

PARUL UNIVERSITY

R/Notification-1399/2024-25

Office of the Registrar
December 17, 2024

NOTIFICATION

Sub: Course Structure and Syllabus of Semester 5th and 6th for Curriculum 2022-23 for Diploma in Aeronautical Engineering, Automation and Robotics Engineering, Automobile Engineering, Biotechnology, Computer Engineering / Information Technology, Chemical Engineering, Fire & Safety Engineering, Mechatronics Engineering and Petrochemical Engineering Programmes

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 Semester 5th and 6th for Curriculum 2022-23 for Diploma in Aeronautical Engineering, Automation and Robotics Engineering, Automobile Engineering, Biotechnology, Computer Engineering / Information Technology, Chemical Engineering, Fire & Safety Engineering, Mechatronics Engineering and Petrochemical Engineering Programmes 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 Semester 5th and 6th for Curriculum 2022-23 for Diploma in Aeronautical Engineering, Automation and Robotics Engineering, Automobile Engineering, Biotechnology, Computer Engineering / Information Technology, Chemical Engineering, Fire & Safety Engineering, Mechatronics Engineering and Petrochemical Engineering Programmes are enclosed in the Annexure.

Dean, FE & T is informed to arrange to upload syllabus of Semester 5th and 6th for Curriculum 2022-23 for Diploma in Aeronautical Engineering, Automation and Robotics Engineering, Automobile Engineering, Biotechnology, Computer Engineering / Information Technology, Chemical Engineering, Fire & Safety Engineering, Mechatronics Engineering and Petrochemical Engineering Programmes on MIS.

By Order


Registrar

To,

1. Dean, Faculty of Engineering & Technology and Principal, PIET
2. Principal, PIT/PPI/PIET(DS)

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-DS		
Diploma in Aeronautical Engineering		
Semester - 1		
S. No.	Name of the Subject	Credits
1	Environmental Science	0
2	Introduction to IT Systems Lab	2
3	Engineering Graphics	1
4	Engineering Graphics Lab	2
5	Engineering Workshop Practice	2
6	Mathematics-I	3
7	Applied Physics	3
8	Applied Physics Lab	1
9	Communication Skill-I	1
Total		15
Semester - 2		
S. No.	Name of the Subject	Credits
10	Engineering Mechanics	3
11	Engineering Mechanics Lab	1
12	Fundamentals of Mechanical Engineering	3
13	Fundamentals of Electrical and Electronics Engineering	3
14	Fundamentals of Electrical and Electronics Engineering Lab	1
15	Material Science	3
16	Material Science Lab	1
17	Mathematics-II	4
18	Communication Skill - II	1
Total		20
Semester - 3		
S. No.	Name of the Subject	Credits
19	Entrepreneurship and Start-ups	1
20	Introduction to Aeronautics	3
21	Aeromodelling Lab	1
22	Mechanisms for Machines and Aircraft	3
23	Mechanisms for Machines and Aircraft Lab	1
24	Aircraft Materials and Manufacturing	3
25	Aircraft Materials and Manufacturing Lab	1
26	Basic Engineering Thermodynamics	3
27	Aircraft Instruments	3
28	Professional Communication and Critical Thinking	1
Total		20
Semester - 4		

S. No.	Name of the Subject	Credits
29	Essence of Indian Knowledge and Tradition	0
30	Mechanics and Strength of Materials	3
31	Mechanics and Strength of Materials Lab	1
32	Computer Aided Modeling and Design -I	2
33	Computer Aided Modeling and Design -I Lab	2
34	Fundamentals of Fluid Mechanics	3
35	Fundamentals of Fluid Mechanics Lab	1
36	Aircraft Systems	3
37	Basic Avionics	3
38	Minor Project	1
39	Employability Skills	1
Total		20
Semester - 5		
S. No.	Name of the Subject	Credits
40	Aerodynamics	3
41	Aerodynamics Lab	1
42	Aircraft Structures	4
43	Aircraft Structures Lab	1
44	Aerospace Propulsion	3
45	Aerospace Propulsion Lab	1
46	Major Project-I	6
47	Summer Internship	2
48	Open Elective-I	3
49	Program Elective-I	3
Total		27
Semester - 5 (Open Elective 01)		
1	Robotics and Automation Technology	3
2	Metrology and Instrumentation	3
Semester - 5 (Program Elective 01)		
1	Principles of Helicopter Engineering	3
2	Airport Operations and Management	3
Semester - 6		
S. No.	Name of the Subject	Credits
50	Indian Constitution	0
51	Introduction to Flight Mechanics	4
52	Aircraft Maintenance	4
53	Aircraft Maintenance Lab	1
54	Computer Aided Modelling and Design- II	2
55	Computer Aided Modelling and Design- II Lab	2
56	Major Project-II	6

