NEW COURSE STRUCTURE UNDER NEP-2020 Initiatives
(Effective from Year 2023 Batch)

FIRST YEAR (FIRST SEMESTER)

Sl. No.	Theory	Contact Hrs. L-T-P	Credit
1	Mathematics – I	3-0-0	3
2	Physics	3-0-0	3
3	C and Data Structures	3-0-0	3
4	Basic Electrical Engineering	3-0-0	2
5	Basic Manufacturing Processes	3-0-0	2
6	English for Technical Writing	2-0-0	2
Sessional			
7	Physics Lab	0-0-3	1.5
8	Programming Lab	0-0-3	1.5
9	Electrical Engineering Lab	0-0-3	1.5
10	Communicative English & Report Writing Lab	0-0-3	1.5
11	Sports/Yoga/NCC/NSS	0-0-2	1
	Total Credits	**17-0-14**	**22**

FIRST YEAR (SECOND SEMESTER)

Sl. No.	Theory	Contact Hrs. L-T-P	Credit
1	Mathematics – II	3-0-0	3
2	Chemistry	3-0-0	3
3	Engineering Mechanics	3-0-0	3
4	Basic Electronics	3-0-0	2
5	Basic Civil Engineering	3-0-0	2
6	Universal Human Values	2-0-0	2
Sessional			
7	Chemistry Lab	0-0-3	1.5
8	Workshop and Digital Manufacturing Lab	0-0-3	1.5
9	Electronics Lab	0-0-3	1.5
10	Engineering Graphics & Design Lab (With AutoCAD)	0-0-3	1.5
11	Sports/Yoga/NCC/NSS	0-0-2	1
	Total Credits	**17-0-14**	**22**

SECOND YEAR (THIRD SEMESTER)

Sl. No.	Subject (Theory)	Contact Hrs. L-T-P	Credit
1	Mathematics–III	3-0-0	3
2	Professional Core-1: Electrical Machines – I	3-0-0	3
3	Professional Core-2: Network Theory	3-0-0	3
4	Professional Core-3: Analog Electronic Circuits	3-0-0	3
5	Advanced Competency Course-1: Optimization and Soft Computing (PC-4)	3-0-0	2
6	Engineering Economics	3-0-0	2
Subject (Sessional)			
7	Electrical Machines Laboratory – I	0-0-3	1.5
8	Network Laboratory	0-0-3	1.5
9	Analog Electronic Circuits Laboratory	0-0-3	1.5
10	Optimization and Soft Computing Laboratory	0-0-3	1.5
	Total	**18-0-12**	**22**

SECOND YEAR (FOURTH SEMESTER)

Sl. No.	Subject (Theory)	Contact Hrs. L-T-P	Credit
1	Professional Core-5: Digital System Design	3-0-0	3
2	Professional Core-6: Measurement and Instrumentation	3-0-0	3
3	Professional Core-7: Electrical Machines – II	3-0-0	3
4	Professional Core-8: Signals and Systems	3-0-0	3
5	Advanced Competency Course-2: Programming in Python (PC-9)	3-0-0	2
6	Organizational Behavior	3-0-0	2
Subject (Sessional)			
7	Measurement and Instrumentation Laboratory	0-0-3	1.5
8	Digital System Design Laboratory	0-0-3	1.5
9	Electrical Machines Laboratory – II	0-0-3	1.5
10	Programming in Python Laboratory	0-0-3	1.5
11	Summer Internship and Research Experience (SIRE- I) *		
	Total	**18-0-12**	**22**

THIRD YEAR (FIFTH SEMESTER)

Sl. No	Category	Subject (Theory)	Contact Hrs. L-T-P	Credit
1	PC	Professional Core-10: Power Electronics	3-0-0	3
2	PC	Professional Core-11: Control System-I	3-0-0	3
3	PC	Professional Core-12: Artificial Intelligence and Machine Learning	3-0-0	3
4	PE	Professional Elective-I	3-0-0	3
5	HS	Professional Ethics/ Entrepreneurship Development	3-0-0	2
6	MC	Environmental Engineering/ Industrial Safety Engineering	3-0-0	2
Subject (Sessional)				
7	PC	Power Electronics Laboratory	0-0-3	1.5
8	PC	Control System-I Laboratory	0-0-3	1.5
9	PC	Machine Learning Laboratory	0-0-3	1.5
10	PSI	Seminar on SIRE-I	0-0-3	1.5
		Total	**18-0-12**	**22**

