SDM College of Engg. & Tech. Dharwad

Department of Electrical and Electronics Engineering

(Professional Competence with Positive Attitude)

U.G (Electrical and Electronics Engineering)

2015-2019 Scheme

III Semester (E&E)

Course Code	Course Title	Teaching		Examination				
		L-T-P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
				Max. Marks	*Max. Marks	Duration in Hrs.	Max. Marks	Duration In Hrs.
15UMAC300	Engineering Mathematics-III	4 - 0 - 0	4	50	100	3	-	-
15UEEC300	Network Analysis	3 - 2 - 0	4	50	100	3	-	-
15UEEC301	Analog Electronics	4 - 0 - 0	4	50	100	3	-	-
15UEEC302	Electrical & Electronic Measurements	3 - 0 - 0	3	50	100	3	-	-
15UEEC303	Digital Electronics	4 - 0 - 0	4	50	100	3	-	-
15UEEC304	Electrical Power Generation & Transmission	4 - 0 - 0	4	50	100	3	-	-
15UEEL305	Digital Electronics Lab	0- 0 - 3	1.5	50	-	-	50	3
15UEEL306	Analog Electronics Lab	0- 0 - 3	1.5	50	-	-	50	3
Total		**22-2-6**	**26**	**400**	**600**		**100**	

CIE: Continuous Internal Evaluation **SEE**: Semester End Examination

L: Lecture **T**: Tutorials **P**: Practical **S**: Self-study

*SEE for theory courses is conducted for 100 marks and reduced to 50 marks.

KURAKUNDI RAGHAVENDRA RAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:26:57 +05'30'

IV Semester (E&E)

Course Code	Course Title	Teaching		Examination				
		L - T - P - S (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
				Max. Marks	*Max. Marks	Duration in Hrs.	Max. Marks	Duration In Hrs.
15UMAC400	Engineering Mathematics - IV	4 - 0 - 0	4	50	100	3	-	-
15UEEC400	Signals & Systems	4 - 0 - 0	4	50	100	3	-	-
15UEEC401	Microcontrollers	4 - 0 - 0	4	50	100	3	-	-
15UEEC402	Electrical Machines-1 (DC Machines & Transformers)	4 - 0 - 0	4	50	100	3	-	-
15UEEC403	Control Systems	3 - 2 - 0	4	50	100	3	-	-
15UEEC404	Electrical Power Distribution & Utilization	3 - 0 - 0	3	50	100	3	-	-
15UEEL405	Measurements and Control System Lab	0- 0 - 3	1.5	50	-	-	50	3
15UEEL406	Microcontrollers Lab	0 - 0 - 3	1.5	50	-	-	50	3
Total		**22 -2 - 6**	**26**	**400**	**600**		**100**	

CIE: Continuous Internal Evaluation **SEE**: Semester End Examination

L: Lecture **T**: Tutorials **P**: Practical **S**: Self-study

*SEE for theory courses is conducted for 100 marks and reduced to 50 marks

Total number of credits offered for the Second year: 52

KURAKUNDI RAGHAVENDRA RAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:27:16 +05'30'

V Semester

Course Code	Course Title	Teaching		Examination				
		L - T - P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
				Max. Marks	*Max. Marks	Duration in Hrs.	Max. Marks	Duration in Hrs.
15UEEC500	Linear ICs and Applications	2 - 2 - 0	3	50	100	3	-	-
15UEEC501	Electrical Machines - 2 (AC Machines)	4 - 0 - 0	4	50	100	3	-	-
15UEEC502	Power Electronics	4 - 0 - 0	4	50	100	3	-	-
15UEEC503	Electromagnetic Theory	3 - 0 - 0	3	50	100	3	-	-
15UEEC504	Digital Signal Processing	3 - 2 - 0	4	50	100	3	-	-
15UEEC505	Renewable Energy Sources	3 - 0 - 1	3	50	100	3	-	-
15UEEL506	Electrical Machines – 1 Lab	0- 0 - 3	1.5	50	-	-	50	3
15UEEL507	Power Electronics Lab	0- 0 - 3	1.5	50	-	-	50	3
Total		**19-4-7**	**24**	**400**	**600**		**100**	

CIE: Continuous Internal Evaluation **SEE**: Semester End Examination
L: Lecture **T**: Tutorials **P**: Practical **S**: Self-study
*SEE for theory courses is conducted for 100 marks and reduced to 50 marks.

KURAKUNDI RAGHAVENDRA RAO GOPINATH
Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:27:30 +05'30'

VI Semester

Course Code	Course Title	Teaching		Examination				
		L - T - P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
				Max. Marks	*Max. Marks	Duration in Hrs.	Max. Marks	Duration in Hrs.
15UHUC600	Management, Entrepreneurship & Protection of Intellectual Property	4 - 0 - 0	4	50	100	3	-	-
15UEEC600	Power System Analysis & Stability	3 - 0 - 0	3	50	100	3	-	-
15UEEC601	High Voltage Engineering	3 - 0 - 0	3	50	100	3	-	-
15UEEC602	Switchgear and Protection	3 - 0 - 0	3	50	100	3	-	-
15UEEC603	Digital System Design using VHDL	3 - 0 - 2	4	50	100	3	-	-
15UEEL604	Electrical Machines - 2 Lab	0- 0 - 3	2	50	-	-	50	3
15UEEL605	Mini Project	0 - 0 – 6	4	50	-	-	50	3
15UEEE6XX	Elective – 1	3 - 0 - 0	3	50	100	3	-	-
Total		**19-0-11**	**26**	**400**	**600**		**100**	

CIE: Continuous Internal Evaluation **SEE**: Semester End Examination

L: Lecture **T**: Tutorials **P**: Practical **S**: Self-study

*SEE for theory courses is conducted for 100 marks and reduced to 50 marks.