57	Open Elective- II	3
58	Program Elective-II	3
Total		25
Semester - 6 (PEC 02)		
1	Rockets and Missiles Technology	3
2	Lighter than Air Systems	3
Semester - 6 (Open Elective 02)		
1	Principles of Heat Transfer	3
2	Industrial Engineering	3
Grand Total		127

Faculty of Engineering and Technology - PIT-DS		
Diploma in Automation and Robotics Engineering		
Semester - 1		
S. No.	Name of the Subject	Credits
1	Environmental Science	0
2	Engineering Mechanics	3
3	Engineering Mechanics Lab	1
4	Introduction to IT Systems Lab	2
5	Engineering Graphics	1
6	Engineering Graphics Lab	2
7	Mathematics - I	3
8	Basic Physics	3
9	Basic Physics Lab	1
10	Communication Skills - I	1
Total		17
Semester - 2		
S. No.	Name of the Subject	Credits
11	Fundamentals of Mechanical Engineering	3
12	Engineering Workshop Practice	2
13	Basic of Electrical and Electronics Engineering	3
14	Basic of Electrical and Electronics Engineering Lab	1
15	Electrical Machines	3
16	Electrical Machines Lab	1
17	Mathematics-II	4
18	Communication Skills - II	1
Total		18
Semester - 3		
S. No.	Name of the Subject	Credits
19	Entrepreneurship and Start-ups	1
20	Analog and Digital Electronics	3
21	Analog and Digital Electronics Lab	1
22	Material Engineering	3
23	Material Engineering Lab	1
24	Fundamentals of Robotics	3
25	Fundamentals of Robotics Lab	1
26	Fundamentals of Programming	3
27	Fundamentals of Programming Lab	1
28	Measurements and Instrumentation	3

29	Measurements and Instrumentation	1
30	Professional Communication and Critical Thinking	1
Total		22
Semester - 4		
S. No.	Name of the Subject	Credits
31	Essence of Indian Knowledge and Tradition	0
32	Power Electronics	3
33	Power Electronics Lab	1
34	Hydraulic and Pneumatic Systems	3
35	Hydraulic and Pneumatic Systems Lab	1
36	Control Engineering	3
37	Control Engineering Lab	1
38	Manufacturing Process	3
39	Manufacturing Process Lab	1
40	Microprocessor and Microcontroller	3
41	Microprocessor and Microcontroller Lab	1
42	Minor Project	1
43	Employability Skills	1
Total		22
Semester - 5		
S. No.	Name of the Subject	Credits
44	Computer Aided Design and Analysis	3
45	Computer Aided Design and Analysis Lab	1
46	Robot Kinematics	3
47	Robot Kinematics Lab	1
48	Major Project-I	6
49	Summer Internship	2
50	Program Elective - I (Compulsory Subjects :1)	3
51	Program Elective - II (Compulsory Subjects :1)	1
52	Program Elective Lab- I (Compulsory Subjects :1)	3
53	Program Elective Lab- II (Compulsory Subjects :1)	1
Total		24
Semester - 5 (Program Elective 01)		
1	Industrial Automation	3
2	Artificial Intelligence and Machine Learning	3
Semester - 5 (Program Elective 01 LAB)		
1	Industrial Automation Lab	1
2	Artificial Intelligence and Machine Learning Lab	1
Semester - 5 (Program Elective 02)		
1	Industrial Networking	3
2	Python Programming	3

