

Gautam Buddha University

Electrical Engineering Department, SOE

4-Year B.Tech. (Electrical and Computer 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.	EE-205	EMMI	3-1-0	4	CC/PCC
4.	EE-201	Object Oriented Programming	2-0-2	3	CC/PCC
5.	EE-204	Electronic Devices & Circuits	3-1-0	4	CC/PCC
6.	EE-203	Data Structures and Algorithms	2-0-2	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-214	Electronic Devices & Circuits Lab	0-0-2	1	CC/PCC
10.	GP	General Proficiency	-	NC	-
Total Contact Hours/Credits			30	25	

SEMESTER-IV					
S. No.	Subject Code	Course	L-T-P	Credit	Course Type
Theory Courses					
1.	EE-206	Signals & Systems	3-1-0	4	CC/PCC
2.	EE-309	Digital Electronics	3-1-0	4	CC/PCC
3.	EE-207	Electrical Machines	3-1-0	4	CC/PCC
4.	CS-102	Computer Organ. & Architecture	3-1-0	4	CC/PCC
5.	CS-204	Database Management System	3-0-0	3	CC/PCC
6.	EE-208	Elements of Power System	3-1-0	4	CC/PCC
Practical Courses					
7.	EE-317	Digital Electronics Lab	0-0-2	1	CC/PCC
8.	EE-215	Electrical Machine Lab	0-0-2	1	CC/PCC
9.	EE-218	Simulation Lab-I(With Python)	0-0-2	1	SEC/LC
10.	CS-284	JAVA Programming Lab	0-0-2	1	CC/PCC
11.		General Proficiency		NC	
Total Contact Hours/Credit			30	24	

SEMSTER - V					
S. No.	Subject Code	Course	L-T-P	Credit	Course Type
Theory Courses					
1.	EE-307	Power Electronics & Drives	3-1-0	4	CC/PCC
2.	EE-305	Control System	3-1-0	4	CC/PCC
3.	CS-301	Computer Networks	3-0-0	3	CC/PCC
4.	CS-401	Internet of Things (IoT)	2-0-2	3	CC/PCC
5.	CS-405	Principles of Machine Learning	3-0-0	3	CC/PCC
6.	EE-309	Innovation & Entrepreneurship	2-0-0	2	AECC/HSMS
7.	EE-319	Industrial Training-I			SEC/PW
Practical Courses					
8.	EE-315	Power Electronics & Drives Lab	0-0-2	1	CC/PCC
9.	EE-311	Power System Lab	0-0-2	1	CC/PCC
10.	EE-313	Control System Lab	0-0-2	1	CC/PCC
11.	EE-317	Mini Project-I (Creativity & Design)	0-0-4	2	AECC/HSMS
12.	GP	General Proficiency		NC	
Total Contact Hours/Credits			28	24	

*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-401	Engineering Optimization	3-1-0	4	CC/PCC
2.	EE-308	Digital Signal Processing	3-1-0	4	CC/PCC
3.	CS-308	Cyber Security	3-0-0	3	CC/PCC
4.	CS-413	Cloud Computing	3-0-0	3	CC/PCC
5.	CS-201	Internet/Web Technology	3-0-0	3	CC/PCC
6.	EEC-302	Career Advancement & Skill Development	2-0-0	2	AECC/HSMS
Practical Courses					
7.	EEC-304	Web Technologies Lab	0-0-2	1	CC/PCC
8.	EE-483	Digital Signal Processing Lab	0-0-2	1	CC/PCC
9.	EE-318	Simulation Lab-II(MATLAB)	0-0-2	1	CC/PCC
10.	EEC-318	Mini Project-II	0-0-4	2	DP/PW
11.	GP	General Proficiency	-	NC	GP
Total Contact Hours/Credit			30	24	

SEMESTER-VII					
S. No.	Subject Code	Courses	L-T-P	Credit	Course Type
Theory Courses					
1.	CS-203	Concepts of Operating System	3-0-0	3	E-GE3
2.	EE-310	Microprocessor & Microcontroller	3-1-0	4	CC/PCC
3.	-	Dept. Elective-I	3-0-0	3	EDSE1
4.	-	Dept. Elective-II	3-0-0	3	EDSE2
5.	-	Open Elective-I	3-0-0	3	EDSE3
6.	-	Open Elective-II	3-0-0	3	EDSE3
Practical Courses					
7	EE316	Microprocessor & Microcontroller Lab	0-0-2	1	CC/PCC
8	EE485	Industrial Training -II	0-0-2	1	SEC/PW
9	EE497	Project-I	0-0-6	3	DP/PW
10	EE487	Seminar	0-0-2	1	SEC/PW
11	GP	General Proficiency	-	NC	
Total Contact Hours/Credit			31	25	

*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.	--	Dept. Elective-III	3-1-0	4	OE/HSME
2.	--	Dept. Elective-IV	3-0-0	3	CC/PCC
3.	--	Open Elective-III	3-0-0	3	CC/PCC
4.	--	Open Elective-IV	3-0-0	3	CC/PCC
Practical Courses					
5.	EE-498	Project-II	0-0-16	8	CC/PCC
6.	GP	General Proficiency	-	NC	
Total Contact Hours /Credit			29	21	

- 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 = 193

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

List of Electives

Dept. Elective-I

1. Digital Control
2. HVDC & FACTS
3. Power Converters & Applications
4. Industrial Instrumentation & Automation
5. Industrial Process Control
6. Introduction to AI & Neural Networks
7. Computer Aided Machine Design
8. JAVA Programming
9. Cryptography
10. Computer Graphics
11. Object Oriented System Design
12. Human Computer Interface
13. Electrical Machine II
14. Engineering Material Science/ Nano Materials
15. Power System Analysis
16. EMFT
17. Advance Power Electronics
18. Electric Drives

Dept. Elective-II

1. Soft Computing Techniques
2. Renewable Energy Sources
3. Advance Control System
4. Advance Instrumentation
5. Digital Image Processing
6. Power Quality
7. Fundamentals of Robotics Engg
8. Biomechanics & Robotics
9. PLC & SCADA Systems
19. LINUX Programming
20. Electric Vehicles
21. Computer Graphics
22. Switchgear & Protection
23. Modeling & Simulation in Engg

Dept. Elective-III & IV

1. Non-Linear System
2. Wavelet Application to Engineering
3. Smart Transducers & Sensors
4. Special Electrical Machines
5. Conservation of Energy & Audit
6. Power Plant Engineering
7. Biomedical Instrumentation

8. Robotics Analysis and Synthesis
9. Intelligent Control
10. Optimal Control
11. Machine Learning
12. Utilization of Electrical Engineering and Traction
13. Embedded Systems
24. Big Data Analysis
25. Design & Analysis of Algorithms
26. Deep Learning and Cognitive Computing
27. Software Testing
28. Distributed Systems
29. Quantum Computing
30. Blockchain Architecture Design
31. Mobile Computing
32. Power System Operation and Control

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