0
CO	0	0

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	EE8501/ POWER SYSTEM ANLAYSIS
Semester	V
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Analyze the modeling of individual power system components like transmission lines and generators
CO2	Understand methods available for analysis of load flow problem and develop solution of the same.
CO3	Apply the concept of per unit system and symmetrical components to analysis of different kinds of faults in an interconnected power system.
CO4	Apply the concept of per unit system and unsymmetrical components to analysis of different kinds of faults in an interconnected power system.
CO5	Analyze different kinds of stability problems in multi machine power system.
CO6	Summarize the concepts studied and students are capable of analyzing power system stability, security and reliability

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	3	3	2	2	0	1	0	0	0	0	2	2
CO2	3	3	3	2	3	1	2	0	0	0	2	2
CO3	3	3	3	2	3	1	2	0	0	0	2	2
CO4	3	3	3	2	3	1	2	0	0	0	2	2
CO5	3	3	3	2	3	1	2	0	0	0	2	2
CO6	3	3	3	2	3	1	2	0	0	0	2	2
CO	3	3	3	2	3	1	2	0	0	0	2	2

CO-PSO matrices

Course code	PSO1	PSO2
CO1	2	2
CO2	2	2
CO3	2	2
CO4	2	2
CO5	2	2
CO6	2	2
CO	2	2

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	EE8551/ Microprocessors & Microcontrollers
Semester	V
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Interpret the basic Architecture of 8085 Microprocessor and working of all blocks of the processor, IO and memory interfacings with necessary timing diagrams
CO2	Categorize instructions with the help of Addressing modes of 8085 with necessary programs.
CO3	Articulate about the basic Architecture of 8051 Microcontroller with working of various blocks of the controller like Interrupts, Timer, IO ports etc. with necessary timing diagram and compare the programming concepts with 8085
CO4	Discuss the architecture of various Interfacing Devices like 8255 PPI, 8259 PIC, 8251 USART, 8279, 8253, ADC and DAC and Programming of all the Interfacing IC's.
CO5	Develop the knowledge of programming concepts of 8051 Microcontroller for various applications like keyboard display interface, servo motor etc.,
CO6	Develop knowledge to use and the impact of modern engineering tools, equipment, techniques and solutions in a global context.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	3	0	3	0	3	0	0	3	3	0	3	3
CO2	3	0	3	0	3	0	0	3	3	0	3	3
CO3	3	0	3	0	3	0	0	3	3	0	3	3
CO4	3	0	3	0	3	0	0	3	3	0	3	3
CO5	3	0	3	0	3	0	0	3	3	0	3	3
CO6	3	0	3	0	3	0	0	3	3	0	3	3
CO	3	0	3	0	3	0	0	3	3	0	3	3

CO-PSO matrices

Course code	PSO1	PSO2
CO1	3	2
CO2	3	2
CO3	3	2
CO4	3	2
CO5	3	2
CO6	3	2
CO	3	2

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	EE8552/ POWER ELECTRONICS
Semester	V
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Explain the operation of power semiconductor circuits and commutation circuits.
CO2	Impart knowledge on Operation, characteristics and performance parameters of controlled rectifiers.
CO3	Understand the Operation, switching techniques and basics topologies of DC-DC switching regulators.
CO4	Impart knowledge on different modulation techniques of pulse width modulated inverters and understand harmonic reduction methods.
CO5	Understand the Operation of AC voltage controller and various configurations
CO6	Simulate and design the power electronics circuits.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	2	0	0	0	0	0	0	0	0	0	0	2
CO2	0	3	2	0	2	0	0	0	0	0	0	3
CO3	0	3	0	2	0	0	0	0	0	0	0	0
CO4	2	2	2	2	2	0	0	2	0	2	0	0
CO5	2	2	2	0	0	0	0	0	0	0	0	2
CO6	2	2	2	0	0	0	0	0	0	0	0	0
CO	1.33	2	1.33	0.67	0.67	0	0	0.33	0	0.33	0	1.17