Elective (1) Courses

Course Code	Course Title
15UEEE651	Computer Organization
15UEEE652	Object Oriented Programming using C++
15UEEE653	Data structures and Algorithms

Total number of credits offered for the Third year: 50

KURAKUNDI RAGHAVENDRA RAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:27:41 +05'30'

VII Semester

Course Code	Course Title	Teaching		Examination				
		L-T-P-S (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
				Max. Marks	*Max. Marks	Duration in Hrs.	Max. Marks	Duration In Hrs.
15UEEC700	Computer Techniques in Power Systems	3 - 0 - 0	3	50	100	3	-	-
15UEEC701	VLSI Circuits and Design	3 - 0 - 0	3	50	100	3	-	-
15UEEE7XX	Elective 2	4 - 0 - 0	4	50	100	3	-	-
15UEEE7XX	Elective 3	4 - 0 - 0	4	50	100	3	-	-
15UEEE7XX	Elective 4	4 - 0 - 0	4	50	100	3	-	-
15UEEL702	Power System Laboratory (Simulation, Relay and High Voltage Engineering)	0 - 0 - 3	2	50	-	-	50	3
15UEEL703	Seminar	0- 0 - 3	2	50	-	-	-	-
15UEEL704	Project Phase-I	0 – 0 -6	4	50	-	-	50	3
Total		**18-0-12**	**26**	**400**	**500**		**100**	

CIE: Continuous Internal Evaluation **SEE**: Semester End Examination

L: Lecture **T**: Tutorials **P**: Practical **S**: Self-study

*SEE for theory courses is conducted for 100 marks and reduced to 50 marks.

Elective (2,3,4) Courses

Course Code	Course Title
15UEEE751	Energy Auditing and Demand Side Management
15UEEE752	Electrical Drawing and CAD
15UEEE753	Embedded Systems
15UEEE754	Digital Signal Processing Algorithms and Architecture

KURAKUNDI RAGHAVENDRA RAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:27:56 +05'30'

15UEEE755	Computer Communication Networks
15UEEE756	Electrical Estimation, Specification and Costing
15UEEE757	AI and its Applications to Power Systems
15UEEE758	Data Base Management
15UEEE759	PIC Microcontrollers
15UEEE760	Non-linear system analysis
15UEEE761	Power System Planning
15UEEE762	Testing and Commissioning of Electrical Equipments

KURAKUNDI RAGHAVENDRA RAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:28:09 +05'30'

VIII Semester

Course Code	Course Title	Teaching		Examination				
		L - T - P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
				Max. Marks	*Max. Marks	Duration in Hrs.	Max. Marks	Duration In Hrs.
15UEEC800	Industrial Drives and Applications	4 - 0 - 0	4	50	100	-	-	-
15UEEC801	Electrical Machine Design	3 -0-0	3	50	100	-	-	-
15UEEE8XX	Elective 5	3 -0-0	3	50	100	-	-	-
15UEEE8XX	Elective 6	3 -0-0	3	50	100	-	-	-
15UEEE8XX	Elective 7	3 -0-0	3	50	100	-	-	-
15UEEL802	Project Phase-II	0-0 -9	10	50	-	-	50	3
Total		**16 - 0-9**	**26**	**300**	**500**		**50**	

CIE: Continuous Internal Evaluation **SEE**: Semester End Examination
L: Lecture **T**: Tutorials **P**: Practical **S**: Self-study
*SEE for theory courses is conducted for 100 marks and reduced to 50 marks.

Elective (5,6,7) Courses

15UEEE851	Modern Trends in Transmission Systems
15UEEE852	Power System Operation and Control
15UEEE853	ARM Processors
15UEEE854	Electrical Power Quality
15UEEE855	Software Engineering
15UEEE856	Analog and Digital Communication
15UEEE857	Micro Electro Mechanical Systems
15UEEE858	Reliability Engineering
15UEEE859	Power Systems Dynamics and Stability
15UEEE860	Operating System
15UEEE861	Modern Power System Protection

Total number of credits offered for the Fourth year: 52

Interdisciplinary Elective open for all Engineering Branches:
15UMAE875 Applied Numerical Methods (VIII Sem)
15UPHE876 Nanotechnology (VIII Sem)

KURAKUNDI RAGHAVENDRA RAO GOPINATH
Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:28:21 +05'30'

2018-2022 Scheme

III Semester (E & E)

Course Code	Course Category	Course Title	Teaching		Examination				
			L-T-P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
					Max. Marks	*Max. Marks	Duration in Hrs.	Max. Marks	Duration in Hrs.
18UMAC300	BS	Engineering Mathematics-III	3-0-0	3	50	100	3	-	-
18UEEC300	PC	Network Analysis	4-0-0	4	50	100	3	-	-
18UEEC301	PC	Analog Electronics	3-0-0	3	50	100	3	-	-
18UEEC302	PC	Electrical and Electronics Measurements	3-0-0	3	50	100	3	--	-
18UEEC303	PC	Digital Electronics and Verilog	4-0-0	4	50	100	3	--	-
18UEEC304	PC	Electrical Power Generation, Transmission and Distribution	4-0-0	4	50	100	3	--	-
18UEEL305	PC	Digital Electronics and Verilog Lab	0-0-3	1.5	50	--	--	50	3
18UEEL306	PC	Analog Electronics Lab	0-0-3	1.5	50	--	--	50	3
		Total	**21 - 0- 6**	**24**	**400**	**600**		**100**	

BS- Basic Science, PC- Program Core

*SEE for theory courses is conducted for 100 marks and reduced to 50 marks.

