

PARUL UNIVERSITY

R/Notification-1400/2024-25

Office of the Registrar
December 17, 2024

NOTIFICATION

Sub: Course Structure and Syllabus of Semesters 7th and 8th for Curriculum 2021-2022 for B.Tech all Branches

Ref: (i) Proceedings of the Eighteenth Meeting of the Governing Body held on December 2, 2024

(ii) Orders of the Provost

PREAMBLE:

Dean, Faculty of Engineering & Technology proposed Course Structure and Syllabus of Semesters 7th and 8th for Curriculum 2021-2022 for B.Tech all Branches during the Eighteenth Meeting of the Governing Body held on December 2, 2024 which was approved by the Governing Body. Hence, the Order.

ORDER:

Course structures of all B.Tech specializations offered under the Faculty of Engineering and Technology for semester-7 and 8 (Curriculum Year-2021-22) are enclosed in the Annexure.

Dean, FE & T is informed to arrange to upload syllabus of all B.Tech specializations offered under the Faculty of Engineering and Technology for semester-7 and 8 (Curriculum Year-2021-22) on MIS.

By Order


Registrar

To,

1. Dean, Faculty of Engineering & Technology and Principal, PIET
2. Principal, PIT

Copy to,

- 1) The Controller of Examinations
- 2) Director (IQAC)
- 3) PUMIS Coordinator

Submitted to,

- 1) The President
- 2) The Provost

ANNEXURE

Faculty of Engineering and Technology - PIET		
B. Tech in Aeronautical Engineering		
Semester - 1		
S. No.	Name of the Subject	Credits
1	Fundamental of Programming	4
2	Basic Electrical Engineering	5
3	Elements of Mechanical Engineering	4
4	Mathematics-I	5
5	Engineering Physics	4
6	Communication Skills - 1	2
Total		24
Semester - 2		
S. No.	Name of the Subject	Credits
7	Workshop	2
8	Mechanics of Solids	4
9	Environmental Science	2
10	Basic Electronics	4
11	Engineering Graphics	4
12	Mathematics-II	5
13	Communication Skills - 2	2
Total		23
Semester - 3		
S. No.	Name of the Subject	Credits
14	Introduction to Aeronautics	3
15	Introduction to Aeronautics Lab	1
16	Basic Engineering Thermodynamics	4
17	Fundamentals of Fluid Mechanics	3
18	Fundamentals of Fluid Mechanics Lab	1
19	Analysis of Mechanism and Machine Elements	3
20	Product Realization	1
21	Complex Variables and PDE	4
22	Professional Communication Skills	2
Total		22
Semester - 4		
S. No.	Name of the Subject	Credits
23	Aerodynamics - I	3
24	Aerodynamics Lab	1
25	Aircraft Structure - I	4
26	Propulsion - I	4
27	Aircraft Materials and Processes	2

28	Aircraft Material and Processes Lab	1
29	Surface and Solid Modelling Lab	1
30	Probability, Statistics and Numerical Methods	4
31	Professional Grooming and Personality Development	1
Total		21
Semester - 5		
S. No.	Name of the Subject	Credits
32	Aircraft Performance	4
33	Aerodynamics-II	3
34	Vibration and Structural Dynamics	3
35	Aircraft Structure-II	3
36	Aircraft Structure Lab	1
37	Propulsion-II	3
38	Propulsion Lab	1
39	Professionalism and Corporate Ethics	1
40	Open Elective 01 (Compulsory Subjects :1)	2
Total		21
Semester - 5 (Open Elective - 01)		
1	Cyber Security	2
2	Fundamentals of Communication Engineering	2
3	Internet of Things	2
Semester - 6		
S. No.	Name of the Subject	Credits
41	Aircraft Stability and Control	4
42	Computational Fluid Dynamics	3
43	Computational Fluid Dynamics Lab	2
44	Minor Project	1
45	Employability Skills	1
46	Open Elective 02 (Compulsory Subjects:1)	2
47	PEC 01 (Compulsory Subjects:1)	3
48	PEC 02 (Compulsory Subjects:1)	3
Total		19
Semester - 6 (PEC 01)		
1	Finite Element Method	3
2	Heat and Mass Transfer	3
Semester - 6 (PEC 02)		
1	Control Theory and Systems	3
2	Aircraft Systems and Instruments	3
Semester - 6 (Open Elective - 02)		
1	Life Science	2
2	Fundamentals of Management	2
3	Corporate Social Responsibility	2

4	Innovation and Entrepreneurship	2
Semester - 7		
S. No.	Name of the Subject	Credits
49	Aircraft Design	3
50	Aircraft Design Lab	1
51	Avionics	3
52	Major Project - I	6
53	Summer Internship - II	2
54	Open Elective 03 (Compulsory Subjects:1)	3
55	PEC 03 (Compulsory Subjects:1)	3
56	PEC 04 (Compulsory Subjects:1)	3
Total		24
Semester - 7 (Open Elective - 03)		
1	Airport Operations and Management	3
2	Industrial Engineering	3
3	Geometric Dimensioning and Tolerance	3
Semester - 7 (PEC 03)		
1	Hypersonic Aerodynamics	3
2	Industrial Aerodynamics	3
Semester - 7 (PEC 04)		
1	Introduction to Helicopters	3
2	Lighter than Air Systems	3
Semester - 8		
S. No.	Name of the Subject	Credits
57	Unmanned Aerial Systems	3
58	Major Project - II	6
59	Open Elective 04 (Compulsory Subjects:1)	3
60	PEC 05 (Compulsory Subject:1)	3
Total		15
Semester - 8 (Open Elective 04)		
1	Aircraft Maintenance	3
2	Airworthiness and Regulations	3
3	Tribology	3
Semester - 8 (PEC 05)		
1	Rocket and Missile Technology	3
2	Introduction to Space Technology	3
Grand Total		169

Faculty of Engineering and Technology - PIET		
B. Tech in Civil Engineering		
Semester - 1		
S. No.	Name of the Subject	Credits
1	Elements of Civil Engineering	4
2	Fundamental of Programming	4
3	Elements of Mechanical Engineering	4
4	Mathematics-I	5
5	Engineering Physics	4
6	Communication Skills - 1	2
Total		23
Semester - 2		
S. No.	Name of the Subjects	Credits
7	Workshop	2
8	Mechanics of Solids	4
9	Environmental Science	2
10	Basic Electrical Engineering	5
11	Engineering Graphics	4
12	Mathematics-II	5
13	Communication Skills - 2	2
Total		24
Semester 3		
S. No.	Name of the Subjects	Credits
14	Computer Aided Civil Engineering Drawing	2
15	Computer Aided Civil Engineering Drawing lab	2
16	Material Testing and Evaluation	3
17	Material Testing and Evaluation lab	2
18	Introduction to Solid Mechanics	3
19	Introduction to Solid Mechanics lab	1
20	Introduction to Fluid Mechanics	3
21	Introduction to Fluid Mechanics lab	1
22	Basic Electronics and Sensor Technologies for Civil Engineering Applications	2
23	Basic Electronics and Sensor Technologies for Civil Engineering Applications lab	1
24	Product Realization	1
25	Professional Communication Skills	2
Total		23
Semester 4		
S. No.	Name of the Subjects	Credits
26	Mechanics of Materials	3

27	Mechanics of Materials lab	1
28	Surveying	3
29	Surveying lab	2
30	Hydraulic Engineering	3
31	Hydraulic Engineering lab	1
32	Construction Technology	3
33	Advance Engineering Mathematics	4
34	Professional Grooming and Personality Development	1
Total		21
Semester - 5		
S. No.	Name of the Subjects	Credits
35	Environmental Engineering	3
36	Environmental Engineering lab	1
37	Design of Reinforced Concrete Structure	3
38	Design of Reinforced Concrete Structure lab	1
39	Transportation Engineering-I	3
40	Transportation Engineering-I lab	1
41	Geotechnical Engineering	3
42	Geotechnical Engineering lab	1
43	Hydrology and Water Resources Engineering	3
44	Hydrology and Water Resources Engineering lab	1
45	Open Elective 01	2
46	Professionalism and Corporate Ethics	1
Total		23
Semester - 5 (Open Elective - I)		
1	Internet of Things	2
2	Renewable Energy Sources	2
Semester - 6		
S. No.	Name of the Subjects	Credits
47	Design of water and wastewater treatment systems	3
48	Design of water and wastewater treatment systems lab	1
49	Design of Steel Structures	3
50	Design of Steel Structures lab	1
51	Traffic Engineering-II	3
52	Traffic Engineering-II lab	1
53	Estimation, Costing, and Valuation	3
54	Estimation, Costing, and Valuation lab	1
55	Open Elective 02	2
56	PEC 01	3
57	PEC 01 lab	1
58	Minor Project	1
59	Employability Skills	1

Total		24
Semester - 6 (Open Elective 02)		
1	Life Sciences	2
2	Landscape Planning and Design	2
3	Fundamentals of Management	2
4	Innovation and Entrepreneurship	2
5	Constitution of India	2
6	Cyber Law and Ethics	2
Semester - 6 (PEC 01)		
1	Highway Material and Construction	3
2	Advanced Geo-Technical Engineering	3
3	Irrigation Engineering	3
4	EIA and Audit	3
Semester - 6 (PEC 01 LAB)		
1	Highway Material and Construction Lab	1
2	Advanced Geo-Technical Engineering Lab	1
3	Irrigation Engineering Lab	1
4	EIA and Audit Lab	1
Semester - 7		
S. No.	Name of the Subjects	Credits
60	Construction Project Management and Economics	3
61	Construction Project Management and Economics lab	1
62	Project-I	6
63	Summer Internship	2
64	Open Elective 03	3
65	PEC 02	3
66	PEC 02 lab	1
67	PEC 03	2
68	PEC 03 lab	1
Total		22
Semester 7 (Open Elective 03)		
1	Metro System and Engineering	3
2	Pre-Engineered and Precast Structures	3
Semester - 7 (PEC 02)		
1	Pavement Design Engineering	3
2	Open Channel Flow	3
3	Industrial water pollution and Control	3
4	Operation Research	3
5	Design of Advanced Reinforced Concrete Structures	3
Semester - 7 (PEC 02 Lab)		
1	Pavement Design Engineering LAB	1

2	Open Channel Flow LAB	1
3	Industrial water pollution and Control LAB	1
4	Operation Research LAB	1
5	Design of Advanced Reinforced Concrete Structures LAB	1
Semester - 7 (PEC 03)		
1	Urban Transportation System	2
2	Ground Improvement Techniques	2
3	Ground Water Hydrology	2
4	Tall Structure	2
Semester - 7 (PEC 03 Lab)		
1	Urban Transportation System LAB	1
2	Ground Improvement Techniques LAB	1
3	Ground Water Hydrology LAB	1
4	Tall Structure LAB	1
Semester - 8		
S. No.	Name of the Subjects	Credits
69	Design of Hydraulic Structure	3
70	Design of Hydraulic Structure Lab	1
71	Project-II	6
72	Open Elective 04	2
73	PEC 04	3
74	PEC 05	2
75	PEC 05 lab	1
Total		18
Semester - 8 (Open Elective 04)		
1	Industrial safety and Environment	2
2	Disaster Preparedness and Planning	2
Semester - 8 (PEC 04)		
1	Prestressed Concrete Structures	3
2	Road Safety Engineering	3
3	Wastewater Recycling and Management	3
4	Project Risk Management	3
Semester - 8 (PEC 05)		
1	Green Sustainable Buildings	2
2	Advance Traffic Engineering	2
3	Computer Applications in Water Resources	2
4	Construction Equipment and Automation	2
Semester - 8 (PEC 05 Lab)		
1	Green Sustainable Buildings LAB	1
2	Advance Traffic Engineering LAB	1
3	Computer Applications in Water Resources Lab	1
4	Construction Equipment and Automation Lab	1

Grand Total	178
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Faculty of Engineering and Technology - PIET / PIT		
B. Tech in Computer Science Engineering (Artificial Intelligence)		
Semester - 1		
S. No.	Name of the Subject	Credits
1	Environmental Science	2
2	Programming for Problem Solving	5
3	Basic Electrical Engineering	5
4	Electronics Workshop	1
5	Mathematics-I	5
6	Communication Skills – 1	2
7	Engineering Physics	4
Total		24
Semester - 2		
S. No.	Name of the Subject	Credits
8	Object Oriented Programming with C++	5
9	Computer Peripherals and Software Tools	3
10	Basic Electronics	4
11	Mathematics-II	5
12	Communication Skills – 2	2
13	Engineering Graphics	4
Total		23
Semester - 3		
S. No.	Name of the Subject	Credits
14	Data Structure and Algorithms	3
15	Data Structure and Algorithms Laboratory	1
16	Product Realization	1
17	Python Programming	2
18	Python Programming Laboratory	1
19	Database Management System	3
20	Database Management System Laboratory	1
21	Computer Organization and Microprocessor Architecture	3
22	Computer Organization and Microprocessor Architecture Laboratory	1
23	Discrete Mathematics	4
24	Professional Communication Skills	2
Total		22
Semester - 4		
S. No.	Name of the Subject	Credits
25	Operating System	3
26	Operating System Laboratory	1

