

BACHELOR OF TECHNOLOGY
(B.Tech.)
in
MECHANICAL ENGINEERING

CURRICULUM

(For students admitted from the academic year 2019 - 2020)



DEPARTMENT OF MECHANICAL ENGINEERING
NATIONAL INSTITUTE OF TECHNOLOGY PUDUCHERRY
KARAIKAL – 609 609, INDIA.

Curriculum for B.Tech. in Mechanical Engineering (Eight Semesters)

The total credits required for completing the B.Tech. Programme in Mechanical Engineering is 169

SEMESTER-I					
Code	Course Title	L	T	P	C
HM141	Communicative English	2	0	2	3
MA141	Calculus	3	1	0	4
PH141	Physics for Mechanical Engineers	3	0	0	3
CH141	Chemistry for Mechanical Engineers	3	0	0	3
EE141	Basic Electrical and Electronics Engineering	3	0	0	3
ME101	Engineering Graphics	1	0	4	3
PH143	Physics Laboratory	0	0	4	2
CH143	Chemistry Laboratory	0	0	4	2
Total Credits					23

SEMESTER-II					
Code	Course Title	L	T	P	C
HM142	Practical English	2	0	2	3
MA142	Complex Variables and Transforms	3	0	0	3
ME102	Engineering Mechanics	3	0	0	3
CS142	Fundamentals of Computers and Programming	3	0	0	3
ME104	Energy, Environment, Lifesciences and Agriculture	3	0	0	3
ME106	Manufacturing Processes	3	0	0	3
CS144	Basic Programming Laboratory	0	0	4	2
ME108	Basic Workshop Practice	0	0	4	2
Total Credits					22

SEMESTER-III					
Code	Course Title	L	T	P	C
MA241	Numerical Methods	3	0	0	3
ME201	Engineering Thermodynamics	3	0	0	3
ME203	Strength of Materials	3	0	0	3
ME205	Kinematics of Machinery	3	0	0	3

ME207	Engineering Metallurgy	3	0	0	3
ME209	Machining Processes	3	0	0	3
ME211	Material Testing Laboratory	0	0	4	2
ME213	Material Characterization Laboratory	0	0	4	2
ME215	Manufacturing Processes Laboratory	0	0	4	2
Total Credits					24

SEMESTER-IV					
Code	Course Title	L	T	P	C
MA242	Probability and Statistics	3	0	0	3
ME202	Heat and Mass Transfer	3	0	0	3
ME204	Dynamics of Machinery	3	0	0	3
ME206	Fluid Mechanics and Machinery	3	0	0	3
ME208	Machine Drawing	1	0	4	3
ME210	Automobile Engineering	3	0	0	3
ME212	Dynamics Laboratory	0	0	4	2
ME214	Fluid Mechanics and Machinery Laboratory	0	0	4	2
Total Credits					22

SEMESTER-V					
Code	Course Title	L	T	P	C
ME301	Engineering Measurements	3	0	0	3
ME303	Thermal Engineering	3	0	0	3
ME305	Design of Machine Elements	3	0	0	3
ME307	Computer Aided Design	3	0	0	3
ME309	Finite Element Analysis	3	0	0	3
	Open Elective – I	3	0	0	3
ME311	Measurements Laboratory	0	0	4	2
ME313	Thermal Engineering Laboratory	0	0	4	2
ME315	CAD Laboratory	0	0	4	2
Total Credits					24

SEMESTER-VI					
Code	Course Title	L	T	P	C
ME302	Industrial Engineering and Operations Research	3	0	0	3
ME304	Energy Engineering	3	0	0	3
ME306	Computational Fluid Dynamics	3	0	0	3
ME308	Design of Transmission Elements	3	0	0	3
	Elective 1	3	0	0	3
	Open Elective 2	3	0	0	3
ME310	Energy Laboratory	0	0	4	2
ME312	Simulation Laboratory	0	0	4	2
Total Credits					22