KURAKUNDI RAGHAVENDRA RAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:28:31 +05'30'

IV Semester (E & E)

Course Code	Course Category	Course Title	Teaching		Examination				
			L-T-P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
					Max. Marks	*Max. Marks	Duration in Hrs.	Max. Marks	Duration In Hrs.
18UMAC400	BS	Engineering Mathematics -IV	3-0-0	3	50	100	3	-	
18UEEC400	PC	Signals and Systems	3-0-0	3	50	100	3	-	
18UEEC401	PC	Microcontrollers	4-0-0	4	50	100	3	-	
18UEEC402	PC	Electrical Machines- I (DC Machines & Transformers)	4-0-0	4	50	100	3		
18UEEC403	PC	Control Systems	4-0-0	4	50	100	3		
18UEEC404	PC	Linear ICs and Applications	3-0-0	3	50	100	3		
18UEEL405	PC	Measurement and Circuit Simulation lab	0-0-3	1.5	50	--	--	50	3
18UEEL406	PC	Microcontroller Lab	0-0-3	1.5	50	--	--	50	3
18UEEL407	PC	Introductory Project	0-0-2	1	50				
		Total	**21-0-8**	**25**	**450**	**600**		**100**	

BS- Basic Science, PC- Program Core

*SEE for theory courses is conducted for 100 marks and reduced to 50 marks.

Total number of credits offered for the Second year: 49

KURAKUNDI RAGHAVENDRA RAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:28:43 +05'30'

V Semester

Course Code	Course Category	Course Title	Teaching		Examination				
			L - T - P (Hrs/Week)	Credits	C I E	Theory (SEE)		Practical (SEE)	
					Max. Marks	*Max. Marks	Duration in Hrs.	Max. Marks	Duration In Hrs.
18UHUC500	HU	Management, Entrepreneurship and IPR	4-0-0	4	50	100	3	-	-
18UEEC500	PC	Electromagnetic Theory	3-0-0	3	50	100	3	-	-
18UEEC501	PC	Electrical Machines-II	4-0-0	4	50	100	3	-	-
18UEEC502	PC	Power Electronics	4-0-0	4	50	100	3	-	-
18UEEC503	PC	Digital Signal Processing	3-0-0	3	50	100	3	-	-
18UEEE51X	PE	Elective –I	3-0-0	3	50	100	3	-	-
18UEEL505	PC	Electrical Machines-I Lab	0-0-3	1.5	50	-	-	50	3
18UEEL506	PC	Power Electronics Lab	0-0-3	1.5	50	-	-	50	3
18UEEL507	PC	Minor Project-I	0-0-3	1	50	-	-	-	-
18UEEL508	HU	Soft Skills/Aptitude	0-0-3	1	50	-	-	-	-
		Total	**21-0-12**	**26**	**500**	**600**		**100**	

HU- Humanity, PC- Program Core and PE-Professional Elective

*SEE for theory courses is conducted for 100 marks and reduced to 50 marks.

Elective-I	
18UEEE511	Data Structures and Algorithm
18UEEE512	Object Oriented Programming Structure
18UEEE513	Internet of Things (IoT)

KURAKUNDI RAGHAVENDRA RAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:28:52 +05'30'

VI Semester

Course Code	Course Category	Course Title	Teaching		Examination				
			L - T - P (Hrs/Week)	Credits	C I E	Theory (SEE)		Practical (SEE)	
					Max. Marks	*Max. Marks	Duration in Hrs.	Max. Marks	Duration In Hrs.
18UEEC600	PC	Power System Analysis and Stability	4-0-0	4	50	100	3	-	-
18UEEC601	PC	High Voltage Engineering and Switchgear & Protection	4-0-0	4	50	100	3	-	-
8UEEE62X	PE	Elective -II	3-0-0	3	50	100	3	-	-
18UEEE63X	PE	Elective–III	3-0-0	3	50	100	3	-	-
18UEEO604	OE	Open-Elective-I	3-0-0	3	50	100	3		
18UEEL605	PC	Electrical Machines-II Lab	0-0-3	1.5	50	-	-	50	3
18UEEL606	PC	Sensors, Control systems and simulation Lab	0-0-3	1.5	50	-	-	50	3
18UEEL607	PC	Minor Project-II	0-0-6	2	50	-	-	50	3
18UEEL608	HU	Soft skills	0-0-3	1	50	-	-	-	-
		Total	**17-0-15**	**23**	**450**	**500**		**150**	

PC- Program Core, PE-Professional Elective and OE- Open Elective

*SEE for theory courses is conducted for 100 marks and reduced to 50 marks.