CO-PSO matrices

Course code	PSO1	PSO2
CO1	0	1
CO2	1	2
CO3	0	2
CO4	1	2
CO5	0	1
CO6	1	1
CO	0.5	1.5

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	EE8591/ DIGITAL SIGNAL PROCESSING
Semester	V
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Analyze the basic classification of Signals and systems & their mathematical representations and Sampling techniques
CO2	Analyze about the discrete time systems and their properties
CO3	Evaluate the various transformation techniques and problems related to
CO4	Design filters and their digital implementations
CO5	Compare the various digital signal processor with their functional units.
CO6	Apply in real time signal processing applications and also mathematical problem solving ability

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	2	1	1	1	0	2	2	2	3
CO2	3	3	1	3	2	2	2	0	2	1	1	3
CO3	3	3	2	2	2	1	2	0	1	1	2	3
CO4	3	3	2	3	2	1	1	0	2	1	2	3
CO5	3	3	2	3	2	1	2	0	2	2	1	2
CO6	3	3	2	2	2	3	1	0	2	1	2	3
CO	3	3	1.83	2.5	1.83	1.5	1.5	0	1.83	1.33	1.67	2.83

CO-PSO matrices

Course code	PSO1	PSO2
CO1	1	3
CO2	2	2
CO3	1	2
CO4	2	1
CO5	3	3
CO6	3	3
CO	2	2.33

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	CS8392/ Object Oriented Programming
Semester	V
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Develop Java programs using OOP Principles
CO2	Develop Java programs with concepts inheritance and interfaces
CO3	Build Java applications using exceptions and I/O streams
CO4	Develop Java applications with threads and generic classes
CO5	Design and build simple graphical user interfaces
CO6	Develop programs in Java to solve simple engineering problems

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	3	3	3	2	2	2	1	0	1	1	2	3
CO2	3	3	3	2	2	3	1	0	2	1	2	3
CO3	3	3	3	3	3	3	1	0	2	1	2	3
CO4	3	3	3	3	3	3	1	0	1	1	2	3
CO5	3	3	3	3	3	3	1	1	1	2	2	3
CO6	3	3	3	3	3	3	1	1	2	2	3	3
CO	3	3	3	2.67	2.67	2.83	1	0.33	1.5	1.33	2.17	3

CO-PSO matrices

Course code	PSO1	PSO2
CO1	3	2
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
CO6	3	3
CO	3	2.83

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	OMD551/ BASICS OF BIOMEDICAL INSTRUMENTATION
Semester	V
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Study about the different bio potential and its propagation
CO2	Understand the different types of electrodes and its placement for various recording
CO3	Study the design of bio amplifier for various physiological recording
CO4	Learn the different measurement techniques for non-physiological parameters.
CO5	Familiarize the different biochemical measurements.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	0	0	0	3	0	3	0	0	0	0	0	0
CO2	0	0	0	3	0	3	0	0	0	0	0	0
CO3	3	2	2	2	3	3	0	0	0	0	0	0
CO4	0	0	0	3	3	3	0	0	0	0	0	0
CO5	0	0	0	3	3	3	0	0	0	0	0	0
CO	3	2	2	2.8	1.8	3	0	0	0	0	0	0

CO-PSO matrices

Course code	PSO1	PSO2
CO1	3	1
CO2	3	1
CO3	3	1
CO4	3	1
CO5	3	1
CO	3	1

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code/ Name	EE8511/ CONTROL & INSTRUMENTATION LAB
Semester	V
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Analyze the characteristics of P, PI and PID controllers experimentally and analyze the stability of the control system using MATLAB
CO2	Compute the transfer function of a Field controlled DC motor experimentally and analyze the response of Lag, Lead and Lag-Lead Compensators
CO3	Analyze the transient response of Position Control system experimentally and analyze the Characteristics of Synchro-Transmitter- Receiver and to Use MATLAB for the Simulation of Control Systems.
CO4	Ability to analyze the basic concepts of bridge networks and to analyze the Dynamics of Sensors/Transducers
CO5	Measure the Power and Energy experimentally and analyze signal conditioning circuits and to Use MATLAB for Process Simulation

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	0	0	0	0	0	0	0	0	0
CO2	2	1	1	0	0	0	0	0	0	0	0	0
CO3	2	1	1	0	0	0	0	0	0	0	0	0
CO4	2	1	1	0	0	0	0	0	0	0	0	0
CO5	2	1	1	0	0	0	0	0	0	0	0	0
CO	2	1	1	0	0	0	0	0	0	0	0	0