Semester - 5 (Program Elective 02 LAB)		
1	Industrial Networking	1
2	Python Programming Lab	1
Semester - 6		
S. No.	Name of the Subject	Credits
54	Indian Constitution	0
55	Robot Dynamics	3
56	Robot Dynamics Lab	1
57	Signal Processing and Vision Systems	3
58	Signal Processing and Vision Systems Lab	1
59	Major Project-II	6
60	Internet of Things	3
61	Internet of Things Lab	2
62	Program Elective - III (Compulsory Subjects :1)	4
63	Program Elective Lab- III (Compulsory Subjects :1)	1
Total		24
Semester - 6 (Program Elective 03)		
1	Industrial Robotics	4
2	Computer Integrated Manufacturing	4
Semester - 6 (Program Elective 03 LAB)		
1	Industrial Robotics Lab	1
2	Computer Integrated Manufacturing Lab	1
Grand Total		127

Faculty of Engineering and Technology - PIT-DS		
Diploma in Automobile Engineering		
Semester - 1		
S. No.	Name of Subject	Credits
1	Engineering Mechanics	3
2	Engineering Mechanics Lab	1
3	Engineering Graphics	1
4	Engineering Graphics Lab	2
5	Engineering Workshop Practice	2
6	Mathematics – I	3
7	Applied Physics	3
8	Applied Physics Lab	1
9	Communication Skills – I	1
Total		17
Semester - 2		
S. No.	Name of Subject	Credits
10	Environmental Science	0
11	Introduction to IT Systems Lab	2
12	Fundamentals of Electrical and Electronics Engineering	3
13	Fundamentals of Electrical and Electronics Engineering Lab	1
14	Material Science	3
15	Material Science Lab	1
16	Thermodynamics and Hydraulics	4
17	Introduction to CAD	2
18	Mathematics-II	4
19	Communication Skills – II	1
Total		21
Semester - 3		
S. No.	Name of Subject	Credits
20	Entrepreneurship and Start-ups	1
21	Automobile Engines	3
22	Automobile Engines Lab	1
23	Automobile Transmission Mechanism	4
24	Automobile Transmission Mechanism Lab	1
25	Automobile Electrical System	3
26	Automobile Electrical System Lab	1
27	Fuel and Lubricants	3
28	Fuel and Lubricants Lab	1
29	Automobile Component Design	4
30	Professional Communication and Critical Thinking	1
Total		23

Semester - 4		
S. No.	Name of Subject	Credits
31	Essence of Indian Knowledge and Tradition	0
32	Vehicle Structural Engineering	3
33	Vehicle Structural Engineering Lab	1
34	Modern Vehicle Technology	3
35	Modern Vehicle Technology Lab	1
36	Automobile Manufacturing Technology	3
37	Automobile Manufacturing Technology Lab	1
38	Automobile Industrial Management	3
39	Vehicle Kinematics and Dynamics	4
40	Automobile Trade Practice	2
41	Employability Skills	1
Total		22
Semester - 5		
S. No.	Name of Subject	Credits
42	Automobile Engine Diagnosis and Testing	4
43	Automobile Engine Diagnosis and Testing Lab	1
44	Automobile Transmission Mechanism Diagnosis and Testing	3
45	Automobile Transmission Mechanism Diagnosis and Testing Lab	1
46	Auto Electrical System Diagnosis and Testing	3
47	Auto Electrical System Diagnosis and Testing Lab	1
48	Fundamental of Electric Vehicle	3
49	Fundamental of Electric Vehicle Lab	1
50	Motor Vehicle Acts and Loss Assessment	3
51	Human Resource Management for Auto Industry	2
52	Vehicle Garage Practice Lab	1
Total		23
Semester - 6		
S. No.	Name of Subject	Credits
53	Indian Constitution	0
54	Vehicle Air Conditioning Lab	1
55	Automobile Pollution Control Engineering Lab	1
56	Introduction To Special Purpose Vehicle Lab	1
57	Industrial Training	3
58	Vehicle Air Conditioning	5
59	Automobile Pollution Control Engineering	5
60	Introduction To Special Purpose Vehicle	5
Total		21
Grant Total		127

