Program Schemes for B.E – Mechanical Engineering (Lateral Entry)

Cluster: Engineering and Technology

Institute: UIE

Department: Mechanical Engineering

Type of Program: UG (ME202)

SEMESTER-1		
Course Name	**Course Category**	**Credits**
Not Applicable		

SEMESTER-2		
Course Name	**Course Category**	**Credits**
Not Applicable		

SEMESTER-3		
Course Name	**Course Category**	**Credits**
Engineering Mathematics	Minor core (BS)	4
Strength of Materials	Major core	5
Engineering Thermodynamics	Major core	4
Theory of Machines	Major core	5
Social Internship (Community Engagement and Social Responsibility)	Internship or Training	2
Aptitude-1	Ability Enhancement	1
Entrepreneurship Mindset	Ability Enhancement	1
Critical Enquiry and Research Methodology	Ability Enhancement	1
General Proficiency-2	Ability Enhancement	1

SEMESTER-4		
Course Name	**Course Category**	**Credits**
Applied Mathematics-III	Minor Core (BS)	4
Applied Thermodynamics	Major Core	5
Manufacturing Processes and Techniques	Major core	5
Program Elective- I	Program Elective	3
General Proficiency - 3	Skill Enhancement	1
Universal Human Values, Ethics and Life Skills–2	Value Education	2
Mid-Grade Project-I [MGP-1]	Project	1
Aptitude-2 (For TPP)	Ability Enhancement	1
Soft Skills-2 (For TPP)	Skill Enhancement	1
Marketing & Management Essentials (For Non-TPP)	Ability Enhancement	1
AI Automation & Sustainability (For Non-TPP)	Skill Enhancement	1
Academic Writing (For Non-TPP)	Ability Enhancement	1
Research Ethics & Intellectual Property Rights (For Non-TPP)	Skill Enhancement	1

SEMESTER-5		
Course Name	**Course Category**	**Credits**
Numerical Analysis	Minor core (BS)	4
Refrigeration and Air Conditioning	Major core	4
Fluid Mechanics and Hydraulics Machines	Major core	5
Advanced CAD Modelling	Minor core	1
Program Elective- II	Program Elective	3
Technical/ Domain Internship	Summer Internship	1
Gender Equity and Empowerment	Value Education	1
Environmental Science & Management	Value Education (BS)	2
Aptitude-3 (For TPP)	Ability Enhancement	1
Soft Skills-3 (For TPP)	Skill Enhancement	1
Business Strategies & Operations (For Non-TPP)	Ability Enhancement	1
Finance & Economics Fundamentals (For Non-TPP)	Skill Enhancement	1
Statistical Data Analysis (For Non-TPP)	Ability Enhancement	1
Emerging Research Tools and Technologies (For Non-TPP)	Skill Enhancement	1

SEMESTER-6		
Course Name	**Course Category**	**Credits**
Heat Transfer	Major Core	5
Design of Machine Elements	Major Core	5
Program Elective- III	Program Elective	3
Program Elective- IV	Program Elective	3
Open Elective-I	Open Elective	3
Mid-Grade Project-II [MGP-2]	Project	1
Introduction to SDGs	Value Education	1
Aptitude-4 (For TPP)	Ability Enhancement	1
Soft Skills-4 (For TPP)	Skill Enhancement	1
Customer Engagement & Organic Growth (For Non-TPP)	Ability Enhancement	1
Business Planning & Legal Basics (For Non-TPP)	Skill Enhancement	1
AI & Data-Driven Research (For Non-TPP)	Ability Enhancement	1
Domain Specific Term Paper (For Non-TPP)	Skill Enhancement	1

SEMESTER-7		
Course Name	**Course Category**	**Credits**
Automotive Technology	Major Core	3
Program Elective- V	Program Elective	3
Open Elective-II	Open Elective-II	3
Capstone Project-1 / Dissertation (Part - I)	Capstone Project-1 / Dissertation (Part - I)	4
Industry Internship	Internship/ Training	1
Professional Ethics	Ability Enhancement	1
General Proficiency-4	Skill Enhancement	1

SEMESTER-8		
Course Name	**Course Category**	**Credits**
Program Elective- VI	Program Elective	3
Open Elective-III	Open Electives	3
Capstone Project-2 / Dissertation (Part -II)	PROJECT	8
End Semester Internship *	Internship/ Training	14*

Program Electives			
Semester	**Course Name**	**Course Category**	**Credits**
4	Power Plant Engineering	Program Electives- I	3
4	Advanced Mechanics of Solids	Program Electives- I	3
4	Material Science	Program Electives- I	3
5	Internal Combustion (I.C.) Engines and Alternative Fuels	Program Electives- II	3
5	Industrial Automation & Robotics	Program Electives- II	3
5	Operations Research for Industrial Decision-Making	Program Electives- II	3
6	Applied Computational Fluid Dynamics (CFD) and Simulation	Program Electives- III	3
6	Computer Aided Engineering	Program Electives- III	3
6	Computer Integrated and Manufacturing systems	Program Electives- III	3
6	Gas Turbine and Jet Propulsion Systems	Program Electives- IV	3
6	Industry 4.0 and Digital Twin	Program Electives- IV	3
6	Non Traditional Machining	Program Electives- IV	3
7	Renewable and Hybrid Energy Systems	Program Electives- V	3
7	Mechanical Vibrations	Program Electives- V	3
7	Industrial Engineering	Program Electives- V	3
8	Energy Management	Program Electives- VI	3
8	Tribology	Program Electives- VI	3
8	Total Quality Management	Program Electives- VI	3

Note: Add more rows as applicable.