CO-PSO matrices

Course code	PSO1	PSO2
CO1	3	0
CO2	3	0
CO3	3	0
CO4	3	0
CO5	3	0
CO	3	0

1	Slight	2	Moderate	3	Substantial

Course Code/ Name	HS8581/ PROFESSIONAL COMMUNICATION
Semester	V
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Hone up soft skills, hard skills and current affairs for professional development in employability skills.
CO2	Deliver an individual presentation either by oral or visual by introducing oneself effectively.
CO3	Use different GD strategies to participate and interact effectively in GD.
CO4	Orient interview etiquettes make them to attend various mock interviews by asking FAQs.
CO5	Recognize the different between teams and groups for developing time, stress and career management towards the lifelong learning
CO6	Develop career planning and creative skills to work towards lifelong learning

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	0	0	0	0	2	0	0	2	3	3	0	2
CO2	0	0	0	0	2	0	0	2	3	3	0	2
CO3	0	0	0	0	2	0	0	2	3	3	0	2
CO4	0	0	0	0	2	0	0	2	3	3	0	2
CO5	0	0	0	0	2	0	0	2	3	3	0	2
CO6	0	0	0	0	2	0	0	2	3	3	0	2
CO	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	3.0	3.0	0.0	2.0

CO-PSO matrices

Course code	PSO1	PSO2
CO1	0	0
CO2	0	0
CO3	0	0
CO4	0	0
CO5	0	0
CO6	0	0
CO	0.0	0.0

1	Slight	2	Moderate	3	Substantial

Course Code / Name	CS8353/ OBJECT ORIENTED PROGRAMMING LABORATORY
Semester	V
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Develop and implement Java programs for simple applications that make use of classes, packages and interfaces
CO2	Develop and implement Java programs with array list, exception handling and multithreading
CO3	Design applications using file processing, generic programming and event handling
CO4	Exhibit ethical principles in engineering practices
CO5	Perform task as an individual and / or team member to manage the task in time
CO6	Express the Engineering activities with effective presentation and report.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	0	0	0	0	0	0	0	0	0	0
CO2	2	1	0	0	0	0	0	0	0	0	0	0
CO3	2	1	0	0	0	0	0	0	0	0	0	0
CO4	0	0	0	0	0	0	0	3	0	0	0	0
CO5	0	0	0	0	0	0	0	0	3	0	3	0
CO6	0	0	0	0	0	0	0	0	0	3	0	0
CO	1	0.5	0	0	0	0	0	0.5	0.5	0.5	0.5	0

CO-PSO matrices

Course code	PSO1	PSO2
CO1	2	0
CO2	2	0
CO3	2	0
CO4	0	0
CO5	0	0
CO6	0	0
CO	1	0

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	EE8601/ Solid State Drives
Semester	VI
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Determine the equations governing motor load dynamics, steady state operation and load torque characteristics of a motor load system.
CO2	Analyze multi quadrant dynamics, the operation of the converter/chopper fed dc drive both quantitatively and qualitatively.
CO3	Develop the knowledge about operation and performance of induction motor drives.
CO4	Study and understand the operation and performance of synchronous motor drives.
CO5	Analyze and design the current and speed controllers for closed loop dc motor drives.
CO6	Understand the application oriented principle of operation of commonly employed power electronic converters.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2	0	1	0	0	1	1	0	2
CO2	3	3	3	1	0	2	0	0	2	2	0	2
CO3	3	3	3	1	0	1	0	0	1	1	0	2
CO4	2	2	2	1	0	1	0	0	1	1	0	1
CO5	3	3	3	2	0	2	0	0	2	2	0	2
CO6	2	2	2	2	0	2	0	0	0	1	0	3
CO	3	3	3	2	0	2	0	0	2	2	0	3