27	Computer Networks	3
28	Computer Networks laboratory	1
29	Java Programming	3
30	Java Programming Laboratory	1
31	Design and Analysis of Algorithms	3
32	Design and Analysis of Algorithms Laboratory	1
33	Probability, Statistics and Numerical Methods	4
34	Professional Grooming and Personality Development	1
Total		21
Semester - 5		
S. No.	Name of the Subject	Credits
35	Software Engineering	3
36	Software Engineering Laboratory	1
37	Formal Language and Automata Theory	3
38	Artificial Intelligence	3
39	Artificial Intelligence Laboratory	1
40	Quant and Reasoning	3
41	Enterprise Programming	2
42	Enterprise Programming Laboratory	1
43	Professionalism and Corporate Ethics	1
44	Open Elective 01 (Compulsory Subjects :1)	2
Total		20
Semester - 5 (Open Elective 01)		
1	Basic Aircraft Science	2
2	Disaster Preparedness and Planning	2
3	Cyber Security	2
4	Azure Fundamentals	2
5	Fundamentals of Communication Engineering	2
6	Internet of Things	2
Semester - 6		
S. No.	Name of the Subject	Credits
45	Project 1	3
46	Machine Learning	3
47	Machine Learning Laboratory	1
48	Compiler Design	3
49	Compiler Design Laboratory	1
50	High Performance Computing	3
51	High Performance Computing Laboratory	1
52	Employability Skills	1
53	PEC 01(Compulsory Subjects :1)	3
54	PEC 01-LAB (Compulsory Subjects :1)	1
55	PEC 02 (Compulsory Subjects :1)	3

56	PEC 02-LAB (Compulsory Subjects :1)	1
Total		24
Semester - 6 (PEC 01)		
1	Data Visualization and Data Analytics	3
2	Cyber security	3
3	Cloud Computing	3
Semester - 6 (PEC 01 LAB)		
1	Data Visualization and Data Analytics Laboratory	1
2	Cyber security Laboratory	1
3	Cloud Computing Laboratory	1
Semester - 6 (PEC 02)		
1	Mobile Application Development	3
2	MEA(R)N Stack Web Development	3
3	Devops	3
Semester - 6 (PEC 02 LAB)		
1	Mobile Application Development Laboratory	1
2	MEA(R)N Stack Web Development Laboratory	1
3	Devops Laboratory	1
Semester - 7		
S. No.	Name of the Subject	Credits
57	Deep Learning with NLP	3
58	Deep Learning with NLP Laboratory	1
59	Project – 2	6
60	Summer Internship	2
61	Pattern Recognition	3
62	Pattern Recognition Laboratory	1
63	PEC 03 (Compulsory Subjects :1)	3
64	PEC 03-LAB (Compulsory Subjects :1)	1
65	PEC 04 (Compulsory Subjects :1)	3
66	PEC 04-LAB (Compulsory Subjects :1)	1
67	Open Elective 02 (Compulsory Subjects :1)	3
Total		27
Semester - 7 (Open Elective 02)		
1	Remote Sensing and Geo Informatics	3
2	Real Time Systems	3
3	Cyber Physical Systems	3
4	Computational Number Theory	3
5	VLSI System Design	3
Semester - 7 (PEC 03)		
1	Augmented Reality and Virtual Reality	3
2	Blockchain Technologies	3
3	Image Processing	3

Semester - 7 (PEC 03 LAB)		
1	Augmented Reality and Virtual Reality Laboratory	1
2	Blockchain Technologies Laboratory	1
3	Image Processing Laboratory	1
Semester - 7 (PEC 04)		
1	Modern Networks	3
2	Internet of Things	3
3	Software Testing and Quality Assurance	3
Semester - 7 (PEC 04 LAB)		
1	Modern Networks Laboratory	1
2	Internet of Things Laboratory	1
3	Software Testing and Quality Assurance Laboratory	1
Semester - 8		
S. No.	Name of the Subject	Credits
68	Internship	14
Total		14
Grand Total		175

Faculty of Engineering and Technology - PIET / PIT		
B. Tech in Computer Science Engineering (Block Chain)		
Semester - 1		
S. No.	Name of the Subject	Credits
1	Environmental Science	2
2	Programming for Problem Solving	5
3	Computer Peripherals and Software Tools	3
4	Basic Electrical Engineering	5
5	Mathematics-I	5
6	Communication Skills – 1	2
7	Engineering Graphics	4
Total		26
Semester - 2		
S. No.	Name of the Subject	Credits
8	Object Oriented Programming with C++	5
9	Basic Electronics	4
10	Electronics Workshop	1
11	Mathematics-II	5
12	Communication Skills – 2	2
13	Engineering Physics	4
Total		21
Semester - 3		
S. No.	Name of the Subject	Credits
14	Data Structure and Algorithms	3
15	Data Structure and Algorithms Laboratory	1
16	Product Realization	1
17	Python Programming	2
18	Python Programming Laboratory	1
19	Database Management System	3
20	Database Management System Laboratory	1
21	Computer Organization and Microprocessor Architecture	3
22	Computer Organization and Microprocessor Architecture Laboratory	1
23	Discrete Mathematics	4
24	Professional Communication Skills	2
Total		22
Semester - 4		
S. No.	Name of the Subject	Credits
25	Operating System	3
26	Operating System Laboratory	1
27	Computer Networks	3
28	Computer Networks laboratory	1

29	Java Programming	3
30	Java Programming Laboratory	1
31	Design and Analysis of Algorithms	3
32	Design and Analysis of Algorithms Laboratory	1
33	Probability, Statistics and Numerical Methods	4
34	Professional Grooming and Personality Development	1
Total		21
Semester - 5		
S. No.	Name of the Subject	Credits
35	Software Engineering	3
36	Software Engineering Laboratory	1
37	Formal Language and Automata Theory	3
38	Information and Network Security Laboratory	3
39	Information and Network Security	1
40	Quant and Reasoning	3
41	Enterprise Programming	2
42	Enterprise Programming Laboratory	1
43	Professionalism and Corporate Ethics	1
44	Open Elective 01 (Compulsory Subjects :1)	2
Total		20
Semester - 5 (Open Elective 01)		
1	Basic Aircraft Science	2
2	Disaster Preparedness and Planning	2
3	Cyber Security	2
4	Azure Fundamentals	2
5	Fundamentals of Communication Engineering	2
6	Internet of Things	2
Semester - 6		
S. No.	Name of the Subject	Credits
45	Project 1	3
46	Blockchain Components and Architecture	3
47	Blockchain Components and Architecture Laboratory	1
48	Compiler Design	3
49	Compiler Design Laboratory	1
50	Hyper ledger and Fabric Programing	3
51	Hyper ledger and Fabric Programing Laboratory	1
52	Employability Skills	1
53	PEC 01 (Compulsory Subjects :1)	3
54	PEC 01 -LAB(Compulsory Subjects :1)	1
55	PEC 02 (Compulsory Subjects :1)	3
56	PEC 02-LAB (Compulsory Subjects :1)	1
Total		24

Semester - 6 (PEC 01)		
1	Artificial Intelligence	3
2	Cyber Security	3
3	Data visualization and Data Analytics	3
Semester - 6 (PEC 01 LAB)		
1	Artificial Intelligence Laboratory	1
2	Cyber Security Laboratory	1
3	Data visualization and Data Analytics Laboratory	1
Semester - 6 (PEC 02)		
1	Mobile Application Development	3
2	MEA(R)N Stack Web Development	3
3	Devops	3
Semester - 6 (PEC 02 LAB)		
1	Mobile Application Development Laboratory	1
2	MEA(R)N Stack Web Development Laboratory	1
3	Devops Laboratory	1
Semester - 7		
S. No.	Name of the Subject	Credits
57	Crypto Currency	3
58	Crypto Currency Laboratory	1
59	Project – 2	6
60	Summer Internship	2
61	Public Blockchain- Ethereum	3
62	Public Blockchain- Ethereum Laboratory	1
63	PEC 03 (Compulsory Subjects :1)	3
64	PEC 03-LAB (Compulsory Subjects :1)	1
65	PEC 04 (Compulsory Subjects :1)	3
66	PEC 04-LAB (Compulsory Subjects :1)	1
67	Open Elective 02 (Compulsory Subjects :1)	3
	Total	27
Semester - 7 (Open Elective 02)		
1	Remote Sensing and Geo Informatics	3
2	Real Time Systems	3
3	Cyber Physical Systems	3
4	Computational Number Theory	3
5	VLSI System Design	3
Semester - 7 (PEC 03)		
1	Augmented Reality and Virtual Reality	3
2	Cloud Computing	3
3	Image Processing	3
Semester - 7 (PEC 03 LAB)		
1	Augmented Reality and Virtual Reality Laboratory	1

2	Cloud Computing Laboratory	1
3	Image Processing Laboratory	1
Semester - 7 (PEC 04)		
1	Modern Networks	3
2	Internet of Things	3
3	High Performance Computing	3
Semester - 7 (PEC 04 LAB)		
1	Modern Networks Laboratory	1
2	Internet of Things Laboratory	1
3	High Performance Computing Laboratory	1
Semester - 8		
S. No.	Name of the Subject	Credits
68	Internship	14
Total		14
Grand Total		175

Faculty of Engineering and Technology - PIET / PIT		
B. Tech in Computer Science Engineering (Big Data Analytics)		
Semester - 1		
S. No.	Name of the Subject	Credits
1	Environmental Science	2
2	Programming for Problem Solving	5
3	Computer Peripherals and Software Tools	3
4	Basic Electrical Engineering	5
5	Mathematics-I	5
6	Communication Skills – 1	2
7	Engineering Graphics	4
Total		26
Semester - 2		
S. No.	Name of the Subject	Credits
8	Object Oriented Programming with C++	5
9	Basic Electronics	4
10	Electronics Workshop	1
11	Mathematics-II	5
12	Communication Skills – 2	2
13	Engineering Physics	4
Total		21
Semester - 3		
S. No.	Name of the Subject	Credits
14	Data Structure and Algorithms	3
15	Data Structure and Algorithms Laboratory	1
16	Product Realization	1
17	Python Programming	2
18	Python Programming Laboratory	1
19	Database Management System	3
20	Database Management System Laboratory	1
21	Computer Organization and Microprocessor Architecture	3
22	Computer Organization and Microprocessor Architecture Laboratory	1
23	Discrete Mathematics	4
24	Professional Communication Skills	2
Total		22
Semester - 4		
S. No.	Name of the Subject	Credits
25	Operating System	3
26	Operating System Laboratory	1
27	Computer Networks	3
28	Computer Networks laboratory	1

29	Java Programming	3
30	Java Programming Laboratory	1
31	Design and Analysis of Algorithms	3
32	Design and Analysis of Algorithms Laboratory	1
33	Probability, Statistics and Numerical Methods	4
34	Professional Grooming and Personality Development	1
Total		21
Semester - 5		
S. No.	Name of the Subject	Credits
35	Software Engineering	3
36	Software Engineering Laboratory	1
37	Formal Language and Automata Theory	3
38	Data Visualization and Data Analytics Laboratory	3
39	Data Visualization and Data Analytics	1
40	Quant and Reasoning	3
41	Enterprise Programming	2
42	Enterprise Programming Laboratory	1
43	Professionalism and Corporate Ethics	1
44	Open Elective 01 (Compulsory Subjects :1)	2
Total		20
Semester - 5 (Open Elective 01)		
1	Basic Aircraft Science	2
2	Disaster Preparedness and Planning	2
3	Cyber Security	2
4	Azure Fundamentals	2
5	Fundamentals of Communication Engineering	2
6	Internet of Things	2
Semester - 6		
S. No.	Name of the Subject	Credits
45	Project 1	3
46	Big Data Analytics	3
47	Big Data Analytics Laboratory	1
48	Compiler Design	3
49	Compiler Design Laboratory	1
50	Cloud Computing	3
51	Cloud Computing Laboratory	1
52	Employability Skills	1
53	PEC 01 (Compulsory Subjects :1)	3
54	PEC 01-LAB (Compulsory Subjects :1)	1
55	PEC 02 (Compulsory Subjects :1)	3
56	PEC 02-LAB (Compulsory Subjects :1)	1
Total		24

Semester - 6 (PEC 01)		
1	Artificial Intelligence	3
2	Cyber Security	3
3	Data Science	3
Semester - 6 (PEC 01 LAB)		
1	Artificial Intelligence Laboratory	1
2	Cyber Security Laboratory	1
3	Data Science Laboratory	1
Semester - 6 (PEC 02)		
1	Mobile Application Development	3
2	MEA(R)N Stack Web Development	3
3	Devops	3
Semester - 6 (PEC 02 LAB)		
1	Mobile Application Development Laboratory	1
2	MEA(R)N Stack Web Development Laboratory	1
3	Devops Laboratory	1
Semester - 7		
S. No.	Name of the Subject	Credits
57	Data Visualization and Wrangling	3
58	Data Visualization and Wrangling Laboratory	1
59	Project – 2	6
60	Summer Internship	2
61	Big Data on Cloud	3
62	Big Data on Cloud Laboratory	1
63	PEC 03 (Compulsory Subjects :1)	3
64	PEC 03-LAB (Compulsory Subjects :1)	1
65	PEC 04 (Compulsory Subjects :1)	3
66	PEC 04-LAB (Compulsory Subjects :1)	1
67	Open Elective 02 (Compulsory Subjects :1)	3
Total		27
Semester - 7 (Open Elective 02)		
1	Remote Sensing and Geo Informatics	3
2	Real Time Systems	3
3	Cyber Physical Systems	3
4	Computational Number Theory	3
5	VLSI System Design	3
Semester - 7 (PEC 03)		
1	Augmented and Virtual Reality	3
2	Blockchain Technologies	3
3	Machine Learning	3
Semester - 7 (PEC 03 LAB)		
1	Augmented and Virtual Reality Laboratory	1

