

Gautam Buddha University

Electrical Engineering Department, SOE

4-Year B.Tech. (Electrical and Electronics Engineering) Programme for Batch 2023-27 onwards

SEMESTER-I						
S. No.	Course Code	Name of Course	L-T-P	Credits	UGC	AICTE
Theory Courses						
1	CY101/ PH102	Engineering Chemistry/ Engineering Physics	3-1-0	4	FC	BSC
2	MA 101	Engineering Mathematics –I	3-1-0	4	FC	BSC
3	EC 101/ EE 102	Basic Electronics Engineering/ Basic Electrical Engineering	3-1-0	4	FC	ESC
4	CS 101/ ME101	Fundamentals of Computer Programming/ Engineering Mechanics	3-1-0	4	SEC	ESC
5	BS 101	Human Values & Buddhist Ethics	2-0-0	2	AECC	HSMC
6	EN 101	English Proficiency	2-0-0	2	AECC	HSMC
Practical Courses						
7	CE103*/ ME102	Engineering Graphics/ Workshop Practice	1-0-2	2	SEC	ESC
8	CY 103/ PH 104	Engineering Chemistry Lab/ Engineering Physics Lab	0-0-2	1	FC	BSC
9	CS 181/ EN 151	Computer Programming Lab/ Language Lab	0-0-2	1	SEC	ESC
10	EC 181/ EE 104	Basic Electronics Engineering Lab/ Basic Electrical Engineering Lab	0-0-2	1	FC	ESC
11	GP	General Proficiency		NC		
Total Contact Hours/Credits			29	25		

SEMESTER-II						
S. No.	Course Code	Name of Course	L-T-P	Credits	UGC	AICTE
Theory Courses						
1	CY 101/ PH 102	Engineering Chemistry/ Engineering Physics	3-1-0	4	FC	BSC
2	MA 102	Engineering Mathematics –II	3-1-0	4	FC	BSC
3	EC 101/ EE 102	Basic Electronics Engineering/ Basic Electrical Engineering	3-1-0	4	FC	ESC
4	CS 101/ ME101	Fundamentals of Computer Programming/ Engineering Mechanics	3-1-0	4	SEC	ESC
5	ES 101	Environmental Studies	4-0-0	4	AECC	HSMC
Practical Courses						
6	CE103*/ ME 102	Engineering Graphics/ Workshop Practice	1-0-2	2	SEC	ESC
7	CY 103/ PH 104	Engineering Chemistry Lab/ Engineering Physics Lab	0-0-2	1	FC	BSC
8	CS 181/ EN 151	Computer Programming Lab/ Language Lab	0-0-2	1	SEC	ESC
9	EC 181/ EE 104	Basic Electronics Engineering Lab/ Basic Electrical Engineering Lab	0-0-2	1	FC	ESC

10	GP	General Proficiency		NC		
		Total Contact Hours/Credits	29	25		

SEMESTER -III					
S. No.	Subject Code	Course	L-T-P	Credit	Course Type
Theory Courses					
1	MA-201	Engineering Mathematics-III	3-1-0	4	CC/BSC
2	EE-201	Network Theory	3-1-0	4	CC/PCC
3	EC-227	Analog Electronics Circuits	3-0-0	3	CC/PCC
4	EE-205	Electrical Measurement & Measuring Instruments (EMMI)	3-1-0	4	CC/PCC
5	EE-207	Electrical Machine-I	3-1-0	4	CC/PCC
6	EEC-203	Data Structures and Algorithms	3-0-0	3	SEC/ESC
Practical Courses					
7	EE-211	Network Lab	0-0-2	1	CC/PCC
8	EE-213	EMMI Lab	0-0-2	1	CC/PCC
9	EE-215	Electrical Machine Lab-I	0-0-2	1	CC/PCC
10	GP	General Proficiency	-	NC	
		Total Contact Hours/Credits	29	25	

SEMESTER -IV					
S. No.	Subject Code	Course	L-T-P	Credit	Course Type
Theory Courses					
1	EEE-202	Communication Systems	3-0-0	3	CC/PCC
2	EE-204	Electronic Devices & Circuits	3-1-0	4	CC/PCC
3	EE-206	Signals & Systems	3-1-0	4	CC/PCC
4	EE-208	Elements of Power System	3-1-0	4	CC/PCC
5	EE-210	Electrical Machine-II	3-1-0	4	CC/PCC
6	-	Open Elective-I	3-0-0	3	AECC/HSMS
Practical Courses					
7	EE-214	Electronic Devices & Circuits Lab	0-0-2	1	CC/PCC
8	EE-216	Electrical Machine Lab- II	0-0-2	1	CC/PCC
9	EE-218	Simulation Lab-I (with PYTHON)	0-0-2	1	SEC/LC
10	-	General Proficiency		NC	
		Total Contact Hours/Credit	28	25	

SEMESTER -V					
S. No.	Subject Code	Course	L-T-P	Credit	Course Type
Theory Courses					
1	EE-301	Power System Analysis	3-1-0	4	CC/PCC
2	EE-303	Electromagnetic Field Theory	3-0-0	3	CC/PCC
3	EE-305	Control System-I	3-1-0	4	CC/PCC
4	EE-307	Power Electronics	3-1-0	4	CC/PCC
5	EE-309	Digital Electronics	3-1-0	4	CC/PCC
6	EC 328	IC Fabrication Technology	3-0-0	3	E-GE3
Practical Courses					
6	EE-311	Power System Lab	0-0-2	1	CC/PCC

7	EE-313	Control System Lab	0-0-2	1	CC/PCC
8	EE-315	Power Electronics&Drives Lab	0-0-2	1	CC/PCC
9	EE-317	Digital Electronic Lab	0-0-2	1	CC/PCC
10	EE-319	Industrial Training-I	0-0-1	1	SEC/PW
11	GP	General Proficiency	-	NC	
		Total Contact Hours/Credits	31	28	

*Students will do industrial training of 04 weeks after 4th semester and evaluation will be done in 5th semester.