KURAKUNDI RAGHAVENDRA RAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:29:03 +05'30'

18UEEO604	Renewable Energy System **(Open Elective-I)**

Electives - II		**Electives - III**	
18UEEE621	Computer Organization	18UEEE631	Electrical Estimation Specification Codes and Practices
18UEEE622	Computer Communication and Networking	18UEEE632	Nonlinear Control Theory
18UEEE623	PIC Microcontrollers	18UEEE633	Energy Auditing and Demand Side Management
18UEEE624	VLSI Circuits	18UEEE634	Testing and Commissioning of Electrical Equipment
18UEEE625	Software Engineering	18UEEE635	Electrical Drawing and CAD
18UEEE626	Digital Image Processing	18UEEE636	Operating System
18UEEE627	Database Management System	18UEEE637	PLC and SCADA
18UEEE628	Digital System Design using VHDL	---	

KURAKUNDI RAGHAVENDRA RAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:29:13 +05'30'

VII Semester

Course Code	Course Category	Course Title	Teaching		Examination				
			L-T-P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
					Max. Marks	*Max. Marks	Duration in Hrs.	Max. Marks	Duration In Hrs.
18UEEC700	PC	Computer Applications to Power Systems	3-0-0	3	50	100	3	-	-
18UEEC701	PC	Electrical Machine Design	3-0-0	3	50	100	3	-	-
18UEEE74X	PE	Elective –IV	4-0-0	4	50	100	3	-	-
18UEEO703	OE	Open Elective-II	3-0-0	3	50	100	3	-	-
18UEEL704	PC	Relay, High Voltage & Power System Simulation Lab	0-0-3	2	50	-	-	50	3
18UEEL705	PC	Major Project-Phase I	0-0-6	2	50	-	-	50	3
18UEEL706	PC	Internship	0-0-6	2	50	-	-	-	-
		Total	**13-0-15**	**19**	**350**	**400**		**100**	

PC- Program Core, **PE**-Professional Elective and **OE**- Open Elective

*SEE for theory courses is conducted for 100 marks and reduced to 50 marks.

Electric Vehicles (**Open Elective-II**)	18UEEO703
Elective-IV	
AI Applications to Power System	18UEEE741
Modern Trends in Transmission System	18UEEE742

KURAKUNDI RAGHAVENDRA RAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:29:25 +05'30'

Modern Power System Protection	18UEEE743
Modern Power System Operation and Control	18UEEE744
Digital Image Processing	18UEEE745
Arm Processors	18UEEE746
Embedded Systems	18UEEE747

KURAKUNDI RAGHAVENDRA RAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:29:34 +05'30'

VIII Semester

Course Code	Course Category	Course Title	Teaching		Examination				
			L-T-P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
					Max. Marks	*Max. Marks	Duration in Hrs.	Max. Marks	Duration In Hrs.
18UEEC800	PC	Industrial Utilization of Electric Power	4-0-0	4	50	100	3	-	-
18UEEE85X	PE	Elective-V	3-0-0	3	50	100	3	-	-
18UEEO802	OE	Open Elective–III	3-0-0	3	50	100	3	-	-
18UEEL803	PC	Technical Seminar	0-0-3	1	50	-	-	-	-
18UEEL804	PC	Major Project-Phase-II	0-0-14	7	50	-	-	50	3
		Total	**10-0-17**	**18**	**250**	**300**		**50**	

PC- Program Core, PE-Professional Elective and OE- Open Elective

*SEE for theory courses is conducted for 100 marks and reduced to 50 marks.

Micro Electro Mechanical Systems **(Open Elective-III)**18UEEO802	
Elective-V	
Modern Trends in Grid Integration	18UEEE851
Power System Dynamics and Stability	18UEEE852
Power System Restructuring and Power Quality	18UEEE853
Reliability Engineering	18UEEE854
Analog and Digital Communication	18UEEE855

Total credits offered during 2nd, 3rd and 4th year = 135

KURAKUNDI RAGHAVENDRA RAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:29:45 +05'30'

2021-2025 Scheme

III Semester

Course Code	*Course Category	Course Title	Teaching		Examination				
			L-T-P (Hrs./Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
					Max. Marks	**Max. Marks	Duration in Hrs.	Max. Marks	Duration in Hrs.
21UMAC300	BS	Engineering Mathematics-III	2 - 2 - 0	3	50	100	3	-	-
21UEEC300	PC	Network Analysis	3 - 0 - 0	3	50	100	3	-	-
21UEEC301	PC	Analog Electronics	3 - 0 - 0	3	50	100	3	-	-
21UEEC302	PC	Energy conversion technology	3 - 0 - 0	3	50	100	3	-	-
21UEEC303	PC	Digital Electronics	3 - 0 - 0	3	50	100	3	-	-
21UAEE341	AE	Ability Enhancement course	2 - 0 - 0	2	50	50	2	-	-
21UHUC300	HU	Universal Human Values-I	2 - 0 - 0	2	50	50	2	-	-
21UEEL305	PC	Analog Electronics Lab	0 - 0 - 3	1.5	50	--	-	50	3
21UEEL306	PC	Digital Electronics Lab	0 - 0 - 3	1.5	50	-	-	50	3
21UHUC301	***HU	Kannada	2 - 0 - 0	1	50	50	2	-	-
21UMBA301	****BS	Mathematics	3 - 0 - 0	Audit	50	-	-	-	-
		Total	**23 - 2 - 6**	**23**	**550**	**650**		**100**	

* BS- Basic science ES- Engineering Science HU- Humanities, languages and Management AE- Ability enhancement course PC- Program core

** Semester End Examination conducted for 100 marks will be reduced to 50 marks

*** Students of all branches will be divided into 2 groups, and each group will take either CIPE or Kannada in 3rd and 4th semester respectively.