2	Blockchain Technologies Laboratory	1
3	Machine Learning Laboratory	1
Semester - 7 (PEC 04)		
1	Big Data Security	3
2	Internet of Things	3
3	High Performance Computing	3
Semester - 7 (PEC 04-LAB)		
1	Big Data Security Laboratory	1
2	Internet of Things Laboratory	1
3	High Performance Computing Laboratory	1
Semester – 8		
S. No.	Name of the Subject	Credits
68	Internship	14
Total		14
Grand Total		175

Faculty of Engineering and Technology - PIET / PIT		
B. Tech in Computer Engineering		
Semester - 1		
S. No.	Name of the Subject	Credits
1	Environmental Science	2
2	Programming for Problem Solving	5
3	Computer Peripherals and Software Tools	3
4	Basic Electrical Engineering	5
5	Mathematics-I	5
6	Communication Skills – 1	2
7	Engineering Graphics	4
Total		26
Semester - 2		
S. No.	Name of the Subject	Credits
8	Object Oriented Programming with C++	5
9	Basic Electronics	4
10	Electronics Workshop	1
11	Mathematics-II	5
12	Communication Skills – 2	2
13	Engineering Physics	4
Total		21
Semester - 3		
S. No.	Name of the Subject	Credits
14	Digital Electronics	3
15	Digital Electronics Laboratory	1
16	Data Structure and Algorithms	3
17	Data Structure and Algorithms Laboratory	1
18	Product Realization	1
19	Python Programming	2
20	Python Programming Laboratory	1
21	Database Management System	3
22	Database Management System Laboratory	1
23	Discrete Mathematics	4
24	Professional Communication Skills	2
Total		22
Semester - 4		
S. No.	Name of the Subject	Credits
25	Operating System	3
26	Operating System Laboratory	1
27	Computer Networks	3
28	Computer Networks laboratory	1
29	Java Programming	3

30	Java Programming Laboratory	1
31	Computer Organization and Microprocessor Architecture	3
32	Computer Organization and Microprocessor Architecture Laboratory	1
33	Probability, Statistics and Numerical Methods	4
34	Professional Grooming and Personality Development	1
Total		21
Semester - 5		
S. No.	Name of the Subject	Credits
35	Design and Analysis of Algorithms	3
36	Design and Analysis of Algorithms Laboratory	1
37	Software Engineering	3
38	Software Engineering Laboratory	1
39	Formal Language and Automata Theory	3
40	Enterprise Programming	2
41	Enterprise Programming Laboratory	1
42	Quant and Reasoning	3
43	Professionalism and Corporate Ethics	1
44	Open Elective 01 (Compulsory Subjects :1)	2
Total		20
Semester - 5 (Open Elective 01)		
1	Basic Aircraft Science	2
2	Disaster Preparedness and Planning	2
3	Cyber Security	2
4	Azure Fundamentals	2
5	Fundamentals of Communication Engineering	2
6	Internet of Things	2
Semester - 6		
S. No.	Name of Subject	Credits
45	Project 1	3
46	Data Visualization and Data Analytics	3
47	Data Visualization and Data Analytics Laboratory	1
48	Compiler Design	3
49	Compiler Design Laboratory	1
50	MEA(R)N Stack Web Development	3
51	MEA(R)N Stack Web Development Laboratory	1
52	Employability Skills	1
53	PEC 01 (Compulsory Subjects :1)	3
54	PEC 01-LAB (Compulsory Subjects :1)	1
55	PEC 02 (Compulsory Subjects :1)	3
56	PEC 02-LAB (Compulsory Subjects :1)	1
Total		24
Semester - 6 (PEC 01)		

1	Artificial Intelligence	3
2	Cyber Security	3
3	Cloud Computing	3
Semester - 6 (PEC 01 LAB)		
1	Artificial Intelligence Laboratory	1
2	Cyber Security Laboratory	1
3	Cloud Computing Laboratory	1
Semester - 6 (PEC 02)		
1	Mobile Application Development	3
2	.Net Programming	3
3	Devops	3
Semester - 6 (PEC 02 LAB)		
1	Mobile Application Development Laboratory	1
2	.Net Programming Laboratory	1
3	Devops Laboratory	1
Semester - 7		
S. No.	Name of the Subject	Credits
57	Information and Network security	3
58	Information and Network security Laboratory	1
59	Project – 2	6
60	Summer Internship	2
61	Software Testing and Quality Assurance	3
62	Software Testing and Quality Assurance Laboratory	1
63	PEC 03 (Compulsory Subjects :1)	3
64	PEC 03-LAB (Compulsory Subjects :1)	1
65	PEC 04 (Compulsory Subjects :1)	3
66	PEC 04-LAB (Compulsory Subjects :1)	1
67	Open Elective 02 (Compulsory Subjects :1)	3
Total		27
Semester - 7 (Open Elective 02)		
1	Remote Sensing and Geo Informatics	3
2	Real Time Systems	3
3	Cyber Physical Systems	3
4	Computational Number Theory	3
5	VLSI System Design	3
Semester - 7 (PEC 03)		
1	Augmented and Virtual Reality	3
2	Blockchain Technologies	3
3	Machine Learning	3
Semester - 7 (PEC 03 LAB)		
1	Augmented and Virtual Reality Laboratory	1
2	Blockchain Technologies Laboratory	1

3	Machine Learning Laboratory	1
Semester - 7 (PEC 04)		
1	Modern Networks	3
2	Big Data Analytics	3
3	High performance computing	3
Semester - 7 (PEC 04 LAB)		
1	Modern Networks Laboratory	1
2	Big Data Analytics Laboratory	1
3	High performance computing Laboratory	1
Semester - 8		
S. No.	Name of the Subject	Credits
68	Internship	14
Total		14
Grand Total		175

Faculty of Engineering and Technology - PIET / PIT		
B. Tech in Computer Science Engineering (Cloud Computing)		
Semester - 1		
S. No.	Name of the Subject	Credits
1	Environmental Science	2
2	Programming for Problem Solving	5
3	Computer Peripherals and Software Tools	3
4	Basic Electrical Engineering	5
5	Mathematics-I	5
6	Communication Skills – 1	2
7	Engineering Graphics	4
Total		26
Semester - 2		
S. No.	Name of the Subject	Credits
8	Object Oriented Programming with C++	5
9	Basic Electronics	4
10	Electronics Workshop	1
11	Mathematics-II	5
12	Communication Skills – 2	2
13	Engineering Physics	4
Total		21
Semester - 3		
S. No.	Name of the Subject	Credits
14	Data Structure and Algorithms	3
15	Data Structure and Algorithms Laboratory	1
16	Product Realization	1
17	Python Programming	2
18	Python Programming Laboratory	1
19	Database Management System	3
20	Database Management System Laboratory	1
21	Computer Organization and Microprocessor Architecture	3
22	Computer Organization and Microprocessor Architecture Laboratory	1
23	Discrete Mathematics	4
24	Professional Communication Skills	2
Total		22
Semester - 4		
S. No.	Name of the Subject	Credits
25	Operating System	3
26	Operating System Laboratory	1
27	Computer Networks	3
28	Computer Networks laboratory	1

29	Java Programming	3
30	Java Programming Laboratory	1
31	Design and Analysis of Algorithms	3
32	Design and Analysis of Algorithms Laboratory	1
33	Probability, Statistics and Numerical Methods	4
34	Professional Grooming and Personality Development	1
Total		21
Semester - 5		
S. No.	Name of the Subject	Credits
35	Software Engineering	3
36	Software Engineering Laboratory	1
37	Formal Language and Automata Theory	3
38	Distributed Computing Laboratory	3
39	Distributed Computing	1
40	Quant and Reasoning	3
41	Enterprise Programming	2
42	Enterprise Programming Laboratory	1
43	Professionalism and Corporate Ethics	1
44	Open Elective 01 (Compulsory Subjects :1)	2
Total		20
Semester - 5 (Open Elective 01)		
1	Basic Aircraft Science	2
2	Disaster Preparedness and Planning	2
3	Cyber Security	2
4	Azure Fundamentals	2
5	Fundamentals of Communication Engineering	2
6	Internet of Things	2
Semester - 6		
S. No.	Name of the Subject	Credits
45	Project 1	3
46	high performance computing	3
47	high performance computing Laboratory	1
48	Compiler Design	3
49	Compiler Design Laboratory	1
50	Cloud Computing	3
51	Cloud Computing Laboratory	1
52	Employability Skills	1
53	PEC 01 (Compulsory Subjects :1)	3
54	PEC 01 -LAB(Compulsory Subjects :1)	1
55	PEC 02 (Compulsory Subjects :1)	3
56	PEC 02-LAB (Compulsory Subjects :1)	1
Total		24

Semester - 6 (PEC 01)		
1	Artificial Intelligence	3
2	Cyber Security	3
3	Data visualization and Data Analytics	3
Semester - 6 (PEC 01 LAB)		
1	Artificial Intelligence Laboratory	1
2	Cyber Security Laboratory	1
3	Data visualization and Data Analytics Laboratory	1
Semester - 6 (PEC 02)		
1	Mobile Application Development	3
2	MEA(R)N Stack Web Development	3
3	Devops	3
Semester - 6 (PEC 02 LAB)		
1	Mobile Application Development Laboratory	1
2	MEA(R)N Stack Web Development Laboratory	1
3	Devops Laboratory	1
Semester - 7		
S. No.	Name of the Subject	Credits
57	Cloud Storage Management	3
58	Cloud Storage Management Laboratory	1
59	Project – 2	6
60	Summer Internship	2
61	Virtualization	3
62	Virtualization Laboratory	1
63	PEC 03 (Compulsory Subjects :1)	3
64	PEC 03-LAB (Compulsory Subjects :1)	1
65	PEC 04 (Compulsory Subjects :1)	3
66	PEC 04-LAB (Compulsory Subjects :1)	1
67	Open Elective 02 (Compulsory Subjects :1)	3
Total		27
Semester - 7 (Open Elective 02)		
1	Remote Sensing and Geo Informatics	3
2	Real Time Systems	3
3	Cyber Physical Systems	3
4	Computational Number Theory	3
5	VLSI System Design	3
Semester - 7 (PEC 03)		
1	Augmented Reality and Virtual Reality	3
2	Blockchain Technologies	3
3	Image Processing	3
Semester - 7 (PEC 03 LAB)		
1	Augmented Reality and Virtual Reality Laboratory	1

2	Blockchain Technologies Laboratory	1
3	Image Processing Laboratory	1
Semester - 7 (PEC 04)		
1	Modern Networks	3
2	Internet of Things	3
3	Machine Learning	3
Semester - 7 (PEC 04 LAB)		
1	Modern Networks Laboratory	1
2	Internet of Things Laboratory	1
3	Machine Learning Laboratory	1
Semester - 8		
S. No.	Name of the Subject	Credits
68	Internship	14
Total		14
Grand Total		175

Faculty of Engineering and Technology - PIET / PIT		
B. Tech in Computer Science Engineering (Cyber Security)		
Semester - 1		
S. No.	Name of the Subject	Credits
1	Environmental Science	2
2	Programming for Problem Solving	5
3	Computer Peripherals and Software Tools	3
4	Basic Electrical Engineering	5
5	Mathematics-I	5
6	Communication Skills – 1	2
7	Engineering Graphics	4
Total		26
Semester - 2		
S. No.	Name of the Subject	Credits
8	Object Oriented Programming with C++	5
9	Basic Electronics	4
10	Electronics Workshop	1
11	Mathematics-II	5
12	Communication Skills – 2	2
13	Engineering Physics	4
Total		21
Semester - 3		
S. No.	Name of the Subject	Credits
14	Data Structure and Algorithms	3
15	Data Structure and Algorithms Laboratory	1
16	Product Realization	1
17	Python Programming	2
18	Python Programming Laboratory	1
19	Database Management System	3
20	Database Management System Laboratory	1
21	Computer Organization and Microprocessor Architecture	3
22	Computer Organization and Microprocessor Architecture Laboratory	1
23	Discrete Mathematics	4
24	Professional Communication Skills	2
Total		22
Semester - 4		
S. No.	Name of the Subject	Credits
25	Operating System	3
26	Operating System Laboratory	1
27	Computer Networks	3
28	Computer Networks laboratory	1

29	Java Programming	3
30	Java Programming Laboratory	1
31	Design and Analysis of Algorithms	3
32	Design and Analysis of Algorithms Laboratory	1
33	Probability, Statistics and Numerical Methods	4
34	Professional Grooming and Personality Development	1
Total		21
Semester - 5		
S. No.	Name of the Subject	Credits
35	Software Engineering	3
36	Software Engineering Laboratory	1
37	Mastering Kali Linux and OSINT	3
38	Mastering Kali Linux and OSINT Laboratory	1
39	Digital Forensics and Incident Response	3
40	Digital Forensics and Incident Response Laboratory	1
41	Information Security Management System	2
42	Quant and Reasoning	3
43	Professionalism and Corporate Ethics	1
44	Open Elective 01 (Compulsory Subjects :1) or Global Certifications	2
Total		20
Semester - 5 (Open Elective – 01)		
1	Basic Aircraft Science	2
2	Disaster Preparedness and Planning	2
3	Cyber Security	2
4	Azure Fundamentals	2
5	Fundamentals of Communication Engineering	2
6	Internet of Things	2
Semester - 6		
S. No.	Name of the Subject	Credits
45	Project - 1	3
46	Web Application Security	3
47	Web Application Security Laboratory	1
48	Mobile Application Security	3
49	Mobile Application Security Laboratory	1
50	Cloud Computing and Security	3
51	Cloud Computing and Security Laboratory	1
52	PEC 01-LAB (Compulsory Subjects :1)	1
53	PEC 01 (Compulsory Subjects :1) or Global Certification 2	3
54	PEC 02 (Compulsory Subjects :1) or Global Certification 3	3
55	PEC 02-LAB (Compulsory Subjects :1)	1
56	Employability Skills	1
Total		24