THIRD YEAR (SIXTH SEMESTER)

Sl. No	Category	Subject (Theory)	Contact Hrs. L-T-P	Credit
1	PC	Professional Core-13: Digital Signal Processing	3-0-0	3
2	PC	Professional Core-14: Microprocessor and Microcontroller	3-0-0	3
3	PE	Professional Elective -II	3-0-0	3
4	PE	Professional Elective –III	3-0-0	3
5	HS	Entrepreneurship Development/Professional Ethics	3-0-0	2
6	MC	Industrial Safety Engineering/ Environmental Engineering	3-0-0	2
Subject (Sessional)				
7	PSI	Project for Product Development-I	0-0-6	3
8	PC	Digital Signal Processing Laboratory	0-0-3	1.5
9	PC	Microprocessor and Microcontroller Laboratory	0-0-3	1.5
10	Summer Internship and Research Experience (SIRE- II)*			
		Total	**18-0-12**	**22**

FOURTH YEAR (SEVENTH SEMESTER)

SL. No.	Category	Subject (Theory)	Contact Hrs. L-T-P	Credit
1	PE	Professional Elective-IV	3-0-0	3
2	OE	Open Elective -I	3-0-0	3
3	OE	Open Elective -II	3-0-0	3

4	PC (ACC-3)	Advanced Competency Course -3 (PC-15)	3-0-0	2
Subject (Sessional)				
5	PSI	Seminar on SIRE –II	0-0-3	1
6	PSI	Project for Product Development –II/ Internship Project- I	0-0-6	3
		Total	**12-0-9**	**15**

FOURTH YEAR (EIGHTH SEMESTER)

Sl. No	Category	Subject (Theory)	Contact Hrs. L-T-P	Credit
1	OE	Open Elective –III	3-0-0	3
2	OE	Open Elective -IV	3-0-0	3
Sessional				
3	PSI	Seminar on Project	0-0-6	3
4	PSI	Project for Product Development – III/ Internship Project -II	0-0-12	6
		Total	**6-0-18**	**15**

ADVANCED COMPETENCY COURSES AND PROFESSIONAL ELECTIVES

Sl. No.	Category	Semester	Subject name
1	Advanced Competency Course – I	3rd	Optimization and Soft Computing
2			EDA Tools for Engineers
3			Introduction to Statistical Methods Using R
4	Advanced Competency Course – II	4th	Programming in Python
5	Professional Elective – I	5th	Basic Communication Engineering
6			Electromagnetic Field Theory
7			Sensors and Transducers
8			Power Quality
9			Power System – I
10	Professional Elective – II	6th	Digital Communication Techniques
11			Control System – II
12			Smart Power Grid
13			Power System – II
14	Professional Elective – III	6th	Digital Image Processing
15			Industrial Automation and Control
16			Low Power VLSI Design
17			Electric Vehicle Technology
18			High Power Multilevel Converters – Analysis, Design and Operational Issues
19			Operation and Planning of Power Distribution Systems
20	Professional Elective – IV	7th	Mobile Communication
21			Optical Fiber Communication
22			Radar and Satellite Communication

23			Forecasting Methods in Engineering/ Time-series Analysis and Forecasting
24			Power System Reliability/ Reliability Engineering
25	Advanced Competency Course – III	7th	Advanced Tools for Product Development and Analysis
26			Natural Language Processing
27			Cyber Security and Cyber Laws

OPEN ELECTIVES

Sl. No.	Category	Semester	Subject name
1	Open Elective – I	7th	Digital System Design
2			Signals and Systems
3			Communication Systems
4	Open Elective – II	7th	Elements of Electrical Machines
5			Control System Engineering
6			Sustainable Electric Power Generation Systems
7	Open Elective – III	8th	Microprocessor and Microcontroller
8			Digital Signal Processing
9			Digital Image Processing
10	Open Elective – IV	8th	Elements of Power Electronics
11			Industrial Automation and Control
12			Smart Power Grid

Abbreviations:
PC: Professional Core
PE: Professional Elective
OE: Open Elective
ACC: Advanced Competency Course
HS: Humanities and Social Science Courses including Management
MC: Mandatory Courses
PSI: Seminar/ Summer Internship/ Training/ Project for Product Development