CO-PSO matrices

Course code	PSO1	PSO2
CO1	1	3
CO2	2	2
CO3	1	3
CO4	1	2
CO5	2	2
CO6	2	3
CO	2	3

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	EE8602/ Protection and Switchgear
Semester	VI
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Estimate the protection schemes and neutral grounding techniques
CO2	Analyze and observe different types of electromagnetic relays
CO3	Visualize the protection of apparatus
CO4	Implement static and numerical relays in real time applications
CO5	Classify and compare various circuit breakers
CO6	Develop application based protection schemes with the help of power system simulation tool

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	0	1	0	0	1	0	0	0	0	2
CO2	2	2	2	0	2	0	1	0	0	0	0	1
CO3	2	2	2	1	0	0	1	0	0	0	0	2
CO4	2	2	0	1	0	0	2	0	0	0	0	1
CO5	3	1	1	2	0	0	0	0	0	0	0	2
CO6	2	2	1	0	2	0	1	0	0	0	0	2
CO	2	2	2	2	2	0	1	0	0	0	0	2

CO-PSO matrices

Course code	PSO1	PSO2
CO1	1	1
CO2	1	2
CO3	1	2
CO4	1	1
CO5	1	2
CO6	1	2
CO	1	1

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code/ Name	EE8691/ EMBEDDED SYSTEM
Semester	VI
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Outline the basic build process of embedded systems, structural units in embedded processor and selection of processor and memory devices depending upon the applications
CO2	Explain the different types of I/O device ports, buses and different interfaces for data transfer in embedded networking.
CO3	Demonstrate the different techniques like state machine model, sequential program model and concurrent model in Embedded Product Development Life Cycle (EDLC) software design
CO4	Explain the basic concept of Real Time Operating Systems and scheduling of different task and compare the features of different types of Real Time Operating Systems
CO5	Summarize the concepts of Embedded systems in real time applications
CO6	Have Thorough knowledge of embedded system terminologies, concepts, issues, Various real time embedded operating system and applications.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	0	0	1	1	2	1	0	1	1	1	3
CO2	2	1	2	0	2	2	2	0	1	1	2	2
CO3	2	1	1	0	1	0	0	0	1	1	2	2
CO4	2	1	1	1	2	0	0	0	1	1	2	3
CO5	2	1	2	2	2	0	1	0	1	1	1	2
CO6	2	1	2	2	2	2	1	0	1	1	2	3
CO	2	1	1.6	1.5	1.66	2	1.25	0	1	1	1.66	2.5

CO-PSO matrices

Course code	PSO1	PSO2
CO1	2	2
CO2	2	2
CO3	2	2
CO4	2	2
CO5	2	2
CO6	2	2
CO	2	2

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	EE8002/ DESIGN OF ELECTRICAL APPARATUS
Semester	VI
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Analyze the Magnetic circuit & to make him aware of existing electrical engineering materials
CO2	Understand the design of the core winding and other adjoining accessories of a transformer.
CO3	Obtain Education on the design of DC machines and their other internal
CO4	Understand, design & analyze different types of induction motors.
CO5	Visualize & design the synchronous machines & turbo alternators with their corresponding rotor.
CO6	Design application oriented Electrical machines with help of factors under consideration

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	2	3	1	0	0	0	0	0	0
CO2	3	3	2	2	2	2	0	0	0	0	0	0
CO3	3	3	2	2	2	0	0	0	0	0	0	0
CO4	3	3	2	2	2	0	1	0	0	0	0	0
CO5	3	3	2	2	3	1	0	0	1	1	1	0
CO6	3	3	2	2	3	2	0	0	0	0	1	1
CO	3	3	2	2	3	2	1	0	1	1	1	1

CO-PSO matrices

Course code	PSO1	PSO2
CO1	0	2
CO2	2	3
CO3	2	0
CO4	2	2
CO5	1	2
CO6	2	3
CO	2	3

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	EE8005/ SPECIAL ELECTRICAL MACHINES
Semester	VI
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Acquire the knowledge on construction and operation of stepper motor.
CO2	Construct switched reluctance motors and explain its principle of operation.
CO3	Acquire the knowledge on construction and operation of permanent magnet brushless D.C. motors.
CO4	Acquire the knowledge on construction and operation of permanent magnet synchronous motors.
CO5	Select a special Machine for a particular application.
CO6	Analyze and design controllers for special Electrical Machines.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	1	0	0	0	0	0	0	0	0
CO2	3	1	2	1	1	0	0	0	0	0	0	0
CO3	3	1	2	1	1	0	0	0	0	0	0	0
CO4	3	1	2	1	1	0	0	0	0	0	0	0
CO5	3	1	2	1	1	0	0	0	0	0	0	3
CO6	3	2	2	1	0	0	0	0	0	0	0	3
CO	3	1.5	2.16	1	0.6	0	0	0	0	0	0	1