Faculty of Engineering and Technology - PIT-DS		
Diploma in Biotechnology		
Semester - 1		
S. No.	Name of the Subject	Credits
1	Applied Chemistry	3
2	Applied Chemistry Lab	1
3	Environmental Science	0
4	Introduction to IT Systems Lab	2
5	Basics of Biology	2
6	Fluid Mechanics	2
7	Fluid Mechanics Lab	1
8	Mathematics – I	3
9	Basic Physics Lab	1
10	Basic Physics	3
11	Communication Skills – I	1
Total		19
Semester - 2		
S. No.	Name of the Subject	Credits
12	Organic Chemistry	4
13	Organic Chemistry lab	1
14	Engineering Workshop Practice	2
15	Molecular Biology	3
16	Basic of Chemical Engineering Thermodynamics	3
17	Basic Taxonomy in Biology	3
18	Food Microbiology Lab	2
19	Mathematics-II	4
20	Communication Skills -II	1
Total		23
Semester - 3		
S. No.	Name of the Subject	Credits
21	Entrepreneurship and Start-ups	1
22	Chemical Process Calculation	5
23	Life science-I	4
24	Biochemical Energetics	4
25	Biochemical Calculations	4
26	Professional Communication and Critical Thinking	1
Total		19
Semester - 4		
S. No.	Name of the Subject	Credits
27	Essence of Indian Knowledge and Tradition	0
28	Cell Biology	3
29	Analytical Instruments for Biotechnology	3
30	Analytical Instruments for Biotechnology Lab	1
31	Fundamentals of Process Engineering	3
32	Basics of Food Processing	3
33	Basics of Food Processing Lab	1
34	Life Science-II	4
35	Minor Project	1

36	Employability Skills	1
Total		20
Semester - 5		
S. No.	Name of the Subject	Credits
37	Biochemistry	4
38	Biochemistry Lab	1
39	Bioinformatics	4
40	Bioinformatics Lab	1
41	Environmental Biotechnology	3
42	Bioethics, IPR and Biosafety	3
43	Major Project-I	6
44	Summer Internship	2
Total		24
Semester - 6		
S. No.	Name of the Subject	Credits
45	Indian Constitution	0
46	Plant Tissue Culture	4
47	Plant Tissue Culture Lab	1
48	Genetic Engineering	4
49	Genetic Engineering Lab	1
50	Major Project-II	6
51	Program Elective - 01 (Compulsory Subjects :1)	3
52	Program Elective – 02 (Compulsory Subjects :1)	3
Total		22
Semester – 6 (Program Elective 01)		
1	Metabolic Engineering	3
2	Entrepreneurship in Biotechnology	3
Semester – 6 (Program Elective 02)		
1	Biomaterials and Implants	3
2	Genomics and Proteomics	3
Grand Total		127

Faculty of Engineering and Technology – PIET-DS, PPI		
Diploma in Computer Engineering		
Semester - 1		
S. No.	Name of the Subject	Credits
1	Introduction to IT Systems	2
2	Computer Programming	4
3	Mathematics-I	3
4	Fundamentals of Electrical and Electronics Engineering	4
5	Communication Skills	1
6	Environmental Science	0
Total		14
Semester - 2		
S. No.	Name of the Subject	Credits
7	Advanced Computer Programming	4
8	Engineering Graphics Lab	2
9	Scripting Language(Python)	4
10	Basic Physics	4
11	Mathematics-II	4
12	Communication Skills - II	1
13	Electrical Workshop Practice Lab	1
Total		20
Semester - 3		
S. No.	Name of the Subject	Credits
14	Entrepreneurship and Start-ups	1
15	Operating Systems	4
16	Object Oriented Programming with C++	5
17	Data Structure	4
18	Introduction to DBMS	5
19	Professional Communication and Critical Thinking	1
20	Computer Organization and Architecture	4
Total		24
Semester - 4		
S. No.	Name of the Subject	Credits
21	Essence of Indian Knowledge and Tradition	0
22	Computer Networks	3
23	Software Engineering	3
24	Java Programming	5
25	Algorithms	4
26	Dynamic Web Technology	4
27	Minor Project	1

