

B.Tech. in Mechanical Engineering (ME)

1st Semester

Courses	T	L	T	P	C
Classical Physics	IC	3	1	0	4
UG Physics Laboratory	IC	0	0	3	2
Mathematics – I	IC	3	1	0	4
Basic Electronics	IC	3	1	0	4
Basic Electronics Lab	IC	0	0	3	2
Computer Programming	IC	3	0	0	3
Computer Programming Lab	IC	0	0	3	2
Technical Comm. in English	IC	3	0	0	3

2nd Semester

Courses	T	L	T	P	C
Introduction to Modern Physics	PC	3	0	0	3
Mathematics – II	IC	3	1	0	4
Data Structures & Algorithms	IC	3	0	0	3
Data Structures & Algorithms Lab	IC	0	0	2	1
Environmental Ecology & Biology	IC	2	0	2	3
Value Education & Ethics	IC	3	0	0	3
Engineering Graphics Lab	PC	0	0	3	2
Engineering Physical Metallurgy	PC	3	0	0	3

3rd Semester

Courses	T	L	T	P	C
Mathematics – III	IC	3	1	0	4
Modern Electrical & Elect. Techn.	PC	3	0	0	3
Mechanics of Solids	PC	3	0	0	3
Mechanics of Solids Lab	PC	0	0	2	1
Manufacturing Technology – 1	PC	3	0	0	3
Manufacturing Technology Lab	PC	0	0	3	2
Engineering Thermodynamics	PC	3	1	0	4
Industrial Engineering and Manag.	PC	3	0	0	3

4th Semester

Courses	T	L	T	P	C
Machine Design – 1	PC	3	0	0	3
Kinematics & Dynamics	PC	3	0	0	3
Kinematics & Dynamics Lab	PC	0	0	2	1
Fluid Mechanics & Machinery	PC	3	0	0	3
Fluid Mechanics & Machinery Lab	PC	0	0	2	1
Metrology, Instrum. & Control	PC	3	0	0	3
Metrology, Instrum. & Control Lab	PC	0	0	2	1
Total Quality Management	PC	3	0	0	3
Manufacturing Technology – 2	PC	3	0	0	3

5th Semester

Courses	T	L	T	P	C
Economics for Engineers / Psychology, Technology & Society	IC	3	0	0	3
Heat Transfer	PC	3	3	0	3
Heat Transfer Lab	PC	0	0	2	1
Machine Design – 2	PC	3	3	0	3
Machine Design – 2 Lab	PC	0	0	2	1
CAD – CAM	PC	3	3	0	3
CAD – CAM Lab	PC	0	0	2	1
Program Elective – 1	PE	3	3	0	3

6th Semester

Courses	T	L	T	P	C
Economics for Engineers / Psychology, Technology & Society	IC	3	0	0	3
IC Engines	PC	3	0	0	3
IC Engines Lab	PC	0	0	2	1
B.Tech. Project	IC	3	0	0	3
Program Elective – 2	PE	3	0	0	3
Other Elective – 1	OE	3	0	0	3

7th Semester

Courses	T	L	T	P	C
B.Tech. Project	IC	3	0	0	3
Program Elective – 3	PE	3	0	0	3
Program Elective – 4	PE	3	0	0	3
Other Elective – 2	OE	3	0	0	3
Other Elective – 3	OE	3	0	0	3

8th Semester

Courses	T	L	T	P	C
Program Elective – 5	PE	3	0	0	3
Other Elective – 4	OE	3	0	0	3
Other Elective – 5	OE	3	0	0	3

B.Tech. (Hons.) in ME with Specialization in Robotics & Automation

1st Semester

Courses	T	L	T	P	C
Classical Physics	IC	3	1	0	4
UG Physics Laboratory	IC	0	0	3	2
Mathematics – I	IC	3	1	0	4
Basic Electronics	IC	3	1	0	4
Basic Electronics Lab	IC	0	0	3	2
Computer Programming	IC	3	0	0	3
Computer Programming Lab	IC	0	0	3	2
Technical Comm. in English	IC	3	0	0	3

2nd Semester

Courses	T	L	T	P	C
Introduction to Modern Physics	PC	3	0	0	3
Mathematics – II	IC	3	1	0	4
Data Structures and Algorithms	IC	3	0	0	3
Data Structures & Algorithms Lab	IC	0	0	2	1
Environmental Ecology & Biology	IC	2	0	2	3
Value Education and Ethics	IC	3	0	0	3
Engineering Graphics Lab	PC	0	0	3	2
Engineering Physical Metallurgy	PC	3	0	0	3

3rd Semester

Courses	T	L	T	P	C
Mathematics-III	IC	3	1	0	4
Modern Electrical & Elect. Techn.	PC	3	0	0	3
Mechanics of Solids	PC	3	0	0	3
Mechanics of Solids Lab	PC	0	0	2	1
Manufacturing Technology-1	PC	3	0	0	3
Manufacturing Technology Lab	PC	0	0	3	2
Engineering Thermodynamics	PC	3	1	0	4
Industrial Engineering & Manag .	PC	3	0	0	3
Introduction to Automation	SC	3	0	2	4