CO-PSO matrices

Course code	PSO1	PSO2
CO1	3	1
CO2	3	1
CO3	3	1
CO4	3	1
CO5	3	1
CO6	3	1
CO	3	1

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code/ Name	EE8661/ POWER ELECTRONICS AND DRIVES LABORATORY
Semester	VI
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Demonstration of firing circuits
CO2	Analyze static and dynamic characteristics of switching devices
CO3	Experiment with converters.
CO4	Experiment with switch mode power supplies.
CO5	Experiment with switching regulators.
CO6	Analyze the converter circuits using simulation software

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	0	0	0	0	0	0	0	0	0	0	2
CO2	0	3	2	0	2	0	0	0	0	0	0	3
CO3	0	3	0	2	0	0	0	0	0	0	0	0
CO4	2	2	2	2	2	0	0	2	0	2	0	0
CO5	2	2	2	0	0	0	0	0	0	0	0	2
CO6	2	2	2	0	0	0	0	0	0	0	0	0
CO	2	2	2	2	2	0	0	0	0	0	0	2

CO-PSO matrices

Course code	PSO1	PSO2
CO1	0	1
CO2	1	2
CO3	0	1
CO4	1	1
CO5	0	1
CO6	1	1
CO	1	1

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	EE8681/ MICROPROCESSOR AND MICROCONTROLLER LAB
Semester	VI
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Develop ALP Programs for fixed Arithmetic and programming with control instructions:using 8085 Microprocessors
CO2	Propose interfacing different I/O's with processor and generate waveforms usingMicroprocessors.
CO3	Justify programs in 8051 microcontroller based system with interfacing
CO4	Compare difference between simulator and emulator

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	2	0	0	0	0	2	2	1	2
CO2	2	2	2	2	0	2	0	0	2	2	1	2
CO3	2	2	2	2	0	0	0	0	2	2	1	2
CO4	2	2	2	2	3	0	0	0	2	2	1	2
CO	2.0	2.0	2.0	2.0	3.0	2.0	0.0	0.0	2.0	2.0	1.0	2.0

CO-PSO matrices

Course code	PSO1	PSO2
CO1	2	1
CO2	2	1
CO3	3	1
CO4	3	1
CO	2.5	1.0

1	Slight	2	Moderate	3	Substantial

Course Code / Name	EE8611/ MINI PROJECT
Semester	VI
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Understand project work completion to take up any challenging practical problems and find suitable solutions by formulating proper methodology and technology in various areas of Electrical Engineering.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2	2	2	2	2	3	3	2	2
CO	3	3	3	2	2	2	2	2	3	3	2	2

CO-PSO matrices

Course code	PSO1	PSO2
CO1	3	3
CO	3	3

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	EE8701/ High Voltage Engineering
Semester	VII
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Apply the knowledge of over voltages and its protective methods in power system.
CO2	Understand the behavior of travelling wave on different load condition using Bewleys lattice diagram.
CO3	Use the concepts and methods of electrical breakdown in different medium.
CO4	Design various AC and DC high voltage generating techniques for testing the power apparatus.
CO5	Relate the various AC and DC high voltage and current measuring techniques in power system.
CO6	Apply the knowledge of testing the various power apparatus to provide safety and protection for the individual.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	0	1	0	0	1	1	0	0	0	0	1
CO2	2	2	0	0	0	0	0	0	0	0	0	0
CO3	2	0	0	0	0	0	0	0	0	0	0	0
CO4	2	0	1	0	0	0	0	0	0	0	0	0
CO5	2	0	1	0	0	0	0	0	0	0	0	0
CO6	2	0	1	0	0	1	1	1	1	0	0	1
CO	2	2	1	0	0	1	1	1	1	0	0	1