**** Bridge course on Mathematics for Lateral entry students.

Ability Enhancement Course:

Course code	Course Title
21UAEE341	Electrical & Electronics Measurements

KURAKUNDI RAGHAVENDRA RAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:29:55 +05'30'

IV Semester

Course Code	*Course Category	Course Title	Teaching		Examination				
			L-T-P (Hrs./Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
					Max. Marks	**Max. Marks	Duration in Hrs.	Max. Marks	Duration in Hrs.
21UMAC400	BS	Engineering Mathematics-IV	2 - 2 - 0	3	50	100	3	-	-
21UEEC400	PC	Signals and Systems	3 - 0 - 0	3	50	100	3	-	-
21UEEC401	PC	Microcontrollers	3 - 0 - 0	3	50	100	3	-	-
21UEEC402	PC	Electrical Machines-I	3 - 0 - 0	3	50	100	3	-	-
21UEEC403	PC	Electrical Power Transmission and Distribution	3 - 0 - 0	3	50	100	3	--	--
21UHUA400	***HU	The Constitution of India and Professional Ethics	2 - 0 - 0	Audit	50	--	--	--	--
21UHUC402	HU	Universal Human Values-II	2 - 0 - 0	2	50	50	2	--	--
21UEEL404	PC	Measurement and Circuit Simulation Lab	0 - 0 - 3	1.5	50	--	--	50	3
21UEEL405	PC	Microcontroller Lab	0 - 0 - 3	1.5	50	--	--	50	3
21UEEL406	PC	Introductory Project	0- 0 - 2	1	50	--	--	--	--
21UMBA401	****BS	Mathematics	3 - 0 - 0	Audit	50	-	-	-	-
		Total	**21 - 2 - 8**	**21**	**550**	**550**		**100**	

* BS- Basic science ES- Engineering Science HU- Humanities, languages and Management AE- Ability enhancement course PC- Program core
** Semester End Examination conducted for 100 marks will be reduced to 50 marks
*** Students of all branches will be divided into 2 groups, and each group will take either CIPE or Kannada in 3rd and 4th semester respectively.
**** Bridge course on Mathematics for Lateral entry student

KURAKUNDI RAGHAVENDRA RAO GOPINATH
Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:30:09 +05'30'

2016-2018 Scheme

Scheme of Teaching and Examination

I Semester M. Tech.

Course Code	Course Title	Teaching		Examination				
		L-T-P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
				Max. Marks	*Max. Marks	Duration in hours	Max. Marks	Duration in hours
16PMAC100	Applied Mathematics	4-0-0	4	50	100	3		
16PEPSC100	Modeling and Analysis of Electrical Machines	4-0-0	4	50	100	3		
16PEPSC101	Power System Dynamics and Control	4-0-0	4	50	100	3		
16PEPSL102	Power System Laboratory - I	0-0-3	2	50			50	3
16PEPSL103	Seminar**	0-0-3	2	50				
16PEPSEXXX	Elective course - I	4-0-0	4	50	100	3		
16PEPSEXXX	Elective course - II	4-0-0	4	50	100	3		
Total		**20-0-6**	**24**	**350**	**500**		**50**	

CIE: Continuous Internal Evaluation **SEE**: Semester End Examination

L: Lecture **T**: Tutorials **P**: Practical

*SEE for theory courses is conducted for 100 marks and reduced to 50 marks.

** Seminar is to be conducted every week and 2-3 students/week will present a topic from emerging areas in power systems preferably the content not studied in their regular courses. The seminar shall be evaluated by 3 faculty members having specialization in power system and allied areas.

Course Code	Elective Courses
16PEPSE125	Digital Protection of Power Systems
16PEPSE126	EHV AC Transmission
16PEPSE127	High Voltage Power Apparatus
16PEPSE128	Linear and Nonlinear Optimization

KURAKUNDI RAGHAVENDRA RAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:30:21 +05'30'

Scheme of Teaching and Examination
II Semester M.Tech.

Course Code	Course Title	Teaching		Examination				
		L-T-P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
				Max. Marks	*Max. Marks	Duration in hours	Max. Marks	Duration in hours
16PEPSC200	Economic Operation & Control of Power Systems	4-0-0	4	50	100	3		
16PEPSC201	Distribution System Design & Control	4-0-0	4	50	100	3		
16PEPSL202	Power System Laboratory - II	0-0-3	2	50			50	3
16PEPSL203	Seminar**	0-0-3	2	50				
16PEPSEXXX	Elective course - I	4-0-0	4	50	100			
16PEPSEXXX	Elective course - II	4-0-0	4	50	100	3		
16PEPSEXXX	Elective course - III	4-0-0	4	50	100	3		
Total		**20-0-6**	**24**	**350**	**500**		**50**	

CIE: Continuous Internal Evaluation **SEE**: Semester End Examination

L: Lecture **T**: Tutorials **P**: Practical

* SEE for theory courses is conducted for 100 marks and reduced to 50 marks.

** Seminar is to be conducted every week and 2-3 students/week will present a topic from emerging areas in power systems preferably the contents notstudied in their regular courses. The seminar shall be evaluated by 3 faculty members having specialization in power system and allied areas.

