



SIR PADAMPAT SINGHANIA UNIVERSITY

UDAIPUR

School of Engineering

**Department of Electrical Engineering**

**Vision**

The Department aims to prepare a globally competent and responsible electrical engineers, researchers, innovators and professionals to serve the future needs and challenges of the society.

**Mission**

**Quality Education:** To prepare innovative and competent electrical engineers through cutting-edge technology and educational experience.

**Technology Updation:** To strengthen academic infrastructure leading to quality professionals through latest trends in the field of Electrical Engineering and its allies areas.

**Employability:** To improve the employability of students through Industry-Institution collaboration and shape them industry ready.

**Research & Development:** To enhance the knowledge of the faculties and students through regular research and development activities.

**M. Tech. Degree Programme**

in

**Electrical Engineering**

**(Specialization in Energy & Power System)**

# Course Structure

## (2021-2023)

### PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

**PEO1 – Accomplishment:** Graduates will lead successful professional life by applying their domain specific knowledge demonstrating leadership skills with ethical attitudes in broad societal context while working in a multi/inter disciplinary setting.

**PEO2 – Competence:** Graduates will excel in providing ethical solutions as an individual or a member or a leader of a team by investigating, analysing, formulating and solving complex engineering problems for the sustainable development of society.

**PEO3 – Expertise:** Graduates will exhibit professionalism while communicating with local, national and foreign peers bound with regulations and leading life- long learning.

### PROGRAM OUTCOMES (POs):

**PO1: Core Knowledge:** Graduates will demonstrate an ability to identify, formulate and solve complex engineering problems in the area of specialization and evaluate them to select optimal feasible solution considering safety, environment and other realistic constraints.

**PO2: Modern and Advanced Tools:** Graduates will demonstrate skills to use modern engineering tools, software and equipment to analyze and solve complex engineering problems using multidisciplinary approach.

**PO3: Research Aptitude:** Graduates will demonstrate skill of good researcher to work on a problem, starting from scratch, to research into literatures, methodologies, techniques, tools, and conduct experiments and interpret data to develop methodologies, techniques, modern tools and products for the betterment of society.

**PO4: Report Writing:** Graduates will be able to present their work unequivocally before scientific community through reports and presentations to give and take clear instructions.

**PO5: Ethics and Sustainable Development:** Graduates will exhibit the traits of professional integrity and ethics and demonstrate the responsibility to implement the research outcome for sustainable development of the society.