Semester - 6 (PEC 01)		
1	Basics of MSF and Cryptography	3
2	Data visualization and Data Analytics	3
3	Artificial Intelligence	3
Semester - 6 (PEC 01 LAB)		
1	Basics of MSF and Cryptography Laboratory	1
2	Data visualization and Data Analytics Laboratory	1
3	Artificial Intelligence Laboratory	1
Semester - 6 (PEC 02)		
1	Mobile Application Development	3
2	MEA(R)N Stack Web Development	3
3	Devops	3
Semester - 6 (PEC 02 LAB)		
1	Mobile Application Development Laboratory	1
2	MEA(R)N Stack Web Development Laboratory	1
3	Devops Laboratory	1
Semester - 7		
S. No.	Name of the Subject	Credits
57	Block chain and Web 3.0 security	3
58	Block chain and Web 3.0 security Laboratory	1
59	Project – 2	6
60	Summer Internship	2
61	Fundamental of OT Security	3
62	Fundamental of OT Security Laboratory	1
63	PEC 03 (Compulsory Subjects :1)	3
64	PEC 03-LAB (Compulsory Subjects :1)	1
65	PEC 04 (Compulsory Subjects :1)	3
66	PEC 04-LAB (Compulsory Subjects :1)	1
67	Open Elective 02 (Compulsory Subjects :1)	3
Total		27
Semester - 7 (Open Elective – 02)		
1	Remote Sensing and Geo Informatics	3
2	Real Time Systems	3
3	Cyber Physical Systems	3
4	Computational Number Theory	3
5	VLSI System Design	3
Semester - 7 (PEC 03)		
1	Augmented and Virtual Reality	3
2	Advance Information security management system	3
3	Machine Learning	3
Semester - 7 (PEC 03 LAB)		
1	Augmented and Virtual Reality Laboratory	1

2	Advance Information security management system Laboratory	1
3	Machine Learning Laboratory	1
Semester - 7 (PEC 04)		
1	Modern Networks	3
2	Big Data Analytics	3
3	High performance computing	3
Semester - 7 (PEC 04-LAB)		
1	Modern Networks Laboratory	1
2	Big Data Analytics Laboratory	1
3	High performance computing Laboratory	1
Semester - 8		
S. No.	Name of the Subject	Credits
68	Internship	14
Total		14
Grand Total		175

Faculty of Engineering and Technology - PIET / PIT		
B. Tech in Computer Science Engineering (Internet of Things)		
Semester - 1		
S. No.	Name of the Subject	Credits
1	Environmental Science	2
2	Programming for Problem Solving	5
3	Computer Peripherals And Software Tools	3
4	Basic Electrical Engineering	5
5	Mathematics-I	5
6	Communication Skills – 1	2
7	Engineering Graphics	4
Total		26
Semester - 2		
S. No.	Name of the Subject	Credits
8	Object Oriented Programming with C++	5
9	Basic Electronics	4
10	Electronics Workshop	1
11	Mathematics-II	5
12	Communication Skills – 2	2
13	Engineering Physics	4
Total		21
Semester - 3		
S. No.	Name of the Subject	Credits
14	Data Structure and Algorithms	3
15	Data Structure and Algorithms Laboratory	1
16	Product Realization	1
17	Python Programming	2
18	Python Programming Laboratory	1
19	Database Management System	3
20	Database Management System Laboratory	1
21	Computer Organization and Microprocessor Architecture	3
22	Computer Organization and Microprocessor Architecture Laboratory	1
23	Discrete Mathematics	4
24	Professional Communication Skills	2
Total		22
Semester - 4		
S. No.	Name of the Subject	Credits
25	Operating System	3
26	Operating System Laboratory	1
27	Computer Networks	3
28	Computer Networks laboratory	1

29	Java Programming	3
30	Java Programming Laboratory	1
31	Design and Analysis of Algorithms	3
32	Design and Analysis of Algorithms Laboratory	1
33	Probability, Statistics and Numerical Methods	4
34	Professional Grooming and Personality Development	1
Total		21
Semester - 5		
S. No.	Name of the Subject	Credits
35	Software Engineering	3
36	Software Engineering Laboratory	1
37	Formal Language and Automata Theory	3
38	IoT Based Systems Laboratory	3
39	IoT Based Systems	1
40	Quant and Reasoning	3
41	Enterprise Programming	2
42	Enterprise Programming Laboratory	1
43	Professionalism and Corporate Ethics	1
44	Open Elective 01 (Compulsory Subjects :1)	2
Total		20
Semester - 5 (Open Elective 01)		
1	Basic Aircraft Science	2
2	Disaster Preparedness and Planning	2
3	Cyber Security	2
4	Azure Fundamentals	2
5	Fundamentals of Communication Engineering	2
6	Internet of Things	2
Semester - 6		
S. No.	Name of the Subject	Credits
45	Project 1	3
46	Programming for IoT	3
47	Programming for IoT Laboratory	1
48	Compiler Design	3
49	Compiler Design Laboratory	1
50	ML for IoT	3
51	ML for IoT Laboratory	1
52	Employability Skills	1
53	PEC 01(Compulsory Subjects :1)	3
54	PEC 01-LAB (Compulsory Subjects :1)	1
55	PEC 02 (Compulsory Subjects :1)	3
56	PEC 02-LAB (Compulsory Subjects :1)	1
Total		24

Semester - 6 (PEC 01)		
1	Artificial Intelligence	3
2	Cyber Security	3
3	Data visualization and Data Analytics	3
Semester - 6 (PEC 01 LAB)		
1	Artificial Intelligence Laboratory	1
2	Cyber Security Laboratory	1
3	Data visualization and Data Analytics Laboratory	1
Semester - 6 (PEC 02)		
1	Mobile Application Development	3
2	MEA(R)N Stack Web Development	3
3	Devops	3
Semester - 6 (PEC 02 LAB)		
1	Mobile Application Development Laboratory	1
2	MEA(R)N Stack Web Development Laboratory	1
3	Devops Laboratory	1
Semester - 7		
S. No.	Name of the Subject	Credits
57	Advance Programming for IoT	3
58	Advance Programming for IoT Laboratory	1
59	Project – 2	6
60	Summer Internship	2
61	Smart Convergent Technologies	3
62	Smart Convergent Technologies Laboratory	1
63	PEC 03 (Compulsory Subjects :1)	3
64	PEC 03-LAB (Compulsory Subjects :1)	1
65	PEC 04 (Compulsory Subjects :1)	3
66	PEC 04-LAB (Compulsory Subjects :1)	1
67	Open Elective 02 (Compulsory Subjects :1)	3
Total		27
Semester – 7 (Open Elective 02)		
1	Remote Sensing and Geo Informatics	3
2	Real Time Systems	3
3	Cyber Physical Systems	3
4	Computational Number Theory	3
5	VLSI System Design	3
Semester - 7 (PEC 03)		
1	Augmented and Virtual Reality	3
2	Deep Learning With NLP	3
3	Privacy And Security In IoT	3
Semester - 7 (PEC 03 LAB)		
1	Augmented and Virtual Reality Laboratory	1

2	Deep Learning With NLP Laboratory	1
3	Privacy And Security In IoT Laboratory	1
Semester - 7 (PEC 04)		
1	Modern Networks	3
2	Image Processing	3
3	High Performance Computing	3
Semester - 7 (PEC 04 LAB)		
S. No.	Name of Subject	Credits
1	Modern Networks Laboratory	1
2	Image Processing Laboratory	1
3	High Performance Computing Laboratory	1
Semester - 8		
S. No.	Name of Subject	Credits
68	Internship	14
Total		14
Grand Total		175

Faculty of Engineering and Technology - PIET / PIT		
B. Tech in Computer Science Engineering		
Semester - 1		
S. No.	Name of the Subject	Credits
1	Environmental Science	2
2	Programming for Problem Solving	5
3	Computer Peripherals And Software Tools	3
4	Basic Electrical Engineering	5
5	Mathematics-I	5
6	Communication Skills – 1	2
7	Engineering Graphics	4
Total		26
Semester - 2		
S. No.	Name of the Subject	Credits
8	Object Oriented Programming with C++	5
9	Basic Electronics	4
10	Electronics Workshop	1
11	Mathematics-II	5
12	Communication Skills – 2	2
13	Engineering Physics	4
Total		21
Semester - 3		
S. No.	Name of the Subject	Credits
14	Digital Electronics	3
15	Digital Electronics Laboratory	1
16	Data Structure and Algorithms	3
17	Data Structure and Algorithms Laboratory	1
18	Product Realization	1
19	Python Programming	2
20	Python Programming Laboratory	1
21	Database Management System	3
22	Database Management System Laboratory	1
23	Discrete Mathematics	4
24	Professional Communication Skills	2
Total		22
Semester - 4		
S. No.	Name of the Subject	Credits
25	Operating System	3
26	Operating System Laboratory	1
27	Computer Networks	3
28	Computer Networks laboratory	1
29	Java Programming	3

30	Java Programming Laboratory	1
31	Computer Organization and Microprocessor Architecture	3
32	Computer Organization and Microprocessor Architecture Laboratory	1
33	Probability, Statistics and Numerical Methods	4
34	Professional Grooming and Personality Development	1
Total		21
Semester - 5		
S. No.	Name of the Subject	Credits
35	Design and Analysis of Algorithms	3
36	Design and Analysis of Algorithms Laboratory	1
37	Software Engineering	3
38	Software Engineering Laboratory	1
39	Formal Language and Automata Theory	3
40	Enterprise Programming	2
41	Enterprise Programming Laboratory	1
42	Quant and Reasoning	3
43	Professionalism and Corporate Ethics	1
44	Open Elective 01 (Compulsory Subjects :1)	2
Total		20
Semester - 5 (Open Elective 01)		
1	Basic Aircraft Science	2
2	Disaster Preparedness and Planning	2
3	Cyber Security	2
4	Azure Fundamentals	2
5	Fundamentals of Communication Engineering	2
6	Internet of Things	2
Semester - 6		
S. No.	Name of the Subject	Credits
45	Project 1	3
46	Data Analytics and Data Visualization	3
47	Data Analytics and Data Visualization Laboratory	1
48	Compiler Design	3
49	Compiler Design Laboratory	1
50	MEA(R)N Stack Web Development	3
51	MEA(R)N Stack Web Development Laboratory	1
52	Employability Skills	1
53	PEC 01 (Compulsory Subjects :1)	3
54	PEC 01 - LAB (Compulsory Subjects :1)	1
55	PEC 02 (Compulsory Subjects :1)	3
56	PEC 02-LAB (Compulsory Subjects :1)	1
Total		24

Semester - 6 (PEC 01)		
1	Artificial Intelligence	3
2	Cyber Security	3
3	Cloud Computing	3
Semester - 6 (PEC 01 LAB)		
1	Artificial Intelligence Laboratory	1
2	Cyber Security Laboratory	1
3	Cloud Computing Laboratory	1
Semester - 6 (PEC 02)		
1	Mobile Application Development	3
2	.Net Programming	3
3	Devops	3
Semester - 6 (PEC 02 LAB)		
1	Mobile Application Development Laboratory	1
2	.Net Programming Laboratory	1
3	Devops Laboratory	1
Semester - 7		
S. No.	Name of the Subject	Credits
57	Information and Network security	3
58	Information and Network security Laboratory	1
59	Project – 2	6
60	Summer Internship	2
61	Software Testing and Quality Assurance	3
62	Software Testing and Quality Assurance Laboratory	1
63	PEC 03 (Compulsory Subjects :1)	3
64	PEC 03-LAB (Compulsory Subjects :1)	1
65	PEC 04 (Compulsory Subjects :1)	3
66	PEC 04-LAB (Compulsory Subjects :1)	1
67	Open Elective 02 (Compulsory Subjects :1)	3
Total		27
Semester - 7 (Open Elective 02)		
1	Remote Sensing and Geo Informatics	3
2	Real Time Systems	3
3	Cyber Physical Systems	3
4	Computational Number Theory	3
5	VLSI System Design	3
Semester - 7 (PEC 03)		
1	Augmented and Virtual Reality	3
2	Blockchain Technologies	3
3	Machine Learning	3
Semester - 7 (PEC 03 LAB)		
1	Augmented and Virtual Reality Laboratory	1

2	Blockchain Technologies Laboratory	1
3	Machine Learning Laboratory	1
Semester - 7 (PEC 04)		
1	Modern Networks	3
2	Big Data Analytics	3
3	High performance computing	3
Semester - 7 (PEC 04-LAB)		
1	Modern Networks Laboratory	1
2	Big Data Analytics Laboratory	1
3	High performance computing Laboratory	1
Semester - 8		
S. No.	Name of the Subject	Credits
68	Internship	14
Total		14
Grand Total		175

Faculty of Engineering and Technology - PIET		
B.Tech in Electrical Engineering		
Semester - 1		
S. No.	Name of the Subject	Credits
1	Basic Electrical Engineering	5
2	Information and Communication Technology	3
3	Fundamentals of Programming	4
4	Mathematics -I	5
5	Elements of Mechanical Engineering	4
6	Communication Skills - 1	2
Total		23
Semester - 2		
S. No.	Name of the Subject	Credits
7	Workshop	2
8	Environmental Science	0
9	Engineering Graphics	4
10	Basic Electronics	4
11	Engineering Physics	4
12	Mathematics-II	5
13	Communication Skills - 2	2
Total		21
Semester – 3		
S. No.	Name of the Subject	Credits
14	Fundamentals of Signals and Systems	2
15	Fundamentals of Signals and Systems Lab	1
16	Electrical Machines - I	3
17	Electrical Machines - I Lab	1
18	Electrical Circuit Analysis	3
19	Electrical Circuit Analysis Lab	1
20	Analog and Digital Electronics	4
21	Analog and Digital Electronics Lab	1
22	Mathematics III	4
23	Professional Communication Skills	2
24	Product Realisation	1
Total		23

