

- Mechatronics Lab
- Metrology and Measurements Lab

Course Structure of B. Tech Mechanical Engineering programme

First Year

First Semester

Code	Subject	L-T-P	Credits
SPHL 103B	Modern Physics	3-1-0	4
SMTL 102B	Calculus & Linear Algebra	3-1-0	4
ECSL 101B	Computer Fundamentals & Information Technology	3-0-0	3
EECL 101B	Electrical Science and Engineering	3-1-0	4
SPHP 102B	Modern Physics Lab	0-0-3	1.5
ECSP 101B	Basic Computer Lab	0-0-2	1
PLNP 101B	Language Lab	0-0-2	1
EMEP 101B	Workshop	0-0-3	1.5
EECP 101B	Basic Electrical Lab	0-0-2	1
	Total Credits	12-3-12	21

First Year

Second Semester

Code	Subject	L-T-P	Credit
SPHL 101B	Electrodynamics	3-1-0	4
SMTL 104B	Differential Equations & Vector Calculus	3-1-0	4
ECSL 102B	Introduction to Programming with 'C'	3-0-0	3
EMEL 102B	Thermodynamics	3-1-0	4
EECL 102B	Basic Electronics	3-1-0	4
PLNL 101B	Communication Skill	3-0-0	3
EMEL 101B	Engineering Graphics	1-0-3	2.5
SPHP 101B	Electrodynamics Lab	0-0-3	1.5
ECSP 102B	Programming Lab	0-0-2	1
EECP 102B	Basic Electronics Lab	0-0-2	1
	Total Credits	19-4-10	28

B. Tech Mechanical Engineering Course Structure

Second Year

Third Semester

Code	Subject	L-T-P	Credits
EMEL 201B	Engg. Mechanics	3-1-0	4
EMEL 202B	Fluid Mechanics & Machinery	3-1-0	4
EMEL 204B	Machine Drawing	1-0-3	2.5
EMEL 210B	Materials Science and Engineering	3-1-0	4
SMTL 201B	Integral Transforms & complex analysis	3-1-0	4
EMEP 202B	Fluid Mechanics Lab	0-0-2	1
PPCL 201B	Introduction to logic	2-1-0	3
EMEP 210B	Materials Science & Engineering Lab	0-0-2	1
	Total Credits	15-5-7	23.5

Second Year

Fourth Semester

Code	Subject	L-T-P	Credits
SMTL 205B	Engineering Computational Methods	3-0-0	3
EMEL 206B	Kinematics of Machines	3-1-0	4
EMEL 207B	Strength of Materials	3-1-0	4
EMEL 208B	Fluid Machines	3-1-0	4
EMEL 209B	Thermal Engineering	3-1-0	4
EMEP 203B	Machine Tools Lab.	0-0-3	1.5
EMEL 203B	Manufacturing Processes	3-0-0	3
EMEP 207B	Strength of Materials Lab	0-0-2	1.0
EMEP 208B	Fluid Machines Lab	0-0-2	1.0
EMEP 209B	Thermal Engineering Lab	0-0-2	1.0
	Total Credits	18-4-9	26.5

B. Tech Mechanical Engineering Course Structure

Third Year

Fifth Semester

Code	Subject	L-T-P	Credits
EMEL 311B	Machining Processes	3-0-0	3
EMEL 301B	Mechanics of Materials	3-1-0	4
EMEL 302B	Design of Machine Element	3-1-0	4
EMEL 303B	Dynamics of Machines	3-1-0	4
EMEL 304B	Internal Combustion Engines	3-1-0	4
EMEL 305B	Heat and Mass Transfer	3-1-0	4
EMEP 303B	Theory of Machine Lab	0-0-2	1.0
EMEP 304B	I.C Engines Lab	0-0-2	1.0
EMEP 305B	Heat and Mass Transfer Lab	0-0-2	1.0
	Total Credits	18-5-6	26

Third Year

Sixth Semester

Code	Subject	L-T-P	Credits
EMEL 306B	CAD/CAM	3-0-0	3
EMEL 307B	Metrology and Measurements	3-1-0	4
EMEL 308B	Machine Design	3-1-0	4
EMEL 309B	Refrigeration and Air-conditioning	3-1-0	4
	Elective – I	3-0-0	3
EMEL 310B	Industrial Engineering	3-0-0	3
EMEP 306B	CAD/CAM Lab	0-0-2	1
EMEP 307B	Metrology and Measurements Lab	0-0-2	1
EMEP 309B	Refrigeration and Air-conditioning Lab	0-0-2	1
	Total Credits	18-3-6	24

Note: *Practical Training* will be arranged in the summer vacation following the sixth semester

**B. Tech Mechanical Engineering
Course Structure**

Fourth Year

Seventh Semester

Code	Subject	L-T-P	Credits
EMEL 424B	Automobile Engg.	3-0-0	3
EMEL 402B	Operations Research	3-1-0	4
EMEL 403B	Mechanical Vibrations	3-1-0	4
	Elective – II	3-0-0	3
	Elective – III	3-0-0	3
EMEL 411B	Robotics and Mechatronics	3-0-0	3
EMEP 424B	Automobile Engg. Lab	0-0-2	1
EMEP 403B	Mechanical Vibration Lab	0-0-2	1
EMEC 409B	Colloquium	0-2-0	2
EMED 410B	Major Project Phase-I	0-0-6	3
	Total Credits	18-4-8	27

Fourth Year

Eight Semester

Code	Subject	L-T-P	Credits
EMED 423B	Major Project Phase- II	0-0-24	12
	Total Credits	0-0-24	12

GRAND TOTAL CREDITS: 188

B. Tech Mechanical Engineering Course Structure

List of Electives:

Elective-I (VIth Semester)

Code	Subject	L-T-P	Credits
PPCE 302B	Riddles of Existance	2-1-0	3
PPCE 401B	Meaning of Life		
PPCE 402B	Foundation of Cognitive Science	2-1-0	3
PPCE 403B	Introduction to Human Rights	2-1-0	3

Elective-II

Code	Subject	L-T-P	Credits
EMEE 401B	Power Plant Engg.	3-0-0	3
EMEE 404B	Project Management	3-0-0	3
EMEE 311B	Work Study & Ergonomics	3-0-0	3
EMEE 312B	Fuels, Combustion and Pollution	3-0-0	3
EMEE 313B	Computer Integrated Manufacturing Systems	3-0-0	3
EMEE 405B	Turbo Machinery	3-0-0	3
EMEE406B	Concurrent Engineering	3-0-0	3
EMEE 407B	Industrial Automation	3-0-0	3
EMEE 408B	Gas dynamics and Jet propulsion	3-0-0	3

Elective-III

Code	Subject	L-T-P	Credits
EMEE 413B	Computational Fluid Flow and Heat Transfer	3-0-0	3
EMEE414B	Design for Manufacturing and Assembly	3-0-0	3
EMEE 415B	Environmental Science and Engineering	3-0-0	3
EMEE 416B	Maintenance Engineering	3-0-0	3
EMEE 417B	Mechanical System Design	3-0-0	3
EMEE 418B	Injection Moulding and Mould Design	3-0-0	3
EMEE419B	Professional Ethics	3-0-0	3
EMEE420B	Product development and Design	3-0-0	3
EMEE 421B	Tool Design	3-0-0	3
EMEE 422B	Total Quality Management	3-0-0	3
EIRE 207B	Energy Management	3-0-0	3