Course Code	Elective Courses
16PEPSE225	Reactive Power Management In Power System
16PEPSE226	HVDC Power Transmission
16PEPSE227	Power System SCADA
16PEPSE228	Intelligent System Applications To Power System
16PEPSE229	Power Quality Enhancement Using Custom Power Devices

KURAKUNDI RAGHAVENDRA RAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:30:35 +05'30'

Scheme of Teaching and Examination

III SemesterM. Tech.

Course Code	Course Title	Teaching		Examination				
				CIE	Theory (SEE)		Practical (SEE)	
		L-T-P (Hrs/Week)	Credits	Max. Marks	*Max. Marks	Duration in hours	Max. Marks	Duration in hours
16PEPSC300	FACTS Controllers	4-0-0	4	50	100	3		
16PEPSEXXX	Elective course-VI	4-0-0	4	50	100	3.		
16PEPSEXXX	Elective course-VII	4-0-0	4	50	100	3		
16PEPSL301	Industrial Internship/field work**	2 weeks (during vacation)	4	50				
16PEPSL302	Project Phase-I***	0-0-10	10	50		.		
Total		**12-0-10**	**26**	**250**	**300**			

CIE: Continuous Internal Evaluation **SEE**: Semester End Examination

L: Lecture **T**: Tutorials **P**: Practical

*SEE for theory courses is conducted for 100 marks and reduced to 50 marks.

** Seminar is to be conducted every week and 2-3 students/week will present a topic from emerging areas in power systems preferably the contents not studied in their regular courses. The seminar shall be evaluated by 3 faculty members having specialization in power system and allied areas.

Course Code	Elective Courses
16PEPSE311	Power System Reliability Engineering
16PEPSE312	Fundamentals of Smart Grid Technology
16PEPSE313	Planning & Management of Deregulated Power Systems
16PEPSE314	PLC Controllers and Applications

KURAKUNDI RAGHAVENDRA RAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:30:49 +05'30'

Scheme of Teaching and Examination

IV Semester M.Tech.

Course Code	Course Title	Teaching		Examination				
				CIE	Theory (SEE)		Practical (SEE)	
		L-T-P (Hrs/Week)	Credits	Max. Marks	*Max. Marks	Duration in hours	Max. Marks	Duration in hours
16PEPSL400	Project phase-II	0-0-20	26	50	--	--	100	3
Total		**0-0-20**	**26**	**50**	**--**	**--**	**100**	**--**

CIE: Continuous Internal Evaluation **SEE**: Semester End Examination

L: Lecture **T**: Tutorials **P**: Practical

*SEE for theory courses is conducted for 100 marks and reduced to 50 marks.

** Project phase-I: The students are expected to work on a project for the full semester in an industry or institution

Total Credits offered for the first year : 48

Total Credits offered for the Second year : 52

Total credits during the program :100

KURAKUNDI RAGHAVENDRA RAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:31:00 +05'30'

2018-2020 Scheme of Teaching and Examination

I-Semester M. Tech. (Power Systems Engineering)

Course Code	Course Title	Teaching		Examination				
		L-T-P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
				Max. Marks	*Max. Marks	Duration in hours	Max. Marks	Duration in hours
18PMAC100	Applied Mathematics	4-0-0	4	50	100	3		
18PEPSC100	Advanced Power System Analysis	4-0-0	4	50	100	3		
18PEPSEXXX	Elective 1	4-0-0	4	50	100	3		
18PEPSEXXX	Elective 2	4-0-0	4	50	100	3		
18PEPSEXXX	Elective 3	4-0-0	4	50	100	3		
18PEPSL101	Power System Laboratory-I	0-0-3	2	50			50	3
18PEPSL102	** Seminar	0-0-3	1	100				
	Total	**20-0-6**	**23**	**400**	**500**		**50**	

CIE: Continuous Internal Evaluation **SEE**: Semester End Examination

L: Lecture **T**: Tutorials **P**: Practical

* SEE for theory courses is conducted for 100 marks and reduced to 50 marks.

** Seminar is to be conducted every week and 2-3 students/week will present a topic from emerging areas in power systems preferably the contents not studied in their regular courses. The seminar shall be evaluated by 3 faculty members having specialization in power system and allied areas.

Course Code	Elective Courses
18PEPSE125	Power System Modeling & Dynamics

KURAKUNDI RAGHAVENDRA RAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:31:14 +05'30'

18PEPSE126	Advanced Power System Protection
18PEPSE127	EHV AC Transmission
18PEPSE128	Linear and Nonlinear Optimization
18PEPSE129	Modeling and Analysis of Electrical Machines
18PEPSE130	Power Quality Issues and Mitigation Techniques

KURAKUNDI RAGHAVENDRA RAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:31:25 +05'30'

2018-2020 Scheme of Teaching and Examination
II-Semester M. Tech. (Power Systems Engineering)

Course Code	Course Title	Teaching		Examination				
		L-T-P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
				Max. Marks	*Max. Marks	Duration in hours	Max. Marks	Duration in hours
18PEPSC200	Economic Operation & Control of Power System	4-0-0	4	50	100	3		
18PEPSC201	Distribution System Design & Control	4-0-0	4	50	100	3		
18PEPSEXXX	Elective course-IV	4-0-0	4	50	100	3		
18PEPSEXXX	Elective course-IV	4-0-0	4	50	100	3		
18PEPSEXXX	Elective course-VI	4-0-0	4	50	100	3		
18PEPSL202	Power System Laboratory-II	0-0-3	2	50			50	3
18PEPSL203	**Seminar	0-0-3	1	100				
	Total	**20-0-6**	**23**	**400**	**500**		**50**	

CIE: Continuous Internal Evaluation **SEE**: Semester End Examination

L: Lecture **T**: Tutorials **P**: Practical

* SEE for theory courses is conducted for 100 marks and reduced to 50 marks.