28	Employability Skills	1
29	Open Elective-I	3
Total		24
Semester - 4 (Open Elective 01)		
1	Human Resource Planning	3
2	Renewable Energy Technology	3
Semester - 5		
S. No.	Name of the Subject	Credits
30	Internet of Things	3
31	Advanced Java Programming	5
32	Information Security	4
33	Summer Internship	2
34	Major Project - I	6
35	Program Elective - I	4
Total		24
Semester - 5 (Program Elective 01)		
1	Cloud Computing	4
2	Data Mining	4
Semester - 6		
S. No.	Name of the Subject	Credits
36	Indian Constitution	0
37	Android Programming	4
38	Net Programming with C#	3
39	Major Project - II	6
40	Program Elective - II	4
41	Program Elective - III	4
Total		21
Semester - 6 (Program Elective 02)		
1	Advanced Database Management System	4
2	Advanced Computer Network	4
Semester - 6 (Program Elective 03)		
1	Multimedia Technologies	4
2	Artificial Intelligence and Machine Learning	4
Grand Total		127

Faculty of Engineering and Technology - PPI		
Diploma in Information Technology		
Semester - 1		
S. No.	Name of the Subjects	Credits
1	Electrical Workshop Practice Lab	1
2	Introduction to IT Systems	2
3	Computer Programming	4
4	Mathematics-I	3
5	Basic Physics	4
6	Communication Skills-I	1
7	Engineering Graphics Lab	2
8	Environmental Science	0
Total		17
Semester - 2		
S. No.	Name of the Subjects	Credits
9	Advanced Computer Programming	4
10	Scripting Language(Python)	4
11	Fundamentals of Electrical and Electronics Engineering	4
12	Mathematics-II	4
13	Communication Skills - II	1
Total		17
Semester - 3		
S. No.	Name of the Subjects	Credits
15	Entrepreneurship and Start-ups	1
16	Operating Systems	4
17	Object Oriented Programming with C++	5
18	Data Structure	3
19	Software Development Management	3
20	Professional Communication and Critical Thinking	1
21	Computer Organization and Architecture	4
22	Open Elective-I	3
Total		24
Semester - 3 (Open Elective 01)		
1	Human Resource Planning	3
2	Renewable Energy Technology	3
Semester - 4		
S. No.	Name of the Subjects	Credits
23	Essence of Indian Knowledge and Tradition	0
24	Database Management System	5
25	Data Communication Network	3

26	Core JAVA Programming	5
27	Web Technology with PHP	5
28	Minor Project	1
29	Employability Skills	1
Total		20
Semester - 5		
S. No.	Name of the Subjects	Credits
30	Internet of Things	3
31	Advanced Programing With JAVA	4
32	Computer Graphics and Image Processing	4
33	Summer Internship	2
34	Major Project - I	6
35	Program Elective - I	4
36	Program Elective - II	4
Total		27
Semester - 5 (Program Elective 01)		
1	Cloud Computing	4
2	Data Mining	4
Semester - 5 (Program Elective 02)		
1	Advanced Communication Network	4
2	Advanced Database Management	4
Semester - 6		
S. No.	Name of the Subjects	Credits
37	Indian Constitution	0
38	Cryptography	3
39	ASP.NET Programing	4
40	Android Application Development	5
41	Major Project - II	6
42	Program Elective - III	4
Total		22
Semester - 6 (Program Elective 03)		
1	Artificial Intelligence	4
2	Mobile Computing	4
Grand Total		127

Faculty of Engineering and Technology - PIT DS		
Diploma in Chemical Engineering		
Semester - 1		
S. No.	Name of the Subject	Credits
1	Applied Chemistry	3
2	Applied Chemistry Lab	1
3	Physical Analytical and Inorganic Chemistry Lab	1
4	Physical Analytical And Inorganic Chemistry	3
5	Environmental Science	0
6	Introduction to IT Systems Lab	2
7	Engineering Graphics	1
8	Engineering Graphics Lab	2
9	Mathematics – I	3
10	Communication Skills – I	1
Total		17
Semester - 2		
S. No.	Name of the Subject	Credits
11	Organic Chemistry lab	1
12	Introduction to Chemical Engineering	2
13	Organic Chemistry	4
14	Engineering Workshop Practice	2
15	Mathematics-II	4
16	Applied Physics	3
17	Applied Physics Lab	1
18	Communication Skills – II	1
Total		18
Semester - 3		
S. No.	Name of the Subject	Credits
19	Entrepreneurship and Start-ups	1
20	Mechanical Operations	3
21	Mechanical Operations Lab	1
22	Fluid Flow Operation	3
23	Fluid Flow Operation Lab	1
24	Chemical Process Calculation	4
25	Chemical Engineering Materials	3
26	Chemical Technology –I	3
27	Professional Communication and Critical Thinking	1
Total		20
Semester - 4		
S. No.	Name of the Subject	Credits