SEMESTER-VII					
Code	Course Title	L	T	P	C
HM441	Industrial Economics and Management	2	0	0	2
HM443	Professional Ethics and Indian Constitution	0	0	0	0
	Elective 2	3	0	0	3
	Elective 3	3	0	0	3
	Elective 4	3	0	0	3
	Elective 5	3	0	0	3
	Open Elective 3	3	0	0	3
ME491	Project Phase I	0	0	6	3
Total Credits					20

SEMESTER-VIII					
Code	Course Title	L	T	P	C
	Elective 6	3	0	0	3
	Elective 7	3	0	0	3
ME492	Project Phase II	0	0	15	6
Total Credits					12

Semester	I	II	III	IV	V	VI	VII	VIII	Total Credits
Credits	23	22	24	22	24	22	20	12	169

LIST OF ELECTIVES

SEMESTER V

Open Elective-I

CODE	COURSE OF STUDY	L	T	P	C
ME361	Hybrid Vehicles – Solar and Fuel Cells	3	0	0	3
ME362	Strategic Quality Management	3	0	0	3

SEMESTER VI

Elective – I

CODE	COURSE OF STUDY	L	T	P	C
ME321	Advanced Manufacturing Processes	3	0	0	3
ME322	Computer Integrated Manufacturing	3	0	0	3
ME323	Design for Manufacture and Assembly	3	0	0	3
ME324	Micro and Nano Manufacturing	3	0	0	3

Open Elective-II

CODE	COURSE OF STUDY	L	T	P	C
ME363	Renewable Energy	3	0	0	3
ME364	3D Printing	3	0	0	3

SEMESTER VII

Elective – II

CODE	COURSE OF STUDY	L	T	P	C
ME421	Human Factors Engineering	3	0	0	3
ME422	Lean and Agile Manufacturing	3	0	0	3
ME423	Supply Chain Management	3	0	0	3

Elective – III

CODE	COURSE OF STUDY	L	T	P	C
ME424	Mechanics of Composites	3	0	0	3
ME425	Tribology	3	0	0	3
ME426	Fatigue, Fracture and Failure Analysis	3	0	0	3
ME427	Advanced Material Characterization	3	0	0	3

Elective – IV

CODE	COURSE OF STUDY	L	T	P	C
ME428	Refrigeration and Air Conditioning	3	0	0	3
ME429	IC Engines	3	0	0	3
ME430	Cryogenics	3	0	0	3
ME431	Gas Dynamics and Jet Propulsion	3	0	0	3

ME432	Pressure Vessel Design	3	0	0	3
ME433	Turbomachines	3	0	0	3

Elective – V

CODE	COURSE OF STUDY	L	T	P	C
ME434	Energy Management and Auditing	3	0	0	3
ME435	Solar Power Engineering	3	0	0	3
ME436	Direct Energy Conversion Systems	3	0	0	3
ME437	Nuclear Power Engineering	3	0	0	3
ME438	Fuel Cell Technology	3	0	0	3
ME439	Bio Fuels	3	0	0	3
ME440	Petroleum Engineering	3	0	0	3

Open Elective-III

CODE	COURSE OF STUDY	L	T	P	C
ME461	Industrial Safety Engineering	3	0	0	3
ME462	Mechatronics	3	0	0	3
ME463	Energy from Waste	3	0	0	3

SEMESTER VIII

Elective-VI

CODE	COURSE OF STUDY	L	T	P	C
ME441	Digital Manufacturing	3	0	0	3
ME442	Robotics and Automation	3	0	0	3
ME443	Product Design	3	0	0	3
ME444	Additive Manufacturing	3	0	0	3
ME445	Micro Fluidics	3	0	0	3
ME446	Introduction to Turbulence	3	0	0	3
ME447	Bio Fluid mechanics	3	0	0	3
ME448	Analytical methods for engineering applications	3	0	0	3

Elective-VII

CODE	COURSE OF STUDY	L	T	P	C
ME449	Instrumentation & Control Engineering	3	0	0	3
ME450	Power Plant Engineering	3	0	0	3
ME451	Automotive Fuels and Pollution Control	3	0	0	3
ME452	Fundamentals of Combustion	3	0	0	3
ME453	Advanced Heat and Mass Transfer	3	0	0	3