CO-PSO matrices

Course code	PSO1	PSO2
CO1	1	1
CO2	1	0
CO3	1	0
CO4	1	2
CO5	1	2
CO6	1	1
CO	1	2

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	EE8702/ POWER SYSTEM OPERATION AND CONTROL
Semester	VII
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Analyze the modeling of individual power system components like transmission lines and generators
CO2	Understand methods available for analysis of load flow problem and develop solution of the same.
CO3	Apply the concept of per unit system and symmetrical components to analysis of different kinds of faults in an interconnected power system.
CO4	Apply the concept of per unit system and unsymmetrical components to analysis of different kinds of faults in an interconnected power system.
CO5	Analyze different kinds of stability problems in multi machine power system.
CO6	Summarize the concepts studied and students are capable of analyzing power system stability, security and reliability

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	3	3	2	2	0	1	0	0	0	0	2	2
CO2	3	3	3	2	3	1	2	0	0	0	2	2
CO3	3	3	3	2	3	1	2	0	0	0	2	2
CO4	3	3	3	2	3	1	2	0	0	0	2	2
CO5	3	3	3	2	3	1	2	0	0	0	2	2
CO6	3	3	3	2	3	1	2	0	0	0	2	2
CO	3	3	3	2	3	1	2	0	0	0	2	2

CO-PSO matrices

Course code	PSO1	PSO2
CO1	2	2
CO2	2	2
CO3	2	2
CO4	2	2
CO5	2	2
CO6	2	2
CO	2	2

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	EE8703/ Renewable Energy Systems
Semester	VII
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Describe and apply the power generation concepts by using various renewable energy resources
CO2	Summarize concepts studied relating different types of wind power plants.
CO3	Gain knowledge about solar thermal and solar PV power generation.
CO4	Gain knowledge on working and application of biomass plants and geothermal plants.
CO5	Describe the functioning of fuel cells.
CO6	Summarize the concepts renewable sources-based hybrid power systems.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	1	1	0	0	0	0	3	0	0	0	0	0
CO2	0	0	2	2	0	2	2	0	0	0	0	0
CO3	0	0	3	0	0	0	0	0	0	0	0	0
CO4	1	0	0	2	0	0	0	0	0	2	0	0
CO5	0	0	0	0	0	2	2	0	0	0	0	1
CO6	1	1	3	2	0	2	3	0	0	2	0	1
CO	0.5	0.33	1.33	1	0	1	1.67	0	0	0.67	0	0.33

CO-PSO matrices

Course code	PSO1	PSO2
CO1	1	2
CO2	2	2
CO3	2	2
CO4	1	2
CO5	1	0
CO6	2	2
CO	1.5	1.67

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	OCS752/ Introduction to C Programming
Semester	VII
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Develop algorithmic solutions to simple computational problems
CO2	Construct simple applications using C programs
CO3	Implement programs for solving problems using statements
CO4	Design applications using arrays and strings
CO5	Demonstrate C functions and Pointers
CO6	Apply C Programming Language in real time application

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	2	2	2	0	2	0	0	0	0	0	0	1
CO2	3	3	2	0	2	0	0	0	0	0	0	1
CO3	3	3	2	0	2	0	0	0	0	0	0	1
CO4	2	2	2	0	2	2	0	0	0	0	0	1
CO5	2	2	2	0	0	0	0	0	0	0	0	1
CO6	0	2	2	0	0	0	0	0	0	0	0	0
CO	2.4	2.33	2	0	2	2	0	0	0	0	0	1.25