28	Essence of Indian Knowledge and Tradition	0
29	Process Heat Transfer	4
30	Process Heat Transfer Lab	1
31	Mass Transfer – I	4
32	Mass Transfer - I Lab	1
33	Pollution Control and Effluent treatment	3
34	Pollution Control and Effluent treatment Lab	1
35	Safety in Chemical Process Industry	3
36	Minor Project	1
37	Chemical Technology -II lab	1
38	Chemical Technology –II	4
39	Employability Skills	1
Total		24
Semester - 5		
S. No.	Name of the Subject	Credits
40	Mass Transfer – II	3
41	Mass Transfer - II Lab	1
42	Petroleum Refining and Petrochemical Technology	3
43	Petroleum Refining and Petrochemical Technology Lab	1
44	Utilities and Instrumentation Control	3
45	Utilities and Instrumentation Control Lab	1
46	Summer Internship	2
47	Major Project – I	4
48	Engineering Thermodynamics	3
49	Program Elective - 2 (Compulsory Subjects :1)	3
Total		24
Semester - 5 (Program Elective 01)		
1	Polymer Science and Compounding	3
2	Polymer Technology	3
Semester - 6		
S. No.	Name of the Subject	Credits
50	Indian Constitution	0
51	Chemical Reaction Engineering Lab	1
52	Chemical Engineering Plant Economics	4
53	Major Project –II	4
54	Chemical Reaction Engineering	5
55	Chemical Engineering Thermodynamics	4
56	Open Elective-1 (Compulsory Subjects :1)	3
57	Program Elective - 2 (Compulsory Subjects :1)	3
Total		24
Semester - 6 (Open Elective 01)		
1	Energy Conservation and Audit	3

2	Industrial Management	3
3	Project Management	3
Semester - 6 (Program Elective 02)		
1	Modern Separation Techniques	3
2	Pharmaceutical Technology	3
3	Rubber Processing Technology and Tyre Manufacturing	3
Grand Total		127

Faculty of Engineering and Technology – PIT DS		
Diploma in Fire and Safety Engineering		
Semester - 1		
S. No.	Name of the Subject	Credits
1	Applied Chemistry	3
2	Applied Chemistry Lab	1
3	Physical Analytical and Inorganic Chemistry	3
4	Physical Analytical and Inorganic Chemistry Lab	1
5	Environmental Science	0
6	Introduction to IT Systems Lab	2
7	Engineering Graphics	1
8	Engineering Graphics Lab	2
9	Mathematics - I	3
10	Communication Skills - I	1
Total		17
Semester - 2		
S. No.	Name of the Subject	Credits
11	Organic Chemistry	4
12	Organic Chemistry lab	1
13	Introduction to Chemical Engineering	2
14	Engineering Workshop Practice	2
15	Mathematics-II	4
16	Applied Physics	3
17	Applied Physics Lab	1
18	Communication Skills - II	1
Total		18
Semester - 3		
S. No.	Name of the Subject	Credits
19	Entrepreneurship and Start-ups	1
20	Fluid Flow Operation Lab	1
21	Process Heat Transfer Lab	1

22	Process Heat Transfer	3
23	Fluid Flow Operation	3
24	Engineering of Materials	3
25	Fire Codes and Standards	1
26	Engineering Thermodynamics	3
27	Fire Ground Operations - I	3
28	Professional Communication and Critical Thinking	1
Total		20
Semester - 4		
S. No.	Name of the Subject	Credits
29	Essence of Indian Knowledge and Tradition	0
30	Fire Service Hydraulics	4
31	Petroleum Refinery Operations	3
32	Fire Suppression Systems	3
33	Fire Dynamics	3
34	Fire Ground Operations – II	3
35	Structural Fire Protection	4
36	Minor Project	1
37	Explosions and Industrial Fire Safety	2
38	Employability Skills	1
Total		24
Semester - 5		
S. No.	Name of the Subject	Credits
39	Design and Installation of Detection and Firefighting System	4
40	Industrial, Rural and Forest Fire Development with its Hazard and Mitigation	3
41	Industrial Health and Hygiene	3
42	Fire Ground Operations – III	2
43	Fire Risk Analysis	4
44	Summer Internship	2
45	Smoke Management and Fire Alarm System	2
46	Major Project-1	4
Total		24
Semester - 6		
S. No.	Name of the Subject	Credits
47	Fire modeling	3
48	Industrial Pollution and Control	2
49	Fire Ground Operation-IV	2
50	Urban Planning	2
51	Hazard identification, assessment and control techniques	3
52	Special Hazards and Protection	2
53	Major Project -II	4