Semester – 4		
S. No.	Name of the Subject	Credits
25	Control System Engineering	3
26	Control System Engineering Lab	1
27	Electrical Machines-II	3
28	Electrical Machines-II Lab	1
29	Power Electronics - I	3
30	Power Electronics - I Lab	1
31	Electromagnetic	3
32	Electromagnetics Lab	1
33	Power Plant Engineering	3
34	Professional Grooming and Personality Development	1
	Total	20
Semester – 5		
S. No.	Name of the Subject	Credits
35	Microprocessors	3
36	Microprocessors Lab	1
37	Electrical Measurements and Instrumentation	3
38	Electrical Measurements and Instrumentation Lab	1
39	Power System - I	3
40	Power System - I Lab	1
41	Power Electronics - II	3
42	Power Electronics - II Lab	1
43	Professionalism and Corporate Ethics	1
44	Open Elective 01	2
45	PEC 01-LAB	1
46	PEC 01	3
	Total	23
Semester – 5 (PEC 01)		
1	High Voltage Engineering	3
2	Industrial Electrical Systems	3
Semester – 5 (PEC 01-LAB)		
1	High Voltage Engineering Lab	1
2	Industrial Electrical Systems Lab	1
Semester – 5 (Open Elective 01)		

1	Basic Aircraft Science	2
2	Disaster Preparedness and Planning	2
3	Cyber Security	2
4	Fundamentals of Communication Engineering	2
5	Internet of Things	2
6	Renewable Energy Sources	2
Semester – 6		
S. No.	Name of the Subject	Credits
47	Power System-II	3
48	Power System-II Lab	1
49	Minor Project	1
50	Employability Skills	1
51	Open Elective 02	2
52	Open Elective 03	3
53	PEC 02	3
54	PEC 02-LAB	1
55	PEC 03	3
56	PEC 03-LAB	1
Total		19
Semester – 6 (PEC 02)		
1	Electrical Machine Design	3
2	Electro Magnetic Waves	3
Semester – 6 (PEC 02-LAB)		
1	Electrical Machine Design Lab	1
2	Electro Magnetic Waves Lab	1
Semester – 6 (PEC 03)		
1	Power System Protection	3
2	HVDC Transmission System	3
Semester – 6 (PEC 03-LAB)		
1	Power System Protection Lab	1
2	HVDC Transmission System Lab	1
Semester – 6 (Open Elective 02)		
1	Life Science	2
2	Biology for Engineers	2
3	Engineering Geology	2
4	Landscape Planning and Design	2
5	Fundamentals of Management	2

6	Corporate Social Responsibility	2
7	Innovation and Entrepreneurship	2
8	Cyber Law and Ethics	2
Semester – 6 (Open Elective 03)		
1	Industrial Safety	3
Semester – 7		
S. No.	Name of the Subject	Credits
57	Summer Internship	2
58	Project - I	6
59	Industrial Automation	4
60	PEC 04	3
61	PEC 04-LAB	1
62	PEC 05	3
63	PEC 05-LAB	1
Total		20
Semester – 7 (PEC 04)		
1	Electrical Energy Conservation and Audit	3
2	Power System Dynamics and Control	3
3	Line-commutated and Active PWM Rectifiers and Inverters	3
4	Electrical Drives	3
Semester – 7 (PEC 04-LAB)		
1	Electrical Energy Conservation and Audit Lab	1
2	Power System Dynamics and Control Lab	1
3	Line-commutated and Active PWM Rectifiers and Inverters Lab	1
4	Electrical Drives Lab	1
Semester – 7 (PEC 05)		
1	Power System Operation and Control	3
2	Computational Electromagnetics	3
Semester – 7 (PEC 05-LAB)		
1	Power System Operation and Control Lab	1
2	Computational Electromagnetics Lab	1
Semester – 8		
S. No.	Name of the Subject	Credits
64	Electrical Installation, Maintenance and Testing	3
65	Project - II	6
66	Power Quality and FACTs	4

67	PEC 06	3
68	PEC 06-LAB	1
Total		17
Semester – 8 (PEC 06)		
1	Wind and Solar Energy Systems	3
2	Electrical Hybrid Vehicles	3
3	Advanced Electrical Drives	3
4	Digital Signal Processing	3
5	Advance Controller	3
Semester – 8 (PEC 06-LAB)		
1	Wind and Solar Energy Systems Lab	1
2	Electrical Hybrid Vehicles Lab	1
3	Advanced Electrical Drives Lab	1
4	Digital Signal Processing Lab	1
5	Advance Controller lab	1
Grand Total		166

Faculty of Engineering and Technology – PIET		
B Tech in Electronics and Communication Engineering		
Semester – 1		
S. No.	Name of the Subject	Credits
1	Fundamental of Programming	4
2	Basic Electrical Engineering	5
3	Information and Communication Technology	3
4	Elements of Mechanical Engineering	4
5	Mathematics-I	5
6	Communication Skills - 1	2
Total		23
Semester – 2		
S. No.	Name of the Subject	Credits
7	Environmental Science	2
8	Basic Electronics	4
9	Electronics Workshop	1
10	Engineering Graphics	4
11	Mathematics-II	5
12	Engineering Physics	4
13	Communication Skills - 2	2
Total		22
Semester – 3		
S. No.	Name of the Subject	Credits
14	Electronic Devices	3
15	Electronic Devices Lab	1
16	Digital System Design	3
17	Digital System Design Lab	1
18	Network Theory	3
19	Network Theory Lab	1
20	Signals and Systems	3
21	Signals and Systems Lab	1
22	Product Realization	1
23	Mathematics-III	4
24	Professional Communication Skills	2
Total		23
Semester – 4		
S. No.	Name of the Subject	Credits
25	Analog Communication	3

26	Analog Communication Lab	1
27	Analog Circuits	3
28	Analog Circuits Lab	1
29	Microcontrollers	3
30	Microcontrollers Lab	1
31	Control Systems	3
32	Control Systems Lab	1
33	Probability Theory and Stochastic Processes	3
34	Probability Theory and Stochastic Processes Lab	1
35	Professional Grooming and Personality Development	1
Total		21
Semester – 5		
S. No.	Name of the Subject	Credits
36	Electromagnetic Waves	3
37	Electromagnetic Waves Lab	1
38	Computer Architecture	3
39	Computer Architecture Lab	1
40	Digital Communication	3
41	Digital Communication Lab	1
42	Simulation Design Techniques	2
43	Professionalism and Corporate Ethics	1
44	Open Elective: 1 (Compulsory Subjects :1)	2
45	PEC 01-LAB (Compulsory Subjects :1)	1
46	PEC 01 (Compulsory Subjects :1)	3
Total		21
Semester - 5 (Open Elective 1)		
1	Cyber Security	2
2	Renewable Energy Sources	2
Semester - 5 (PEC 01)		
1	Power Electronics	3
2	Introduction to MEMS	3
3	Scientific computing	3
4	PLC and SCADA	3
Semester - 5 (PEC 01-LAB)		
1	Power Electronics Lab	1
2	Introduction to MEMS Lab	1
3	Scientific computing Lab	1
4	PLC and SCADA Lab	1
Semester – 6		
S. No.	Name of the Subject	Credits
47	VLSI	3
48	VLSI Lab	1

49	Computer Network	3
50	Computer Network Lab	1
51	Digital Signal Processing	3
52	Digital Signal Processing Lab	1
53	Electronic Measurement Lab	2
54	Electronics Design Lab	1
55	Employability Skills	1
56	Open Elective 02 (Compulsory Subjects :1)	2
57	PEC 02 (Compulsory Subjects :1)	3
58	PEC 02 LAB (Compulsory Subjects :1)	1
Total		22
Semester - 6 (Open Elective 2)		
1	Innovation and Entrepreneurship	2
2	Constitution of India	2
3	Cyber Law and Ethics	2
Semester - 6 (PEC 02)		
1	Nano electronics	3
2	Information Theory and Coding	3
3	Bio Medical Electronics	3
4	Industrial Instrumentation	3
Semester - 6 (PEC 02-LAB)		
1	Nano electronics Lab	1
2	Information Theory and Coding Lab	1
3	Bio Medical Electronics Lab	1
4	Industrial Instrumentation Lab	1
Semester – 7		
S. No.	Name of the Subject	Credits
59	Project-1	5
60	Summer Internship	2
61	Open Elective 03 (Compulsory Subjects :1)	3
62	PEC 03 (Compulsory Subjects :1)	3
63	PEC 03-LAB (Compulsory Subjects :1)	1
64	PEC 04 (Compulsory Subjects :1)	3
65	PEC 04-LAB (Compulsory Subjects :1)	1
66	PEC 05 (Compulsory Subjects :1)	3
67	PEC 05-LAB (Compulsory Subjects :1)	1
Total		22
Semester - 7 (Open Elective 03)		
1	Audio and Video	3
2	Radar and Navigation Systems	3
3	Python for Hardware Programming	3
Semester - 7 (PEC 03)		

1	Adaptive signal processing	3
2	Speech and Audio Processing	3
3	Error Correcting Codes	3
4	Antennas and Propagation	3
Semester - 7 (PEC 03-LAB)		
1	Adaptive Signal Processing Lab	1
2	Speech and Audio Processing Lab	1
3	Error Correcting Codes Lab	1
4	Antennas and Propagation Lab	1
Semester - 7 (PEC 04)		
1	Microwave Theory and Techniques	3
2	Mixed Signal Design	3
3	Mobile Communication Networks	3
Semester - 7 (PEC 04-LAB)		
1	Microwave Theory and Techniques Lab	1
2	Mixed Signal Design Lab	1
3	Mobile Communication Networks Lab	1
Semester - 7 (PEC 05)		
1	Satellite Communication	3
2	Fiber Optic Communications	3
3	Embedded Systems	3
Semester - 7 (PEC 05- LAB)		
1	Satellite Communication Lab	1
2	Fiber Optic Communications Lab	1
3	Embedded Systems Lab	1
Semester – 8		
S. No.	Name of the Subject	Credits
68	Project-II	5
69	PEC 06 (Compulsory Subjects :1)	3
70	PEC 06-LAB (Compulsory Subjects :1)	3
71	PEC 07 (Compulsory Subjects :1)	3
72	PEC 07-LAB (Compulsory Subjects :1)	1
Total		15
Semester - 8 (PEC 06)		
1	Digital Image and Video Processing	3
2	Internet of Things	3
3	High Speed Electronics	3
Semester - 8 (PEC 06 LAB)		
1	Digital Image and Video Processing lab	1
2	Internet of things Lab	1
3	High Speed Electronics Lab	1
Semester - 8 (PEC 07)		

1	Wireless Sensor Networks	3
2	Modern Digital Communication Systems	3
3	Artificial Intelligence	3
Semester - 8 (PEC 07 LAB)		
1	Wireless Sensor Network Lab	1
2	Modern Digital Communication Systems Lab	1
3	Artificial Intelligence Lab	1
Grand Total		169

Faculty of Engineering and Technology- PIET		
B Tech in Information Technology		
Semester – 1		
S. No.	Name of the Subject	Credits
1	Programming for Problem Solving	5
2	Computer Peripherals And Software Tools	2
3	Computer Peripherals And Software Tools Laboratory	1
4	Basic Electrical Engineering	5
5	Engineering Graphics	4
6	Mathematics-I	5
7	Communication Skills - 1	2
Total		24
Semester – 2		
S. No.	Name of the Subject	Credits
8	Environmental Science	2
9	Object Oriented Programming with C++	4
10	Object Oriented Programming with C++ Laboratory	1
11	Basic Electronics	4
12	Electronics Workshop	1
13	Mathematics-II	5
14	Engineering Physics	4
15	Communication Skills - 2	2
Total		23
Semester – 3		
S. No.	Name of the Subject	Credits
16	Digital Electronics	3
17	Digital Electronics Laboratory	1
18	Data Structure and Algorithms	3
19	Data Structure and Algorithms Laboratory	1
20	Product Realization	1
21	Python Programming	2
22	Python Programming Laboratory	1
23	Database Management System	3
24	Database Management System Laboratory	1
25	Discrete Mathematics	4
26	Professional Communication Skills	2
Total		22

Semester – 4		
S. No.	Name of the Subject	Credits
27	Operating system	3
28	Operating System Laboratory	1
29	Computer Networks	3
30	Computer Networks laboratory	1
31	Java Programming	3
32	Java Programming Laboratory	1
33	Computer Organization and Architecture	3
34	Computer Organization and Architecture Laboratory	1
35	Probability, Statistics and Numerical Methods	4
36	Professional Grooming and Personality Development	1
Total		21
Semester – 5		
S. No.	Name of the Subject	Credits
37	Design and Analysis of Algorithms	3
38	Design and Analysis of Algorithms Laboratory	1
39	Theory of Computation	3
40	Software Engineering and Project Management	3
41	Software Engineering and Project Management Laboratory	1
42	Enterprise Programming	2
43	Enterprise Programming Laboratory	1
44	Professionalism and Corporate Ethics	1
45	VQR (Verbal, Quant, Reasoning)	3
46	Open Elective 01	2
Total		20
Semester - 5 (Open Elective 1)		
1	Basic Aircraft Science	2
2	Cyber Security	2
3	Fundamentals of Communication Engineering	2
4	Internet of Things	2
5	Renewable Energy Sources	2
6	Energy Science and Engineering	2
7	Disaster Preparedness and Planning	2
8	Azure Fundamentals	2
Semester – 6		
S. No.	Name of the Subject	Credits
47	Project 1	3
48	Data Mining and Data Visualization	3
49	Data Mining and Data Visualization Laboratory	1
50	Artificial Intelligence	3