CO-PSO matrices

Course code	PSO1	PSO2
CO1	0	0
CO2	1	0
CO3	1	0
CO4	1	0
CO5	1	0
CO6	0	0
CO	1	0

1	Slight	2	Moderate	3	Substantial

Course Code/ Name	GE8074/ Human rights
Semester	VII
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Summarize the origin of Human rights and its Classification
CO2	Understand the Evolution of Human rights
CO3	List out the Theories and perspectives of UN Laws and agencies to Monitor it
CO4	Summarize the Constitutional Provisions / Guarantees of Human Rights in India
CO5	List out the various Role of Human rights commission in implementation of human rights for disadvantage people
CO6	Acquire the basic knowledge of human rights.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	0	0	0	0	0	2	0	0	0	0	0	0
CO2	0	0	0	0	0	2	0	0	0	0	0	0
CO3	0	0	0	0	0	2	0	0	0	0	0	0
CO4	0	0	0	0	0	2	0	0	0	0	0	0
CO5	0	0	0	0	0	2	0	0	0	0	0	0
CO6	0	0	0	0	0	2	0	0	0	0	0	0
CO	0	0	0	0	0	2	0	0	0	0	0	0

CO-PSO matrices

Course code	PSO1	PSO2
CO1	0	0
CO2	0	0
CO3	0	0
CO4	0	0
CO5	0	0
CO6	0	0
CO	0	0

1	Slight	2	Moderate	3	Substantial

Course Code / Name	GE8077/ TOTAL QUALITY MANAGEMENT
Semester	VII
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Identify the quality gurus and their contributions, who have made a tremendous impact on the management and control of quality.
CO2	Learn about influence of leadership, strategic planning and realize the importance of employee involvement.
CO3	Generate innovative idea to apply statistical thinking to quality improvement and adopt in benchmarking process.
CO4	Understand the significance of Taguchi's quality principles and development of Total Protective Maintenance.
CO5	Realize the importance of implementing ISO standards in manufacturing and service sectors.
CO6	Understand the various levels of quality measures and standards.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	0	2	0	0	2	3	3	3	3	3	0	0
CO2	0	2	0	0	2	3	3	3	3	3	0	0
CO3	0	2	0	0	2	3	3	3	3	3	0	0
CO4	0	2	0	0	2	3	3	3	3	3	0	0
CO5	0	2	0	0	2	3	3	3	3	3	0	0
CO6	0	2	0	0	2	3	3	3	3	3	0	0
CO	0	2	0	0	2	3	3	3	3	3	0	0

CO-PSO matrices

Course code	PSO1	PSO2
CO1	2	2
CO2	2	2
CO3	2	2
CO4	2	2
CO5	2	2
CO6	2	2
CO	2	2

1	Slight	2	Moderate	3	Substantial

Course Code / Name	EE8711/ POWER SYSTEM SIMULATION LAB
Semester	VII
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Compute and Model of Short, Medium and Long Transmission Line Parameters
CO2	Analyze The Various Parameters Of Power System By Perform Various Load Flow Techniques
CO3	Determine The Fault Current By Fault Method For Both Balanced And Unbalanced Systems
CO4	Analyze The Transient Stability Of A System Using Runga-Kutta Method
CO5	Plot The Electromagnetic Transients In The Power System Using MATLAB
CO6	Construct A Simulink Model of AGC of Single Area & Two Area Systems

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	3	2	1	1	0	0	0	0	0	0	0	0
CO2	3	2	1	1	0	0	0	0	0	0	0	0
CO3	3	3	2	2	0	0	0	0	0	0	0	0
CO4	3	2	1	1	0	0	0	0	0	0	0	0
CO5	3	3	2	2	0	0	0	0	0	0	0	0
CO	3	2	1	1	0	0	0	0	0	0	0	0

CO-PSO matrices

Course code	PSO1	PSO2
CO1	1	1
CO2	1	1
CO3	1	1
CO4	1	1
CO5	1	1
CO6	1	1
CO	1	1

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	EE8712/ RENEWABLE ENERGY SYSTEMS LAB
Semester	VII
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Understand and analyze Renewable energy systems.
CO2	Train the students in Renewable Energy Sources and technologies.
CO3	Provide adequate inputs on a variety of issues in harnessing Renewable Energy.
CO4	Simulate the various Renewable energy sources.
CO5	Recognize current and possible future role of Renewable energy sources.
CO6	Understand basics of Intelligent Controllers.