54	Open Elective-I (Compulsory Subjects:1)	3
55	Program Elective - I (Compulsory Subjects:1)	3
Total		24
Semester - 6 (Open Elective 01)		
S. No.	Name of the Subject	Credits
1	Industrial Management	3
2	Project Management	3
3	Energy Conservation and Audit	3
Semester - 6 (Program Elective 01)		
1	Passive Measures for Fire Safety	3
2	Energy Management	3
3	Advanced Fire Dynamics	3
Grand Total		127

Faculty of Engineering and Technology - PIT-DS		
Diploma in Mechatronics Engineering		
Semester - 1		
S. No.	Name of the Subject	Credits
1	Environmental Science	0
2	Engineering Mechanics	3
3	Engineering Mechanics Lab	1
4	Introduction to IT Systems Lab	2
5	Engineering Graphics	1
6	Engineering Graphics Lab	2
7	Mathematics - I	3
8	Basic Physics	3
9	Basic Physics Lab	1
10	Communication Skills - I	1
Total		17
Semester - 2		
S. No.	Name of the Subject	Credits
11	Fundamentals of Mechanical Engineering	3
12	Engineering Workshop Practice	2
13	Basic of Electrical and Electronics Engineering	3
14	Basic of Electrical and Electronics Engineering Lab	1
15	Electrical Machines	3
16	Electrical Machines Lab	1
17	Mathematics-II	4
18	Communication Skills - II	1
Total		18
Semester - 3		

S. No.	Name of the Subject	Credits
19	Entrepreneurship and Start-ups	1
20	Fundamentals of Programming	3
21	Fundamentals of Programming Lab	1
22	Material Science and Metallurgy	3
23	Material Science and Metallurgy Lab	1
24	Analog and Digital Electronics	4
25	Analog and Digital Electronics Lab	1
26	Theory of Machines for Mechatronics	1
27	Theory of Machines for Mechatronics Lab	1
28	Measurements and Instrumentation	3
29	Measurements and Instrumentation	1
30	Professional Communication and Critical Thinking	1
Total		22
Semester - 4		
S. No.	Name of the Subject	Credits
31	Essence of Indian Knowledge and Tradition	0
32	Control Engineering	3
33	Control Engineering Lab	1
34	Manufacturing Process	3
35	Manufacturing Process Lab	1
36	Microprocessor and Microcontroller	3
37	Microprocessor and Microcontroller Lab	1
38	Power Electronics	3
39	Power Electronics Lab	1
40	Design of Machine Elements	3
41	Design of Machine Elements	1
42	Minor Project	1
43	Employability Skills	1
Total		22
Semester - 5		
S. No.	Name of the Subject	Credits
44	Hydraulic and Pneumatic Systems	3
45	Hydraulic and Pneumatic Systems Lab	1
46	Programmable Logic Controllers	3
47	Programmable Logic Controllers Lab	1
48	Major Project-I	6
49	Summer Internship	2
50	Program Elective - I (Compulsory Subjects :1)	3
51	Program Elective - II (Compulsory Subjects :1)	1
52	Program Elective Lab- I (Compulsory Subjects :1)	3
53	Program Elective Lab- II (Compulsory Subjects :1)	1