51	Artificial Intelligence Laboratory	1
52	MEA(R)N Stack web Development	3
53	MEA(R)N Stack web Development Laboratory	1
54	PEC 01	3
55	PEC 01 - Laboratory	1
56	PEC 01	3
57	PEC 01 - Laboratory	1
58	Employability Skills	1
Total		24
Semester - 6 (PEC 01)		
1	Cyber Security	3
2	Cloud Computing	3
3	Data Science	3
Semester - 6 (PEC 01 LAB)		
1	Cyber Security Laboratory	1
2	Cloud Computing Laboratory	1
3	Data Science Laboratory	1
Semester - 6 (PEC 02)		
1	Mobile Computing	3
2	Computer Graphics and Visualization	3
3	Web Development and Framework	3
Semester - 6 (PEC 02 LAB)		
1	Mobile Computing Laboratory	1
2	Computer Graphics and Visualization Laboratory	1
3	web development and Framework Laboratory	1
Semester - 7		
S. No.	Name of the Subject	Credits
59	Information and Network security	3
60	Information and Network security Laboratory	1
61	Project II	6
62	Summer Internship*	2
63	Applied Machine Learning	3
64	Applied Machine Learning Laboratory	1
65	Open Elective 02	3
66	PEC 03	3
67	PEC 03- Laboratory	1
68	PEC 04	3
69	PEC 04- Laboratory	1
Total		27
Semester - 7 (Open Elective 2)		
1	Remote Sensing and Geo Informatics	3
2	Real Time Systems	3

3	Cyber Physical Systems	3
4	Computational Number Theory	3
5	VLSI System Design	3
Semester - 7 (PEC 03)		
1	Blockchain	3
2	Augmented and Virtual Reality	3
3	Computer Vision	3
Semester - 7 (PEC 03-LAB)		
1	Blockchain Laboratory	1
2	Augmented and Virtual Reality Laboratory	1
3	Computer Vision Laboratory	1
Semester - 7 (PEC 04)		
1	Big Data Analytics	3
2	Wireless Sensor Network	3
3	Natural Language Processing	3
Semester - 7 (PEC 04-LAB)		
1	Big Data Analytics Laboratory	1
2	Wireless Sensor Network Laboratory	1
3	Natural Language Processing Laboratory	1
Semester – 8		
S. No.	Name of the Subject	Credits
70	Industry Internship	14
Total		14
Grand Total		175

Faculty of Engineering and Technology – PIET		
B. Tech in Mechanical Engineering		
Semester – 1		
S. No.	Name of the Subject	Credits
1	Mathematics – I	5
2	Elements of Mechanical Engineering	4
3	Elements of Civil Engineering	4
4	Fundamentals of Programming	4
5	Engineering Physics	4
6	Communication Skills - I	2
Total		23
Semester – 2		
S. No.	Name of the Subject	Credits
7	Mathematics – II	5
8	Environmental Science	2
9	Engineering Graphics	4
10	Basic Electrical Engineering	4
11	Mechanics of Solids	4
12	Workshop	2
13	Communication Skills - II	2
Total		23
Semester – 3		
S. No.	Name of the Subject	Credits
14	Thermodynamics	4
15	Materials Engineering	4
16	Manufacturing Processes	4
17	Kinematics and Theory of Machines	4
18	Product Realization	1
19	PDE, Probability and Statistics	4
20	Professional Communication Skills`	2
Total		23
Semester – 4		
S. No.	Name of the Subject	Credits
21	Metrology and Instrumentation	4
22	Fluid Mechanics and Machines	4
23	Manufacturing Technology	4

24	Strength of Materials	4
25	Dynamics of Machines	4
26	Professional Grooming and Personality Development	1
Total		21
Semester – 5		
S. No.	Name of the Subject	Credits
27	Heat Transfer	4
28	Automation and Control	4
29	Applied Thermodynamics	4
30	Industrial Engineering and Project Management	3
31	Machine Design - I	4
32	Professionalism and Corporate Ethics	1
33	Open Elective – I (Institute Elective)	2
Total		22
1	Basic Aircraft Science	2
2	Disaster Preparedness and Planning	2
3	Cyber Security	2
4	Energy Science and Engineering	2
5	Internet of Things	2
6	Renewable Energy Sources	2
7	Fundamentals of Communication Engineering	2
8	Drone Technology	2
9	Microprocessor	2
Semester – 6		
S. No.	Name of the Subject	Credits
34	Computer Aided Design	4
35	Machine Design - II	4
36	Minor Project	1
37	PEC 01	4
38	PEC 02	4
39	Open Elective 02 (University Elective)	2
40	Employability Skills	1
Total		20
Semester – 6 (PEC 01)		
1	Internal Combustion Engine	4
2	Advanced Manufacturing Technology	4
3	Oil, Hydraulic and Pneumatic	4
Semester – 6 (PEC 01)		
1	Power Plant Engineering	4
2	Product Development and Value Engineering	4
3	Quality Management Techniques	4

Semester – 6 (Open Elective 02)		
1	Fundamentals of Management	2
2	Corporate Social Responsibility	2
3	Innovation and Entrepreneurship	2
4	Constitution of India	2
5	Cyber Law and Ethics	2
6	Engineering Ergonomics	2
Semester – 7		
S. No.	Name of the Subject	Credits
41	Computer Aided Manufacturing	4
42	Finite Element Methods	4
43	Project – I	4
44	Summer Internship	2
45	PEC 03	4
46	PEC 04	4
47	Open Elective 03	3
Total		25
Semester – 7 (PEC 03)		
1	Refrigeration and Air Conditioning	4
2	Tool Design	4
3	Automobile Engineering	4
Semester – 7 (PEC 04)		
1	Renewable Energy Engineering	4
2	Tribology	4
3	Industrial Robotics	4
Semester – 7 (Open Elective 03)		
1	Nano Materials and Surface Engineering	3
2	Industry 4.0	3
3	Waste to Energy Conversion	3
4	Electric Vehicles	3
5	Operation Research	3
6	Industrial Safety and Maintenance Engineering	3
Semester – 8		
S. No.	Name of the Subject	Credits
48	Industrial Training/Project – II	14
Total		14
Grand Total		

Faculty of Engineering and Technology – PIT		
B. Tech Automobile Engineering		
Semester – 1		
S. No.	Name of the Subject	Credits
1	Elements of Civil Engineering	4
2	Mechanics of Solids	4
3	Fundamental of Programming	4
4	Engineering Graphics	4
5	Mathematics-I	5
6	Communication Skills - 1	2
Total		23
Semester – 2		
S. No.	Name of the Subject	Credits
7	Workshop	2
8	Environmental Science	2
9	Basic Electrical Engineering	5
10	Elements of Mechanical Engineering	4
11	Mathematics-II	5
12	Engineering Physics	4
13	Communication Skills - 2	2
Total		24
Semester – 3		
S. No.	Name of the Subject	Credits
14	Product Realization	1
15	Thermodynamics	4
16	Material Engineering	3
17	Material Engineering Lab	1
18	Manufacturing Processes	3
19	Manufacturing Processes Lab	1
20	Kinematics and Theory of Machines	3
21	Kinematics and Theory of Machines Lab	1
22	PDE, Probability and Statistics	4
23	Professional Communication Skills	2
Total		23
Semester – 4		
S. No.	Name of the Subject	Credits
24	Vehicle Structural Engineering	2

25	Metrology and Instrumentation	3
26	Metrology and Instrumentation Lab	1
27	Fluid Mechanics and Machines	3
28	Fluid Mechanics and Machines Lab	1
29	Manufacturing Technology	3
30	Manufacturing Technology Lab	1
31	Strength of Materials	4
32	Professional Grooming and Personality Development	1
Total		19
Semester – 5		
S. No.	Name of the Subject	Credits
33	Automobile Engines	3
34	Automobile Engines Lab	1
35	Automobile Powertrains and Systems	3
36	Automobile Powertrains and Systems Lab	1
37	Electric and Hybrid Vehicles	3
38	Electric and Hybrid Vehicles Lab	1
39	Fundamentals of Heat Transfer	3
40	Fundamentals of Heat Transfer Lab	1
41	Professionalism and Corporate Ethics	1
42	Open Elective 01 (Compulsory Subjects :1)	2
43	PEC 01 (Compulsory Subjects :1)	3
Total		22
Semester - 5 (Open Elective 01)		
1	Basic Aircraft Science	2
2	Disaster Preparedness and Planning	2
3	Cyber Security	2
4	Fundamentals of Communication Engineering	2
5	Internet of Things	2
6	Renewable Energy Sources	2
Semester - 5 (PEC 01)		
1	Optimization Techniques	3
2	Design of Experiments	3
3	Computational Methods	3
Semester – 6		
S. No.	Name of the Subject	Credits
44	Vehicle Operation Management	3
45	Vehicle Operation Management Lab	1
46	Automobile Components Design	4
47	Automotive HVAC	3
48	Automotive HVAC Lab	1
49	Machine Dynamics	3

50	Machine Dynamics Lab	1
51	Project – I	1
52	Employability Skills	1
53	Open Elective 02 (Compulsory Subjects :1)	2
54	PEC 02 (Compulsory Subjects :1)	2
Total		22
Semester - 6 (Open Elective 02)		
1	Life Science	2
2	Biology for Engineers	2
3	Engineering Geology	2
4	Landscape Planning and Design	2
5	Fundamentals of Management	2
6	Corporate Social Responsibility	2
7	Innovation and Entrepreneurship	2
8	Constitution of India	2
9	Cyber Law and Ethics	2
Semester - 6 (PEC 02)		
1	Combustion and Emission Technology	2
2	Technomanagerial Practices and Mobility Engineering	2
3	Vibration and Noise Management	2
4	Automotive Certification and Homologation	2
Semester – 7		
S. No.	Name of the Subject	Credits
55	Vehicle Dynamics	3
56	Vehicle Dynamics Lab	1
57	Summer Internship	2
58	Project-II	6
59	PEC 03 (Compulsory Subjects :1)	2
60	PEC 03-LAB (Compulsory Subjects :1)	1
61	PEC 04 (Compulsory Subjects :1)	3
Total		18
Semester - 7 (PEC 03)		
1	Alternative Fuel and Power System	2
2	Special Purpose Vehicles	2
3	Modern Automotive Control System	2
4	Manufacturing Processes for Automotive Components	2
Semester - 7 (PEC 03-LAB)		
1	Alternative Fuel and Power System Lab	1
2	Special Purpose Vehicles Lab	1
3	Modern Automotive Control System Lab	1
4	Manufacturing Processes for Automotive Components Lab	1
Semester - 7 PEC 04		

1	Vehicle Surveying and Loss Assessment	3
2	Nanostructures and Nanomaterials	3
3	Waste and Energy Management	3
4	Tribology in Vehicle Design	3
5	Industry 4.0 Technologies for Automobile	3
Semester 8		
S. No.	Name of Subject	Credits
62	Project – III	6
63	Automobile System Design	4
64	Transport Management and Laws	2
65	PEC 05 (Compulsory Subjects :1)	3
Total		15
Semester - 8 (PEC 05)		
1	Operations Research in Automotive Industries	3
2	Product Life Cycle Management	3
3	Automotive Product Design and Manufacturing	3
4	Industrial Engineering, Safety and Quality Management	3
Grant Total		166

Faculty of Engineering and Technology – PIT		
B.Tech in Biotechnology		
Semester – 1		
S. No.	Name of the Subject	Credits
1	Fundamental of Programming	4
2	Electronics Workshop	1
3	Elements of Mechanical Engineering	4
4	Biology	3
5	Basics of Biotechnology	3
6	Mathematics-I	5
7	Communication Skills – 1	2
Total		22
Semester – 2		
S. No.	Name of the Subject	Credits
8	Environmental Science	2
9	Engineering Graphics	4
10	Chemistry	4
11	Biophysics	4
12	Fundamentals of Electrical and Electronics Engineering	4
13	Cell Biology	2
14	Mathematics-II	5
15	Communication Skills – 2	2
Total		27
Semester – 3		
S. No.	Name of the Subject	Credits
16	Genetics and Molecular Biology	3
17	Genetics and Molecular Biology Lab	1
18	Basics of Microbiology	3
19	Basics of Microbiology Lab	1
20	Biochemistry	3
21	Biochemistry Lab	1
22	Chemical Process Calculations	3
23	Introduction to Python Programming	2
24	Introduction to Python Programming Lab	1
25	Product Realization	1
26	Professional Communication Skills	2