** Seminar is to be conducted every week and 2-3 students/week will present a topic from emerging areas in power systems preferably the contents not studied in their regular courses. The seminar shall be evaluated by 3 faculty members having specialization in power system and allied areas.

KURAKUNDI RAGHAVENDRA RAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:31:38 +05'30'

Course Code	Elective Courses
18PEPSE225	Reactive Power Management in Power System
18PEPSE226	Artificial Intelligence Techniques to Power System
18PEPSE227	Power System SCADA
18PEPSE228	HVDC Power Transmission
18PEPSE229	Fundamentals of Smart Grid Technology
18PEPSE230	Distributed Generation and Micro Grids

KURAKUNDI RAGHAVENDRARAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:31:49 +05'30'

2018-2020 Scheme of Teaching and Examination
III-Semester M. Tech. (Power Systems Engineering)

Course Code	Course Title	Teaching		Examination				
		L-T-P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
				Max. Marks	*Max. Marks	Duration in hours	Max. Marks	Duration in hours
18PEPSC300	FACTS Controllers	4-0-0	4	50	100	3		
18PEPSEXXX	Elective course-VII	4-0-0	4	50	100	3.		
18PEPSL301	Internship in industry/ R&D organization / Elective course-VIII **	** 2-4 weeks during vacation after 2nd Sem./ 3-0-0	3	50/50	- /100	-/3	50/-	3/-
18PEPSL302	Project Phase-I***	0-0-15	9	50			50	3
Total		**8/11--0-15**	**20**	**200**	**200/300**		**50**	

CIE: Continuous Internal Evaluation **SEE**: Semester End Examination

L: Lecture **T**: Tutorials **P**: Practical

* SEE for theory courses is conducted for **100 marks** and reduced to **50 marks**.

** The students are expected to undergo training in industry for a period of ***2 - 4 weeks*** during the vacation immediately after completion of II Semester examination. A faculty is to be allotted to guide the student. A committee consisting of three faculty members shall evaluate the work carried out and the knowledge the students have acquired**.** OR The students can take one elective course if they do not undergo internship.

*** Project phase-I: The students are expected to formulate the problem and carry out the intensive literature survey along with preliminary investigations supporting the project phase-II in IV semester.

KURAKUNDI RAGHAVENDRA RAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:32:01 +05'30'

Course Code	Elective Courses
18PEPSE311	Planning of Deregulated Power systems
18PEPSE312	Power systems Reliability Engineering
18PEPSE313	Programmable Logic Controllers and Applications

KURAKUNDI RAGHAVENDRA RAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:32:12 +05'30'

2018-2020 Scheme of Teaching and Examination
IV-Semester M. Tech. (Power Systems Engineering)

Course Code	Course Title	Teaching		Examination				
		L-T-P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
				Max. Marks	*Max. Marks	Duration in hours	Max. Marks	Duration in hours
18PEPSL400	Project Phase-II **	0-0-20	22	100	--	--	100	3
Total		**0-0-20**	**22**	**100**	**--**	**--**	**100**	**--**

CIE: Continuous Internal Evaluation **SEE**: Semester End Examination
L: Lecture **T**: Tutorials **P**: Practical
* SEE for theory courses is conducted for 100 marks and reduced to 50 marks.
** Project phase-I: The students are expected to work on a project for the full semester in an industry or institution

Total Credits offered for the first year: **46**
Total Credits offered for the Second year: **42**
Credits Distribution:

Particulars	**Proposed**
Program Core Course	20
Program Electives	28
Laboratory Course	04
Seminar	02
Internship/Training	03
Project	31
Total	**88**

KURAKUNDI RAGHAVENDRA RAO GOPINATH
Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:32:24 +05'30'

2020-2022 Scheme of Teaching and Examination
I-Semester M. Tech. (Power Systems Engineering)

Course Code	Course Title	Teaching		Examination				
		L-T-P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
				Max. Marks	*Max. Marks	Duration in hours	Max. Marks	Duration in hours
20PRMIC100	Research Methodology and IPR	2-0-0	2	50	50	2		
20PMEE100	Applied Mathematics	4-0-0	4	50	100	3		
20PEPSC100	Advanced Power System Analysis	4-0-0	4	50	100	3		
20PEPSC101	Power System Modeling & Dynamics	4-0-0	4	50	100	3		
20PEPSEXXX	Elective 1	4-0-0	4	50	100	3		
20PEPSL102	Power System Laboratory-I	0-0-3	2	50			50	3
20PEPSL103	** Seminar	0-0-2	1	50				
	Total	**18-0-5**	**21**	**350**	**450**		**50**	

CIE: Continuous Internal Evaluation **SEE**: Semester End Examination

L: Lecture **T**: Tutorials **P**: Practical

* SEE for theory courses is conducted for 100 marks and reduced to 50 marks.

** Seminar is to be conducted every week and 2-3 students/week will present a topic from emerging areas in power systems preferably the contents not studied in their regular courses. The seminar shall be evaluated by 3 faculty members having specialization in power system and allied areas.