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	3	3	2	2	2	2	2	0	1	1	1	3
CO2	3	3	2	2	2	2	2	0	1	1	1	3
CO3	3	3	2	2	2	2	2	0	1	1	1	3
CO4	3	3	2	2	2	2	2	0	1	1	1	3
CO5	3	3	2	2	2	2	2	0	1	1	1	3
CO6	3	3	2	2	2	2	2	0	1	1	1	3
CO	3.0	2.0	2.0	2.0	2.0	2.0	2.0	0	1.0	1.0	1.0	3.0

CO-PSO matrices

Course code	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
CO6	3	3
CO	3	3

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	MG8591/ PRINCIPLES OF MANAGEMENT
Semester	VIII
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Gain exposure and understand the basic concepts of management and the contributions and functions, types of business organization.
CO2	Understand various types of planning, setting objectives and able to select planning tool and techniques to make decision in the management processes
CO3	Explore the difference between formal and informal organization, knowing the various types of organization structure and its process and anlayse the human resource management process
CO4	List the various types of leadership and evaluate the motivation theories and techniques to explore the importance of barriers, breakdown and electronic media in communication
CO5	Understand and able to discuss the different process of controlling and apply the managerial principles to improve the productivity
CO6	Can outline the global environment, international management and global theory of management

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	0	0	0	0	0	2	0	0	2	0	2	0
CO2	0	0	0	0	0	2	0	0	2	0	2	0
CO3	0	0	0	0	0	2	0	0	2	0	2	0
CO4	0	0	0	0	0	2	0	0	2	0	2	0
CO5	0	0	0	0	0	2	0	0	2	0	2	0
CO6	0	0	0	0	0	2	0	0	2	0	2	0
CO	0	0	0	0	0	2	0	0	2	0	2	0

CO-PSO matrices

Course code	PSO1	PSO2
CO1	1	0
CO2	1	0
CO3	1	0
CO4	1	0
CO5	1	0
CO6	1	0
CO	1	0

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code / Name	EE8018/ Microcontroller Based System Design
Semester	VIII
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Understand And Apply Computing Platform And Software For Engineering Problems
CO2	Understand The Concepts Of Architecture Of PIC Microcontroller
CO3	Acquire Knowledge On Interrupts And Timers
CO4	Understand The Importance Of Peripheral Devices For Data Communication
CO5	Understand The Basics Of Sensor Interfacing
CO6	Acquire Knowledge In Architecture Of ARM Processors

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	2	2	1	0	0	0	0	1	1	0	0	2
CO2	2	2	2	0	0	0	0	1	1	0	0	1
CO3	2	2	2	0	0	0	0	1	1	0	0	2
CO4	2	2	1	0	0	0	0	1	1	0	0	1
CO5	3	1	2	0	0	0	0	1	1	0	0	2
CO6	2	2	1	0	0	0	0	1	1	0	0	2
CO	2	2	2	0	0	0	0	1	1	0	0	2

CO-PSO matrices

Course code	PSO1	PSO2
CO1	0	1
CO2	1	2
CO3	0	1
CO4	1	1
CO5	1	1
CO6	1	1
CO	1	1

1	Slight	2	Moderate	3	Substantial

SRM TRP Engineering College

Department of Electrical and Electronics Engineering

Course Code/ Name	EE8811/ PROJECT WORK
Semester	VIII
Regulation	2017

COs	Course Outcome
Students will be able to	
CO1	Explain the engineering concepts
CO2	Solve problems to new situations with knowledge, facts, techniques and rules in a different way
CO3	Discover new computational platform in electrical & electronics fields
CO4	Determine the performance of complex power network
CO5	Formulate real world problem with global outlook
CO6	Improve the managerial skills to meet the industry

CO-PO matrices

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	2	0	0	0	0	0	0	0	0	0	0	2
CO2	0	3	2	0	2	0	0	0	0	0	0	3
CO3	0	3	0	2	0	0	0	0	0	0	0	0
CO4	2	2	2	2	2	0	0	2	0	2	0	0
CO5	2	2	2	0	0	0	0	0	0	0	0	2
CO6	2	2	2	0	0	0	0	0	0	0	0	-
CO	2	2	2	2	2	0	0	0	0	0	0	2

CO-PSO matrices

Course code	PSO1	PSO2
CO1	0	1
CO2	1	2
CO3	0	2
CO4	1	2
CO5	0	1
CO6	1	1
CO	1	2

1	Slight	2	Moderate	3	Substantial