4th Semester

Courses	T	L	T	P	C
Machine Design – 1	PC	3	0	0	3
Kinematics & Dynamics	PC	3	0	0	3
Kinematics & Dynamics Lab	PC	0	0	2	1
Fluid Mechanics & Machinery	PC	3	0	0	3
Fluid Mechanics & Machinery Lab	PC	0	0	2	1
Metrology, Instrum. & Control	PC	3	0	0	3
Metrology, Instrum. & Control Lab	PC	0	0	2	1
Total Quality Management	PC	3	0	0	3
Manufacturing Technology – 2	PC	3	0	0	3
Modeling And Design of Robots	SC	3	0	2	4

5th Semester

Courses	T	L	T	P	C
Economics for Engineers / Psychology, Technology & Society	IC	3	0	0	3
Heat Transfer	PC	3	3	0	3
Heat Transfer Lab	PC	0	0	2	1
Machine Design -2	PC	3	3	0	3
Machine Design -2 Lab	PC	0	0	2	1
CAD-CAM	PC	3	3	0	3
CAD- CAM Lab	PC	0	0	2	1
Program Elective- 1	PE	3	0	0	3
Programming For Automation and Robotics	SC	1	0	3	2.5

6th Semester

Courses	T	L	T	P	C
Economics for Engineers / Psychology, Technology & Society	IC	3	0	0	3
IC Engines	PC	3	0	0	3
IC Engines Lab	PC	0	0	2	1
BTP	IC	3	0	0	3
Program Elective- 2	PE	3	0	0	3
Open Elective - 1	OE	3	0	0	3
Control And Optimisation of Automation and Robotic Systems	SC	3	0	2	4

7th Semester

Courses	T	L	T	P	C
BTP	IC	3	0	0	3
Program Elective- 3	PE	3	0	0	3
Program Elective- 4	PE	3	0	0	3
Open Elective - 2	OE	3	0	0	3
Open Elective - 3	OE	3	0	0	3
Artificial Intelligence for Robotics and Automation	SC	3	0	2	4
Major Project	SC	3	0	0	3

8th Semester

Courses	T	L	T	P	C
Program Elective- 5	PE	3	0	0	3
Open Elective – 4	OE	3	0	0	3
Open Elective - 5	OE	3	0	0	3

List of Programme Electives

Failure Analysis and Design

Numerical Methods

Vehicle Dynamics

Automotive Power Transmission Systems

Robotics and Industrial Automation

Refrigeration and Conditioning

Cryogenics

Power Plant Engineering

Energy Engineering

CFD

Welding and Allied Processes

Mechanical Vibration

Energy Conversion and Managements

Unconventional Machining Processes

Machine Condition Monitoring and Fault Diagnostics Techniques

BioMechanics

Finite Element Method

List of other electives for UG students has been provided on page no. 16.

Faculty Members



Ashok Kumar Dargar

Associate Professor & HoD

Ph.D., Jamia Millia Islamia University, Delhi

Research Areas: Synthesis and Analysis of Kinematic Chains and Mechanisms



Kamal Kishore Khatri

Associate Professor

Ph.D., MNIT Jaipur

Research Areas: Alternate Fuels in IC Engines, Trigenation, Modeling and Simulation of Thermal/ Energy Systems, Application of Nano-fluids



Vikram Sharma

Associate Professor

Ph.D., Guru Gobind Singh

Indraprastha University, Delhi
Research Areas: Supply Chain Management, Lean Manufacturing



Deepak R. Unune

Assistant Professor

Ph.D., MNIT Jaipur

Research Areas: Hybrid Machining Processes, Electro Discharge Mach. Modelling & Analysis of Mech. Systems



Praveen Kumar Sharma

Assistant Professor

Ph.D., IIT Hyderabad

Research Areas: Dynamics of Drop Impacting a Dry Rigid Surface



Vikas Sharma

Assistant Professor

Ph.D., IIT Indore

Research Areas: Gears and Bearings, Vibrations, Condition Monitoring, Fault Diagnosis, Signal Processing Techniques



Rahul Singhal

Assistant Professor (On contract)

Ph.D. MNIT Jaipur

Research Areas: Robotics and Artificial Intelligence



Sunil Pandey

Distinguished Professor

Ph.D., IIT Delhi

Research Areas: Welding and Joining Technology, Production Engineering, Process Engineering



Manoj Kumar

Associate Professor

Ph.D., IIT Delhi

Research Areas: Production and Industrial Engineering, Welding Technology



Atul Mishra

Assistant Professor

Ph.D., IIT Kharagpur

Research Areas: Industrial and Mobile Robotics, Production Planning and Control, Artificial Intelligence in Manufacturing



Mohit Makkar

Assistant Professor

Ph.D., University of Lille 1, France

Research Areas: Robotics, Modeling and Simulation, Design of Control Systems, System Dynamics



Servesh Kumar Agnihotri

Assistant Professor

Ph.D., IIT Kanpur

Research Areas: Fracture mechanics, Experimental Solid Mechanics, Functionally graded composites



Arpi Majumder

Guest Faculty

Ph.D., Jadavpur University Kolkata

Research Areas: Synthesis of metal complexes for the application in coupling reactions