Course Code	Elective – 1	Credits
20PEPSE151	Advanced Power System Protection	4
20PEPSE152	EHV AC Transmission	4
20PEPSE153	Linear and Nonlinear Optimization	4

KURAKUNDI RAGHAVENDRA RAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:32:37 +05'30'

2020-2022 Scheme of Teaching and Examination
II-Semester M. Tech. (Power Systems Engineering)

Course Code	Course Title	Teaching		Examination				
		L-T-P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
				Max. Marks	*Max. Marks	Duration in hours	Max. Marks	Duration in hours
20PEPSC200	Artificial Intelligence Techniques to Power System	4-0-0	4	50	100	3		
20PEPSC201	FACTS Controllers	4-0-0	4	50	100	3		
20PEPSEXXX	Elective 2	4-0-0	4	50	100	3		
20PEPSEXXX	Elective 3	4-0-0	4	50	100	3		
20PEPSEXXX	Elective 4	4-0-0	4	50	100	3		
20PEPSL202	Power System Laboratory-II	0-0-3	2	50			50	3
20PEPSL203	**Seminar	0-0-2	1	50				
Total		**20-0-5**	**23**	**350**	**500**		**50**	

CIE: Continuous Internal Evaluation **SEE**: Semester End Examination

L: Lecture **T**: Tutorials **P**: Practical

* SEE for theory courses is conducted for 100 marks and reduced to 50 marks.

** Seminar is to be conducted every week and 2-3 students/week will present a topic from emerging areas in power systems preferably the contents not studied in their regular courses. The seminar shall be evaluated by 3 faculty members having specialization in power system and allied areas.

KURAKUNDI RAGHAVENDRA RAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:32:50 +05'30'

Course Code	Elective (2, 3, 4)	Credits
20PEPSE231	Reactive Power Management in Power System	4
20PEPSE232	Economic Operation &Control of Power System	4
20PEPSE233	Power System SCADA	4
20PEPSE234	HVDC Power Transmission	4
20PEPSE235	Fundamentals of Smart Grid Technology	4
20PEPSE236	Distributed Generation and Micro Grids	4

KURAKUNDI RAGHAVENDRA RAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:33:02 +05'30'

2020-2022 Scheme of Teaching and Examination
III-Semester M. Tech. (Power Systems Engineering)

Course Code	Course Title	Teaching		Examination				
		L -T - P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
				Max. Marks	*Max. Marks	Duration in hours	Max. Marks	Duration in hours
20PEPSC300	Distribution System Design & Control	4-0-0	4	50	100	3	--	--
20PEPSEXXX	Elective 5	3-0-0	3	50	100	3.	--	--
20PEPSEXXX	Elective 6	3-0-0	3	50	100	3	--	--
20PEPSEXXX	Elective 7	3-0-0	3	50	100	3	--	--
OR								
20PEPSL301	Internship (In industry or R&D organization)	** Min 4 weeks during vacation after 2nd Sem.	3	50	--	--	100	3
20PEPSL302	***Project Phase 1	0-0-15	9	50	--	--	50	3
Total		**13-0-15/10-4 weeks-15**	**22**	**250**	**400/300**		**50/150**	

CIE: Continuous Internal Evaluation **SEE**: Semester End Examination

L: Lecture **T**: Tutorials **P**: Practical

*SEE for theory courses is conducted for **100 marks** and reduced to **50 marks**.

** The students are expected to undergo training in industry for a period of ***4 weeks*** during the vacation immediately after completion of II Semester examination. A faculty is to be allotted to guide the student. A committee consisting of three faculty members shall evaluate the work carried out and the knowledge the students have acquired**.** OR The students can take one elective course if they do not undergo internship.

KURAKUNDI RAGHAVENDRARAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:33:15 +05'30'

***Project phase-I: The students are expected to formulate the problem and carry out the intensive literature survey along with preliminary investigations supporting the project phase-II in IV semester.

Course Code	**Elective (5, 6, 7)**	**Credits**
20PEPSE311	Planning & Management of Deregulated Power Systems	3
20PEPSE312	Power Systems Reliability Engineering	3
20PEPSE313	Programmable Logic Controllers and Applications	3
20PEPSE314	Power Quality Issues and Mitigation Techniques	3

KURAKUNDI RAGHAVENDRA RAO GOPINATH

Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:33:26 +05'30'

2020-2022 Scheme of Teaching and Examination
IV-Semester M. Tech. (Power Systems Engineering)

Course Code	Course Title	Teaching		Examination				
		L-T-P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
				Max. Marks	*Max. Marks	Duration in hours	Max. Marks	Duration in hours
20PEPSL400	Project Phase-II	0-0-20	22	100	--	--	100	3
Total		**0-0-20**	**22**	**100**	**--**	**--**	**100**	

CIE: Continuous Internal Evaluation **SEE**: Semester End Examination
L: Lecture **T**: Tutorials **P**: Practical
*SEE for theory courses is conducted for 100 marks and reduced to 50 marks.
** Project phase-I: The students are expected to work on a project for the full semester in an industry or institution

Total Credits offered for the first year: **44**
Total Credits offered for the Second year: **44**
Credits Distribution:

S. Lukalki.
Head of the Department
of Electrical & Electronics Engineering,
S.D.M. College of Engg & Technology
Dhavalagiri, DHARWAD-580 002

KURAKUNDI RAGHAVENDRA RAO GOPINATH
Digitally signed by KURAKUNDI RAGHAVENDRARAO GOPINATH
Date: 2023.02.04 09:33:41 +05'30'