SEMESTER -VI					
S. No.	Subject Code	Course	L-T-P	Credit	Course Type
Theory Courses					
1	EE-302	Electric Drives	3-1-0	4	CC/PCC
2	EC-325	Antenna and Wave Propagation	3-1-0	4	CC/PCC
3	EE-306	Control System-II	3-1-0	4	CC/PCC
4	EE-308	Digital Signal Processing	3-1-0	4	CC/PCC
5	EE-310	Microprocessor & Microcontrollers	3-1-0	4	CC/PCC
6	-	Open Elective- II	3-0-0	3	AECC/HSMS
Practical Courses					
7	EEE-302	PCB Lab	0-0-2	1	CC/PCC
8	EEC-314	Antenna and Wave Propagation Lab	0-0-2	1	CC/PCC
9	EE-316	Microprocessor & Microcontrollers Lab	0-0-2	1	CC/PCC
10	EE-318	Simulation Lab-II (MATLAB)	0-0-2	1	SEC/LC
11	GP	General Proficiency	-	NC	GP
		Total Contact Hours/Credit	31	27	

SEMESTER-VII					
S. No.	Subject Code	Courses	L-T-P	Credit	Course Type
Theory Courses					
1.	EE401	Engineering Optimization	3-0-0	3	E-GE3
2.	EEE/EC 345	Digital Image Processing	3-0-0	3	E-GE3
3.	--	Dept. Elective-I	3-0-0	3	EDSE1
4.	--	Dept. Elective-II	3-0-0	3	EDSE2
5.	--	Open Elective-III	3-0-0	3	EDSE3
Practical Courses					
5	EE483	DSP Lab	0-0-2	1	CC/PCC
6	EE485	Industrial Training -II	0-0-2	1	SEC/PW
7	EE485	Seminar	0-0-3	2	SEC/PW
8	EE497	Project-I	0-0-8	4	DP/PW
9	GP	General Proficiency	-	NC	
		Total		23	
		Total Contact Hours		30	

*Students will do industrial training of 4-6 weeks after 6th semester and evaluation will be done in 7th semester.

SEMESTER -VIII					
S. No.	Subject Code	Course	L-T-P	Credit	Course Type
		<u>THEORY</u>			
1	--	Open Elective-III	3-0-0	3	OE/HSME
2	--	Dept. Elective-III	3-0-0	3	CC/PCC
3	--	Dept. Elective-IV	3-0-0	3	CC/PCC
4	--	Open Elective-IV	3-0-0	3	CC/PCC
		<u>PRACTICAL</u>			
5	EE-498	Project-II	0-0-16	8	CC/PCC
6	GP	General Proficiency	-	NC	
		Total Contact Hours /Credit	28	20	

- Any Dept. Elective will be run only when there will be 1/3 students of the total class strength.

Grand Total Credits of 4 Year B. Tech. Degree = 198

**4 Year B. Tech. (Electrical and Electronics Engineering) Programme
(For 2023-2027 batches onwards)**

List of Electives

Dept. Elective-I

1. EE-405-Power System Operation and Control
2. EE-407 Digital Control
3. EE-409 HVDC & FACTS
4. EE-411 Power Converters & Applications
5. EE-413 Industrial Instrumentation & Automation
6. EE-415 Industrial Process Control
7. EE-417 Introduction to AI & Neural Networks
8. EE-419 Computer Aided Machine Design
9. EE-203 Engineering Materials & Nano Materials
10. EE-304 Switchgear and Protection

Dept. Elective-II

1. EE-421 Soft Computing Techniques
2. EE-423 Renewable Energy Sources
3. EE-425 Advance Control System
4. EE-427 Advance Instrumentation
5. EE-429 Digital Image Processing
6. EE-431 Power Quality
7. EE-433 Fundamentals of Robotics Engg
8. EE-435 Biomechanics & Robotics
9. EE-437 Computer Applications to Electrical Engg
10. EE-439 PLC & SCADA Systems

Dept. Elective-III & IV

1. EE-404 Non-Linear System
2. EE-406 Wavelet Application to Engineering
3. EE-410 Smart Transducers & Sensors
4. EE-412 Special Electrical Machine
5. EE-414 Conservation of Energy & Audit
6. EE-416 Power Plant Engineering
7. EE-418 Biomedical Instrumentation
8. EE-424 Robotics Analysis and Synthesis
9. EE-426 Intelligent Control
10. EE-428 Optimal Control
11. EE-430 Machine Learning
12. EE-432 Utilization of Electrical Engineering and Traction
13. EE-434 Embedded System

Open Elective-I, II, III& IV

1. Any subject offered from other department.
2. Engineering Management
3. Structural Behaviour
4. Engineering Economics
5. Mobile App Development
6. Deep Learning
7. Business Analytics
8. Modern Propulsion System & Robotics
9. Autonomous Mobility
10. Embedded Systems
11. Fundamentals of Artificial Intelligence
12. Network Security
13. Industrial Management
14. Smart Grid
15. Organization Behavior