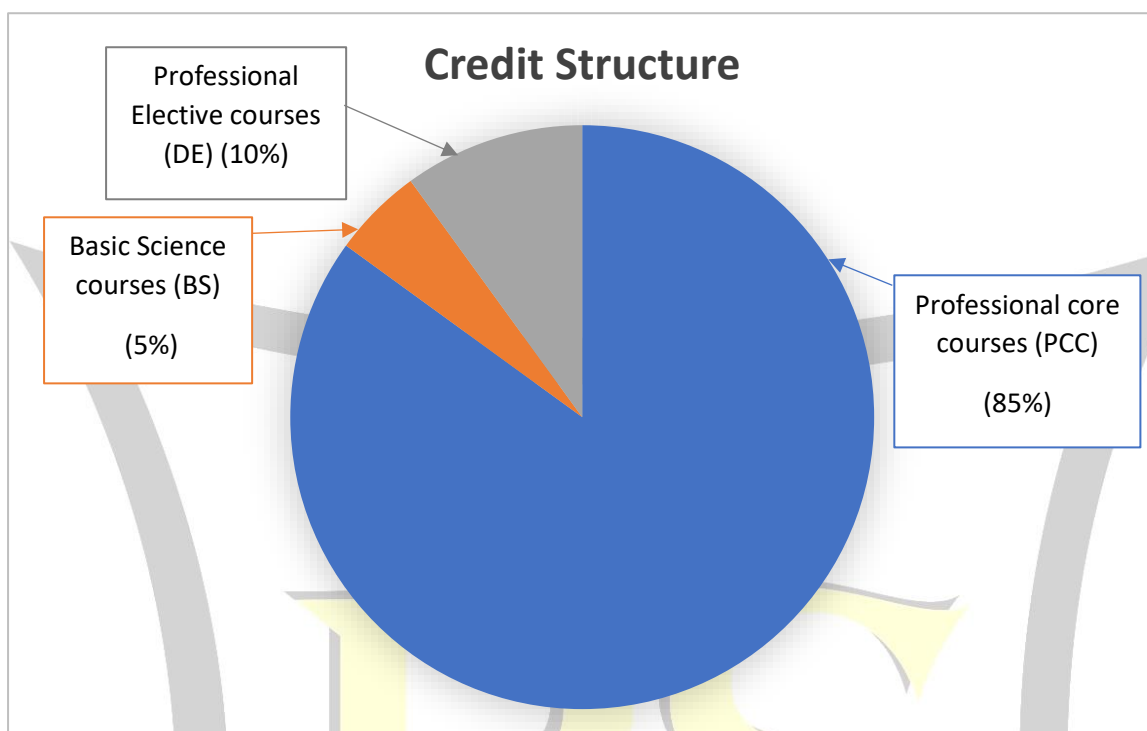
**Program Specific Outcomes (PSOs):**

**PSO1: Professional Excellence (Mastery):** Graduates will demonstrate research skills to critically analyse complex energy & power system problem for synthesizing new and existing information for their solutions

**PSO2: Research problem solving skills:** Graduates will be able to take up real life and/or research related problems in the field of energy & power system and to create optimal solutions of these problems through comprehensive analysis and designing

**Credit Structure**

Sr. No.	Category	Credits (%)
1	Professional core courses (PCC)	51 (85%)
2	Basic Science courses (BS)	3 (5%)
3	Professional Elective courses relevant to chosen specialization/branch (DE)	6 (10)
Total Credits		60



### Distribution of Total Credits & Contact Hours in all Semesters

S. No.	Semester Number	Credits/Semester	Contact hours/week
1	I	16	17
2	II	17	18
3	III	15	10
4	IV	12	-
	<b>Total</b>	60	--

## Course Structure: M. Tech. EE (2021-2023)

### Semester - I

S. No.	Course Code	Category	Course Title	L	T	P	S	Credit (s)	Hrs/Week
1	EE-2501	PCC	Power Transmission Systems	3	1	0	0	4	4
2	EE-2502	PCC	Non-Conventional Electrical Energy Systems	3	0	0	0	3	3
3	MA-3001	BSC	Advanced Engineering Mathematics	3	0	0	0	3	3
4	EE-2503	PCC	Power System Simulation Lab	0	0	1	1	2	3
5	EE-2504	PCC	Artificial Intelligence application to Power Systems	3	0	0	1	4	4
<b>Total</b>								<b>16</b>	<b>17</b>

### Semester - II

S. No.	Course Code	Category	Course Title	L	T	P	S	Credit (s)	Hrs/Week
1	EE-2506	PCC	Power System Control & Stability	3	0	0	1	4	4
2	EE-2507	PCC	Solar Energy Technology	3	0	0	1	4	4
3	EE-3501	PCC	Computer Methods in Power System Analysis	3	0	0	1	4	4
4	EE-3202	PCC	Power & Energy System Lab	0	0	1	1	2	3
5	EE-2508	PCC	High Voltage Technology	3	0	0	0	3	3
<b>Total</b>								<b>17</b>	<b>18</b>

### Semester - III

S. No.	Course Code	Category	Course Title	L	T	P	S	Credit(s)	Contact Hours
1	EE-3504	<b>PCC</b>	Power System Instrumentation	3	0	0	1	4	4
2	EE-XXXX	<b>DE</b>	Departmental Elective – I	3	0	0	0	3	3
3	EE-XXXX	<b>DE</b>	Departmental Elective – II	3	0	0	0	3	3
4	EE-4500	<b>PRJ</b>	Dissertation Stage – I**	0	0	0	5	5	-
Total Credits								15	
Total Contact hours/week									10

(\*\*Indicates workload of learner not faculty)

### Semester - IV

S. No.	Course Code	Category	Course Title	L	T	P	S	Credit(s)	Contact Hours
1	EE-4600	<b>PRJ</b>	Dissertation – II**	0	0	0	8	8	-
2	EE-3400	<b>PRJ</b>	Dissertation Viva Voce**	0	0	0	3	3	-
3	EE-3401	<b>PRJ</b>	Dissertation Seminar**	0	0	0	1	1	-
Total Credits								12	-
Total Contact hours/week									-

(\*\*Indicates workload of learner not faculty)

### List of Department Level Optional Course(s) - I

S. No.	Course Code	Course Title	L	T	P	S	Credit
1	EE-3551	Power Quality & Reliability	3	0	0	0	3
2	EE-3552	Energy Management Systems & SCADA	3	0	0	0	3

### List of Department Level Optional Course(s) - II

S. No.	Course Code	Course Title	L	T	P	S	Credit
1	EE-3553	Neural Networks	3	0	0	0	3
2	EE-3554	Knowledge Based Systems in Power Engineering	3	0	0	0	3
3	EE-3555	Smart Grid	3	0	0	0	3