Total		21
Semester – 4		
S. No.	Name of the Subject	Credits
27	Immunology and Immunotechnology	3
28	Immunology and Immunotechnology Lab	1
29	Techniques in Biotechnology	3
30	Techniques in Biotechnology Lab	1
31	Enzymology and Enzyme Technology	3
32	Enzymology and Enzyme Technology Lab	1
33	Heat and Mass Transfer	3
34	Biostatistics	4
35	Professional Grooming and Personality Development	1
Total		20
Semester – 5		
S. No.	Name of the Subject	Credits
36	Bioinformatics and Computational Biology	3
37	Bioinformatics and Computational Biology Lab	1
38	Metabolic Engineering	2
39	Animal Biotechnology	2
40	Genetic Engineering	3
41	Genetic Engineering Lab	1
42	Industrial Biotechnology	2
43	Industrial Biotechnology Lab	1
44	Summer Internship – I	2
45	Professionalism and Corporate Ethics	1
46	Open Elective 01 (Compulsory Subjects :1)	2
47	PEC 01 (Compulsory Subjects :1)	3
Total		23
Semester – 5 (Open Elective 01)		
1	Basic Aircraft Science	2
2	Disaster Preparedness and Planning	2
3	Cyber Security	2
4	Fundamentals of Communication Engineering	2
5	Internet of Things	2
6	Renewable Energy Sources	2
Semester – 5 (PEC 01)		
1	Pharmaceutical Biotechnology	3
2	Nanobiotechnology	3
3	Biofuels and Alcohol Technology	3
Semester – 6		
S. No.	Name of the Subject	Credits
48	Plant Biotechnology	3
49	Plant Biotechnology Lab	1

50	Bioprocess Engineering	4
51	Bioprocess Engineering Lab	1
52	Food Biotechnology	3
53	Food Biotechnology Lab	1
54	Mini Project	1
55	Employability Skills	1
56	Open Elective 02 (Compulsory Subjects :1)	2
57	PEC 02 (Compulsory Subjects :1)	3
Total		20
Semester – 6 (Open Elective 02)		
1	Life Science	2
2	Engineering Geology	2
3	Landscape Planning and Design	2
4	Fundamentals of Management	2
5	Corporate Social Responsibility	2
6	Innovation and Entrepreneurship	2
7	Constitution of India	2
8	Cyber Law and Ethics	2
Semester – 6 (PEC 02)		
1	3-D Printing	3
2	Virology	3
3	Cancer Biology	3
Semester – 7		
S. No.	Name of the Subject	Credits
58	Environmental Biotechnology	3
59	Environmental Biotechnology Lab	1
60	Bioseparation and Downstream Processing	3
61	Bioseparation and Downstream Processing Lab	1
62	Biosafety, Bioethics, IPR and Patents	3
63	Project- I	6
64	Summer Internship - II	2
65	PEC 03 (Compulsory Subjects :1)	3
Total		22
Semester – 7 (PEC 03)		
1	Tissue Engineering	3
2	Genomics and Proteomics	3
3	Quality Control and Regulatory Affairs	3
Semester – 8		
S. No.	Name of the Subject	Credits
66	Protein Engineering	3
67	Project-II	6
68	PEC 04 (Compulsory Subjects :1)	3
Total		12
Semester – 8 (PEC 04)		
1	Stem Cell Technology	3
2	Agriculture Biotechnology	3
3	Biomaterials	3
Grand Total		167

Faculty of Engineering and Technology - PIT		
B. Tech in Chemical Engineering		
Semester - 1		
S. No.	Name of the Subject	Credits
1	Workshop	2
2	Chemistry	4
3	Elements of Civil Engineering	4
4	Environmental Science	2
5	Engineering Graphics	4
6	Mathematics-I	5
7	Communication Skills - 1	2
Total		23
Semester - 2		
S. No.	Name of the Subject	Credits
8	Mechanics of Solids	4
9	Fundamental of Programming	4
10	Basic Electrical Engineering	5
11	Elements of Mechanical Engineering	4
12	Mathematics-II	5
13	Communication Skills - 2	2
Total		24
Semester - 3		
S. No.	Name of the Subjects	Credits
14	Chemistry-II	3
15	Chemistry-II Lab	1
16	Particle and Fluid Particle Processing	3
17	Particle and Fluid Particle Processing Lab	1
18	Material and Energy Balance Computations	4
19	Fluid Mechanics Lab	1

20	Fluid Mechanics	4
21	Product Realization	1
22	Complex Variables and PDE	4
23	Professional Communication Skills	2
Total		24
Semester- 4		
S. No.	Name of the Subjects	Credits
24	Heat Transfer	4
25	Heat Transfer Lab	1
26	Mass Transfer-I	3
27	Mass Transfer-I Lab	1
28	Numerical Methods in Chemical Engineering	3
29	Numerical Methods in Chemical Engineering Lab	1
30	Thermodynamics-I	4
31	Material Science	3
32	Professional Grooming and Personality Development	1
Total		21
Semester- 5		
S. No.	Name of the Subjects	Credits
33	Mass Transfer -II	3
34	Mass Transfer-II Lab	1
35	Chemical Reaction Engineering-I	3
36	Chemical Reaction Engineering-I Lab	1
37	Thermodynamics-II	4
38	Professionalism and Corporate Ethics	1
39	Open Elective 1 (Compulsory Subjects :1)	2
40	PEC 01 (Compulsory Subjects :1)	3
Total		18
Semester - 5 (Open Elective 1)		
1	Basic Aircraft Science	2
2	Disaster Preparedness and Planning	2
3	Cyber Security	2
4	Fundamentals of Communication Engineering	2
5	Internet of Things	2
6	Renewable Energy Sources	2
Semester - 5 (PEC 01)		
1	Sustainability Engineering	3
2	Renewable Energy	3
3	Water Conservation and Management	3
Semester - 6		
S. No.	Name of the Subjects	Credits

41	Chemical Process Industries	3
42	Chemical Reaction Engineering- II	3
43	Chemical Reaction Engineering- II Lab	1
44	Process Equipment Design	4
45	Process Equipment Design Lab	1
46	Employability Skills	1
47	Open Elective-2	2
48	PEC 02 (Compulsory Subjects :1)	3
Total		18
Semester 6 (Open Elective 2)		
1	Life Science	2
2	Biology for Engineers	2
3	Engineering Geology	2
4	Landscape Planning and Design	2
5	Fundamentals of Management	2
6	Corporate Social Responsibility	2
7	Innovation and Entrepreneurship	2
8	Constitution of India	2
9	Cyber Law and Ethics	2
Semester - 6 (PEC 02)		
1	Nano science and Nanotechnology	3
2	Separation Process	3
3	Biochemical Engineering	3
Semester - 7		
S. No.	Name of the Subjects	Credits
49	Design and Simulation	3
50	Design and Simulation Lab	1
51	Instrumentation and Process Control	4
52	Instrumentation and Process Control Lab	1
53	Transport Phenomena	4
54	Summer Internship	2
55	Project-I	6
56	PEC 03 (Compulsory Subjects :1)	3
Total		24
Semester - 7 (PEC 03)		
1	Optimization Method	3
2	Interfacial Engineering	3
3	Environmental Engineering and Pollution Control	3
Semester - 8		
S. No.	Name of the Subjects	Credits
57	Project II	8
58	Process Synthesis	3

59	Chemical Engineering Plant Design and Economics	3
60	PEC 04 (Compulsory Subjects :1)	3
Total		17
Semester - 8 (PEC 04)		
1	Petrochemical Technology	3
2	Polymer Science and Engineering	3
3	Process Integration	3
4	Chemical Process Safety and Management	3
Grand Total		169

Faculty of Engineering and Technology - PIT		
B. Tech in Fire and Safety Engineering		
Semester - 1		
S. No.	Name of the Subject	Credits
1	Workshop	2
2	Chemistry	4
3	Elements of Civil Engineering	4
4	Environmental Science	2
5	Engineering Graphics	4
6	Mathematics-I	5
7	Communication Skills - 1	2
Total		23
Semester - 2		
S. No.	Name of the Subject	Credits
8	Mechanics of Solids	4
9	Fundamental of Programming	4
10	Basic Electrical Engineering	5
11	Elements of Mechanical Engineering	4
12	Mathematics-II	5
13	Communication Skills - 2	2
Total		24
Semester - 3		
S. No.	Name of the Subjects	Credits
14	First Aid and Emergency Procedures	3
15	Chemical Engineering - I (Thermodynamics and Measuring Analytical Instruments)	3
16	Chemical Engineering - I (Thermodynamics and Measuring Analytical Instruments) Lab	1
17	Principles of Safety	3
18	Elements of Machine Drawing	3
19	Fluid Mechanics and Fluid Flow-	3
20	Fluid Mechanics and Fluid Flow Lab	1
21	Product Realization	1
22	Complex Variables and PDE	4
23	Professional Communication Skills	2
Total		24
Semester - 4		
S. No.	Name of the Subjects	Credits

24	Strength of Materials	3
25	Strength of Materials Lab	1
26	Chemical Engineering II (Unit Operations)	3
27	Chemical Engineering II (Unit Operations) Lab	1
28	Applied Numerical Methods	3
29	Applied Numerical Methods Lab	1
30	Fire Engineering – I (Basic Concepts)	3
31	Electrical Technology and Safety in Electrical Systems	3
32	Electrical Technology and Safety in Electrical Systems lab	1
33	Material Testing Lab	1
34	Professional Grooming and Personality Development	1
Total		21
Semester - 5		
S. No.	Name of the Subjects	Credits
35	Principles of Design Engineering	3
36	Safety in Construction	3
37	Fire Engineering II (Equipment)	3
38	Chemical Engineering III (Process Technology)	3
39	Occupational Health and Hygiene Management	3
40	Fire Ground Operation - I	1
41	Professionalism and Corporate Ethics	1
42	Open Elective 1 (Compulsory Subjects:1)	2
43	PEC 01 (Compulsory Subjects :1)	3
Total		22
Semester - 5 (Open Elective 1)		
1	Basic Aircraft Science	2
2	Disaster Preparedness and Planning	2
3	Cyber Security	2
4	Fundamentals of Communication Engineering	2
5	Internet of Things	2
6	Renewable Energy Sources	2
Semester - 5 (PEC 01)		
1	Special Hazard and Protection	3
2	Fire Codes and Standard	3
Semester - 6		
S. No.	Name of the Subjects	Credits
44	Process Instrumentation and Control Engineering	3
45	Process Instrumentation and Control Engineering Lab	1
46	Legal Aspects of Safety, Health and Environment	3
47	Fire Engineering III (Materials and Fire Control)	4
48	Environmental Engineering and Management	3

49	Environmental Engineering and Management lab	1
50	Chemical Process Safety	3
51	Employability Skills	1
52	Open Elective 2 (Compulsory Subjects :1)	2
53	PEC 02 (Compulsory Subjects :1)	3
Total		24
Semester - 6 (Open Elective 2)		
1	Life Science	2
2	Engineering Geology	2
3	Landscape Planning and Design	2
4	Fundamentals of Management	2
5	Corporate Social Responsibility	2
6	Innovation and Entrepreneurship	2
7	Constitution of India	2
8	Cyber Law and Ethics	2
9	Biology for Engineers	2
Semester - 6 (PEC 02)		
1	Design and Installation of Detection and fire Fighting	3
2	Chemical Process Safety	3
Semester - 7		
S.No.	Name of the Subjects	Credits
54	Fire and Arson Investigation	3
55	Fire Risk Assessment	3
56	Special Hazards	3
57	Fixed Fire Fighting Installations Laboratory	1
58	Fire ground operation-II	1
59	Summer Internship	2
60	Project-I	6
61	PEC 03 (Compulsory Subjects :1)	3
Total		22
Semester - 7 (PEC 03)		
62	Fire and Life Safety Audit	3
63	Disaster Management	3
64	Fire Propagation Techniques	3
Semester - 8		
S. No.	Name of the Subjects	Credits
65	Project II	12
Total		12
Grand Total		172

Faculty of Engineering and Technology - PIT		
B. Tech in Mechatronics Engineering		
Semester - 1		
S. No.	Name of the Subject	Credits
1	Fundamental of Programming	4
2	Basic Electrical Engineering	5
3	Elements of Mechanical Engineering	4
4	Mathematics-I	5
5	Engineering Physics	4
6	Communication Skills - 1	2
Total		24
Semester - 2		
S. No.	Name of the Subject	Credits
7	Workshop	2
8	Mechanics of Solids	4
9	Environmental Science	2
10	Basic Electronics	4
11	Engineering Graphics	4
12	Mathematics-II	5
13	Communication Skills - 2	2
Total		23
Semester - 3		

S. No.	Name of the Subject	Credits
14	Electrical Machines	3
15	Electrical Machines Lab	1
16	Digital System Design	3
17	Digital System Design Lab	1
18	Simulation and Design Tools	1
19	Control Theory	3
20	Control Theory Lab	1
21	Engineering Thermodynamics	4
22	Product Realization	1
23	Complex Variables and PDE	4
24	Professional Communication Skills	2
Total		24
Semester - 4		
S. No.	Name of the Subject	Credits
25	Engineering Materials and Metallurgy	3
26	Engineering Materials and Metallurgy Lab	1
27	Theory of Machine for Mechatronics	2
28	Theory of Machine for Mechatronics Lab	1
29	Microprocessor and Microcontroller with its Interfacing	3
30	Microprocessor and Microcontroller with its Interfacing Lab	1
31	Basics of Signal and Systems	3
32	Basics of Signal and Systems Lab	1
33	Engineering Drafting Lab	1
34	Probability, Statistics and Numerical Methods	4