Total		24
Semester - 5 (Program Elective 01)		
1	Computer Aided Design	3
2	Advanced Control Systems	3
Semester - 5 (Program Elective 01 LAB)		
1	Computer Aided Design Lab	1
2	Advanced Control Systems Lab	1
Semester - 5 (Program Elective 02)		
1	Artificial Intelligence	3
2	Advanced Microcontrollers	3
Semester - 5 (Program Elective 02 LAB)		
1	Artificial Intelligence Lab	1
2	Advanced Microcontrollers Lab	1
Semester - 6		
S. No.	Name of the Subject	Credits
54	Indian Constitution	0
55	Robotics Engineering	3
56	Robotics Engineering Lab	1
57	Internet of Things	3
58	Internet of Things Lab	1
59	Major Project-II	6
60	Quality and Reliability Engineering	3
61	Mechatronics Software and Maintenance Lab	2
62	Program Elective - III (Compulsory Subjects :1)	4
63	Program Elective Lab- III (Compulsory Subjects :1)	1
Total		24
Semester - 6 (Program Elective 03)		
1	Computer Integrated Manufacturing	4
2	Process Control	4
Semester - 6 (Program Elective 03 LAB)		
1	Computer Integrated Manufacturing Lab	1
2	Process Control Lab	1
Grand Total		127

Faculty of Engineering and Technology- PIT DS		
Diploma in Petrochemical Engineering		
Semester - 1		
S. No.	Name of the Subject	Credits
1	Applied Chemistry	3
2	Applied Chemistry Lab	1
3	Physical Analytical and Inorganic Chemistry Lab	1
4	Physical Analytical And Inorganic Chemistry	3
5	Environmental Science	0
6	Introduction to IT Systems Lab	2
7	Engineering Graphics	1
8	Engineering Graphics Lab	2
9	Mathematics – I	3
10	Communication Skills – I	1
Total		17
Semester - 2		
S. No.	Name of the Subject	Credits
11	Organic Chemistry lab	1
12	Introduction to Chemical Engineering	2
13	Organic Chemistry	4
14	Engineering Workshop Practice	2
15	Mathematics-II	4
16	Applied Physics	3
17	Applied Physics Lab	1
18	Communication Skills - II	1
Total		18
Semester - 3		
S. No.	Name of the Subject	Credits
19	Entrepreneurship and Start-ups	1
20	Mechanical Operations	3
21	Mechanical Operations Lab	1
22	Fluid Flow Operation	3
23	Fluid Flow Operation Lab	1
24	Chemical Process Calculation	4
25	Chemical Engineering Materials	3
26	Chemical Technology –I	3
27	Professional Communication and Critical Thinking	1
Total		20

Semester - 4		
S. No.	Name of the Subject	Credits
28	Essence of Indian Knowledge and Tradition	0
29	Process Heat Transfer	4
30	Process Heat Transfer Lab	1
31	Mass Transfer – I	4
32	Mass Transfer - I Lab	1
33	Pollution Control and Effluent treatment	3
34	Pollution Control and Effluent treatment Lab	1
35	Chemical Technology -II lab	1
36	Chemical Technology –II	4
37	Basics of Petroleum and Petrochemical	3
38	Minor Project	1
39	Employability Skills	1
Total		24
Semester - 5		
S. No.	Name of the Subject	Credits
40	Mass Transfer - II Lab	1
41	Mass Transfer – II	3
42	Petroleum Refining and Petrochemical Technology	3
43	Petroleum Refining and Petrochemical Technology Lab	1
44	Health Environment and Safety	3
45	Plant Design and Economics	4
46	Major Project – I	4
47	Summer Internship	2
48	Program Elective - I (Compulsory Subjects :1)	3
Total		24
Semester - 5 (Program Elective 01)		
1	Polymer Science and Compounding	3
2	Polymer Technology	3
Semester - 6		
S. No.	Name of the Subject	Credits
49	Indian Constitution	0
50	Chemical Reaction Engineering Lab	1
51	Chemical Reaction Engineering	5
52	Chemical Engineering Thermodynamics	4
53	Utilities and Instrumentation Lab	1
54	Utilities and Instrumentation	3
55	Major Project – II	4
56	Open Elective-1 (Compulsory Subjects :1)	3
57	Program Elective – 2 (Compulsory Subjects :1)	3

Total		24
Semester - 6 (Program Elective 02)		
1	Modern Separation Techniques	3
2	Pharmaceutical Technology	3
3	Rubber Processing Technology and Tyre Manufacturing	3
Semester - 6 (Open Elective 01)		
1	Industrial Management	3
2	Project Management	3
3	Energy Conservation and Audit	3
Grand Total		127