35	Professional Grooming and Personality Development	1
Total		21
Semester - 5		
S. No.	Name of the Subject	Credits
36	Sensors and Transducers	3
37	Sensors and Transducers Lab	1
38	Manufacturing Process	3
39	Manufacturing Process Lab	1
40	Kinematics and Dynamics of Machines	3
41	Kinematics and Dynamics of Machines Lab	1
42	Integrated Circuits and Applications	3
43	Integrated Circuits and Applications Lab	1
44	Professionalism and Corporate Ethics	1
45	Open Elective (Compulsory Subjects :1)	2
46	PEC 01-LAB (Compulsory Subjects :1)	1
47	PEC 01 (Compulsory Subjects :1)	3
Total		23
Semester - 5 (Open Elective 1)		
1	Basic Aircraft Science	2
2	Disaster Preparedness and Planning	2
3	Cyber Security	2
4	Fundamentals of Communication Engineering	2
5	Internet of Things	2
6	Renewable Energy Sources	2
Semester - 5 (PEC 01)		
1	Operation Research	3

2	Automobile Engineering	3
3	Power Electronics	3
Semester - 5 (PEC 01 LAB)		
1	Operation Research Lab	1
2	Automobile Engineering Lab	1
3	Power Electronics Lab	1
Semester - 6		
S. No.	Name of the Subject	Credits
48	Mini Project	1
49	Industrial Automation	3
50	Industrial Automation Lab	1
51	Manufacturing Process II	3
52	Manufacturing Process - II Lab	1
53	Computer Aided Design and Analysis	3
54	Computer Aided Design and Analysis Lab	1
55	Hydraulic and Pneumatic Systems	3
56	Hydraulic and Pneumatic Systems Lab	1
57	Employability Skills	1
58	Open Elective 02 (Compulsory Subjects :1)	2
59	PEC 02 (Compulsory Subjects :1)	3
60	PEC 02-LAB (Compulsory Subjects :1)	1
Total		24
Semester - 6 (Open Elective 2)		
1	Life Science	2
2	Biology for Engineers	2
3	Engineering Geology	2

4	Landscape Planning and Design	2
5	Fundamentals of Management	2
6	Corporate Social Responsibility	2
7	Innovation and Entrepreneurship	2
8	Constitution of India	2
9	Cyber Law and Ethics	2
Semester - 6 (PEC 02)		
1	Industrial Engineering	3
2	Advanced Micro-Computing Systems	3
3	Mechanical Component Design	3
Semester - 6 (PEC 02 LAB)		
1	Industrial Engineering Lab	1
2	Advanced Micro-Computing Systems Lab	1
3	Mechanical Component Design Lab	1
Semester - 7		
S. No.	Name of the Subject	Credits
61	Advanced Manufacturing System	3
62	Advanced Manufacturing System Lab	1
63	Project-I	6
64	Autotronics	3
65	Autotronics Lab	1
66	Summer Internship	2
67	PEC 03 (Compulsory Subjects :1)	3
68	PEC 03-LAB (Compulsory Subjects :1)	1
Total		20

Semester - 7 (PEC 03)		
1	Advanced Control System	3
2	Finite Element Analysis	3
3	MEMS and Nanotechnology	3
Semester - 7 (PEC 03 LAB)		
1	Advanced Control System Lab	1
2	Finite Element Analysis Lab	1
3	MEMS and Nanotechnology Lab	1
Semester - 8		
S. No.	Name of the Subject	Credits
69	Robotics and Artificial Intelligence	3
70	Robotics and Artificial Intelligence Lab	1
71	Project-II	6
72	Mechatronics Maintenance and Software Lab	1
73	PEC 04 (Compulsory Subjects :1)	3
74	PEC 04-LAB (Compulsory Subjects :1)	1
Total		15
Semester - 8 (PEC 04)		
1	Vision Systems and Image Processing	3
2	Internet of Things	3
3	Smart Farming and Agriculture Automation	3
Semester - 8 (PEC 04 LAB)		
1	Vision Systems and Image Processing Lab	1
2	Internet of Things Lab	1
3	Smart Farming and Agriculture Automation Lab	1
Grand Total		174

Faculty of Engineering and Technology - PIT		
B.Tech in Petroleum Engineering		
Semester - 1		
S. No.	Name of the Subject	Credits
1	Elements of Civil Engineering	4
2	Fundamentals of Programming	4
3	Elements of Mechanical Engineering	4
4	Mathematics – I	5
5	Engineering Physics	4
6	Communication Skills - 1	2
Total		23
Semester - 2		
S. No.	Name of the Subject	Credits
7	Workshop	2
8	Environmental Science	2
9	Basic Electrical Engineering	5
10	Engineering Graphics	4
11	Chemistry	4
12	Mathematics-II	5
13	Communication Skills - 2	2
Total		24
Semester - 3		
S. No.	Name of the Subject	Credits
14	Introduction to Petroleum Geology	3
15	Drilling Engineering-1 Lab	1

16	Drilling Engineering-1	4
17	Fluid Flow Operations Lab	1
18	Fluid Flow Operations	3
19	Petroleum Exploration	3
20	Thermodynamics	4
21	Product Realization	1
22	Complex Variables and PDE	4
23	Professional Communication Skills	2
Total		26
Semester - 4		
S. No.	Name of the Subject	Credits
24	Heat and Mass Transfer	3
25	Heat and Mass Transfer laboratory	1
26	Drilling Engineering-II	3
27	Elements of Reservoir Engineering	4
28	Elements of Reservoir Engineering lab	1
29	Production Operations-1	3
30	Probability, Statistics and Numerical Methods	4
31	Professional Grooming and Personality Development	1
Total		20
Semester - 5		
S. No.	Name of the Subject	Credits
32	Applied Petroleum Reservoir Engineering	4
33	Petroleum Geochemistry Lab	1
34	Petroleum Geochemistry	3
35	Offshore Engineering	3
36	Natural Gas Engineering	2
37	Professionalism and Corporate Ethics	1
38	Open Elective 01 (Compulsory Subjects :1)	2
39	PEC 01 (Compulsory Subjects:1)	3
Total		19
Semester - 5 (Open Elective 01)		
1	Basic Aircraft Science	2
2	Disaster Preparedness and Planning	2
3	Cyber Security	2
4	Fundamentals of Communication Engineering	2
5	Internet of Things	2
6	Renewable Energy Sources	2
Semester - 5 (PEC 01)		
1	Oil and Gas Field Development and Planning	3
2	Sedimentary and Petroleum Geology	3
3	Petroleum Economics	3

Semester - 6		
S. No.	Name of the Subject	Credits
40	Surface Production Operations	3
41	Formation Evaluation	3
42	Oil and Gas Well Testing	3
43	Oil and Gas Well Testing Lab	1
44	Pump and Compressor	2
45	Employability Skills	1
46	Open Elective 02 (Compulsory Subjects :1)	2
47	PEC 02 (Compulsory Subjects:1)	3
Total		18
Semester - 6 (Open Elective 02)		
1	Life Science	2
2	Biology for Engineers	2
3	Engineering Geology	2
4	Landscape Planning and Design	2
5	Fundamentals of Management	2
6	Corporate Social Responsibility	2
7	Innovation and Entrepreneurship	2
8	Constitution of India	2
9	Cyber Law and Ethics	2
Semester - 6 (PEC 02)		
1	Energy Technology and Engineering	3
2	Renewable Energy	3
3	Biomass Conversion and Utilization	3
Semester - 7		
S. No.	Name of the Subject	Credits
48	Enhanced Oil Recovery Techniques	3
49	Project-I	6
50	Industrial training/Internship	2
51	Reservoir Modelling and Simulation	2
52	Reservoir Modelling and Simulation lab	1
53	Petroleum Engineering Design	3
54	PEC 03 (Compulsory Subjects:1)	3
Total		20
Semester - 7 (PEC 03)		
1	Pipeline Engineering	3
2	Well Performance and Intervention	3
3	Advanced Drilling Technology	3
Semester - 8		
S. No.	Name of the Subject	Credits
55	Unconventional Energy Resources	3

56	Project-II	6
57	Health, Safety and Environment in Petroleum Industry	3
58	Advanced Production Technologies	3
59	PEC 04 (Compulsory Subjects:1)	3
Total		18
Semester - 8 (PEC 04)		
1	Hydrocarbon Contracts and Asset Management	3
2	Petroleum Geo-mechanics and Hydraulic Fracturing	3
3	Transportation and Marketing of Petroleum and Petroleum Products	3
Grand Total		168

Faculty of Engineering and Technology - PIT		
B. Tech in Robotics and Automation Engineering		
Semester - 1		
S. No.	Name of the Subject	Credits
1	Fundamental of Programming	4
2	Basic Electrical Engineering	5
3	Engineering Graphics	4
4	Mathematics-I	5
5	Engineering Physics	4
6	Communication Skills - 1	2
Total		24
Semester - 2		
S. No.	Name of the Subject	Credits
7	Workshop	2

8	Mechanics of Solids	4
9	Environmental Science	2
10	Basic Electronics	4
11	Elements of Mechanical Engineering	4
12	Mathematics-II	5
13	Communication Skills - 2	2
Total		23
Semester - 3		
S. No.	Name of the Subject	Credits
14	Electrical Machines	3
15	Electrical Machines Lab	1
16	Digital System Design	3
17	Digital System Design Lab	1
18	Network Theory	3
19	Network Theory Lab	1
20	Control Theory	3
21	Control Theory Lab	1
22	Materials Engineering	3
23	Materials Engineering Lab	1
24	Product Realization	1
25	Professional Communication Skills	2
Total		23
Semester - 4		
S. No.	Name of the Subject	Credits
26	Basics of Signal and Systems	3
27	Basics of Signal and Systems Lab	1

28	Communication Engineering	3
29	Communication Engineering Lab	1
30	Sensors and Transducers	3
31	Sensors and Transducers Lab	1
32	Fundamental of Robotics and Robot Kinematics	4
33	Fundamental of Robotics and Robot Kinematics Lab	1
34	Manufacturing Technology	3
35	Manufacturing Technology Lab	1
36	Professional Grooming and Personality Development	1
Total		22
Semester - 5		
S. No.	Name of the Subject	Credits
37	Python Programming	2
38	Python Programming Lab	1
39	Computer Integrated Manufacturing	3
40	Computer Integrated Manufacturing Lab	1
41	Integrated Circuits and Applications	3
42	Integrated Circuits and Applications Lab	1
43	Microcontrollers and Interfacing for Robotics	3
44	Microcontrollers and Interfacing for Robotics Lab	1
45	Professionalism and Corporate Ethics	1
46	Open Elective (Compulsory Subjects :1)	2
47	PEC 01-LAB (Compulsory Subjects :1)	1
48	PEC 01 (Compulsory Subjects :1)	3
Total		22
Semester - 5 (Open Elective 1)		

1	Basic Aircraft Science	2
2	Disaster Preparedness and Planning	2
3	Cyber Security	2
4	Fundamentals of Communication Engineering	2
5	Internet of Things	2
6	Renewable Energy Sources	2
Semester - 5 (PEC 01)		
1	Computer Aided Design and Analysis	3
2	Operational Research	3
3	Nonconventional Manufacturing Techniques	3
Semester - 5 (PEC 01 LAB)		
1	Computer Aided Design and Analysis Lab	1
2	Operational Research Lab	1
3	Nonconventional Manufacturing Techniques Lab	1
Semester - 6		
S. No.	Name of the Subject	Credits
49	Industrial Automation	3
50	Industrial Automation Lab	1
51	Hydraulic and Pneumatic Systems	3
52	Hydraulic and Pneumatic Systems Lab	1
53	Robot Dynamics and Manipulator Design	3
54	Robot Dynamics and Manipulator Design Lab	1
55	Power Electronics and Drives	3
56	Power Electronics and Drives Lab	1
57	Employability Skills	1
58	Open Elective 02 (Compulsory Subjects :1)	2

59	PEC 02 (Compulsory Subjects :1)	3
60	PEC 02-LAB (Compulsory Subjects :1)	1
Total		23
Semester - 6 (Open Elective 2)		
1	Life Science	2
2	Biology for Engineers	2
3	Engineering Geology	2
4	Landscape Planning and Design	2
5	Fundamentals of Management	2
6	Corporate Social Responsibility	2
7	Innovation and Entrepreneurship	2
8	Constitution of India	2
9	Cyber Law and Ethics	2
Semester - 6 (PEC 02)		
1	VLSI Design	3
2	Real Time Embedded Systems	3
3	Wireless Communication	3
Semester - 6 (PEC 02 LAB)		
1	VLSI Design Lab	1
2	Real Time Embedded Systems Lab	1
3	Wireless Communication Lab	1
Semester - 7		
S. No.	Name of the Subject	Credits
61	Field and Service Robots	3
62	Field and Service Robots Lab	1
63	Project-I	6

64	Autotronics	3
65	Autotronics Lab	1
66	Summer Internship	2
67	PEC 03 (Compulsory Subjects :1)	3
68	PEC 03-LAB (Compulsory Subjects :1)	1
Total		20
Semester - 7 (PEC 03)		
1	Digital Signal Processing and Applications	3
2	Internet of Things	3
3	Industrial Networking	3
Semester - 7 (PEC 03 LAB)		
1	Digital Signal Processing and Applications Lab	1
2	Internet of Things Lab	1
3	Industrial Networking Lab	1
Semester - 8		
S. No.	Name of the Subject	Credits
69	Artificial Intelligence for Robotics	3
70	Artificial Intelligence for Robotics Lab	1
71	Project-II	6
72	PEC 04 (Compulsory Subjects :1)	3
73	PEC 04-LAB (Compulsory Subjects :1)	1
Total		14
Semester - 8 (PEC 04)		
1	Advanced Control Systems	3
2	Optimization in Engineering Design	3
3	Vision Systems and Image Processing	3

	Semester - 8 (PEC 04 LAB)	
1	Advanced Control Systems Lab	1
2	Optimization in Engineering Design Lab	1
3	Vision Systems and Image Processing Lab	1
Grand Total		171