

MECHANICAL ENGINEERING

COURSE CURRICULUM FOR THE NEW PROGRAMME (B.Tech.) w.e.f. 2017 BATCH

Semester I						Semester – II					
Course code	Course Name	Credit Structure				Course Code	Course Name	Credit Structure			
		L	T	P	C			L	T	P	C
MA 105	Calculus	3	1	0	8	MA 106	Linear Algebra	2	0	0	4
PH 107	Quantum Physics	2	1	0	6	MA 108	Ordinary Differential Equations	2	0	0	4
CH 105	Organic Chemistry & Inorganic Chemistry	2	0	0	4	*CS 101/ +BB 101	Computer Programming/ Biology	2	1	0	6
CH 107	Physical Chemistry	2	0	0	4	PH 108	Electricity and Magnetism	2	1	0	6
*CS 101/ +BB 101	Computer Programming/ Biology	2	1	0	6	ME 119	Engineering Graphics & Drawing	0	1	3	5
ME 113	Workshop Practice	1	0	3	4	*PH 117/ +CH 117	Physics Lab Chemistry Lab	0	0	3	3
*PH 117/ +CH 117	Physics Lab Chemistry Lab	0	0	3	3	**CE 102	Engineering Mechanics	2	1	0	6
NC 101#	National Cadet Corps (NCC)	0	0	0	P/NP	NC 102#	National Cadet Corps (NCC)	0	0	0	P/NP
NO 101#	National Sports Organization (NSS)	0	0	0	P/NP	NO 102#	National Sports Organization (NSS)	0	0	0	P/NP
NS 101#	National Service Scheme (NSS)	0	0	0	P/NP	NS 102#	National Service Scheme (NSS)	0	0	0	P/NP
	Total Credits				35		Total Credits				34
* Any one of these two courses and any one of these Lab courses only for D1 D4 + Only for D1 D2 # Any one of these three P/NP courses						* Any one of these two courses and any one of these Lab courses only for D1 D2 ** Engineering Mechanics offered by Civil Engineering Department is the DIC + Only for D3 D4 # Any one of these three P/NP courses					

MECHANICAL ENGINEERING DEPARTMENT
COURSE CURRICULUM FOR THE NEW PROGRAMME (B.Tech.) w.e.f. 2017 BATCH

Semester III						Semester – IV					
Course code	Course Name	Credit Structure				Course Code	Course Name	Credit Structure			
		L	T	P	C			L	T	P	C
ME 201	Solid Mechanics	2	1	0	6	ME 202	Strength of Materials	2	1	0	6
ME 209	Thermodynamics	2	1	0	6	ME 226	Mechanical Measurement	2	1	0	6
EE 101	Introduction to Electrical and Electronics Circuits	3	1	0	8	ME 206	Manufacturing Processes I	2	1	0	6
MM 207	Engineering Metallurgy	2	1	0	6	MA 214	Numerical Analysis	3	1	0	8
ME 219	Fluid Mechanics	3	1	0	8	ME 224	Fluid Mechanics Lab.	0	0	3	3
HS 101	Economics	2	1	0	6	ME 218	Solid Mechanics Lab	0	0	3	3
						ME 213	Manufacturing Practice Lab				5
Total					40	Total					37
COURSES FOR HONOR REQUIREMENT						COURSES FOR HONOR REQUIREMENT					
COURSES FOR MINOR REQUIREMENT						COURSES FOR MINOR REQUIREMENT					
ME 201M	Solid Mechanics	2	1	0	6						
ME 219M	Fluid Mechanics	3	1	0	8	ME 206M	Manufacturing Processes I	2	1	0	6
						ME 209M	Thermodynamics	2	1	0	6

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Semester V						Semester – VI							
Course code	Course Name	Credit Structure				Course Code	Course Name	Credit Structure					
		L	T	P	C			L	T	P	C		
ME 346	Heat Transfer	2	1	0	6	ME 306	Applied Thermodynamics	2	1	0	6		
ME311	Microprocessor and Automatic Controls	2	1	0	6	ME 316	Kinematics and Dynamics of Machines	2	1	0	6		
ME 338	Manufacturing Processes II	2	1	0	6	ES 200	Environmental studies, Sci&Eng	3	0	0	3		
HS 303 HS 307	Psychology or Sociology	3	0	0	6	HS 200	Environmental Studies	3	0	0	3		
ME 374	Manufacturing Processes Lab	0	0	3	3	ME 370	Kinematics and Dynamics of Machines Lab	0	0	3	3		
ME 307	Mechanical Measurements Lab	0	0	3	3	ME 372	Heat Transfer and Metrology Lab	0	0	3	3		
						ME 308	Industrial Engg. and Operations Research	2	1	0	6		
						ME 310	Microprocessor and Automatic Controls Lab.	0	0	3	3		
Total						30	Total						33
COURSES FOR HONOR REQUIREMENT						COURSES FOR HONOR REQUIREMENT							
						ME	Course 1	3	0	0	6		
COURSES FOR MINOR REQUIREMENT						COURSES FOR MINOR REQUIREMENT							
ME 219M	Fluid Mechanics	2	1	0	6	ME 316M	Kinematics and Dynamics of Machines	2	1	0	6		

Important Instructions and List of Electives for B.Tech.

- (i) B.Tech. program consists of 268 credits including 36 credits for 6 department electives and 12 credits for 2 institute electives.
- (ii) Each student must select any 6 courses from the elective list A for department elective
- (iii) Honors can be earned by completing 1 elective (06 credits) and an 18-credit project. The project, guide and the elective must be decided by the end of semester VI. The project should be taken up in the semesters VII and VIII. 1 elective must be slanted towards the project and decided in consultation with the project guide and should be submitted to department office.
- (iv) For the 2 Institute Electives, students may take courses from any department (Excluding ME department) in the institute. At least one course should be 3XX or higher level.

List A

It includes courses given below and any course from the DD curriculum (TFE/CADA/CIM).

- 1) ME 342 Analytical Methods in Engineering
- 2) ME 348 Computer Aided Solution
- 3) ME 350 Refrigeration and Air-Conditioning
- 4) ME 354 Analytical Mechanics
- 5) ME 360 Power Plant Engineering
- 6) ME 366 Experimental Stress Analysis
- 7) ME 427 Design for Fatigue and Fracture
- 8) ME 440 Industrial Tribology
- 9) ME 443 Advanced Refrigeration
- 10) ME 450 Vibration and Noise Control
- 11) ME 459 Combustion & Emissions in IC Engines

- 12) ME 472 Non Linear Dynamics and Chaos
- 13) ME 607 Machine Design
- 14) ME 610 Applied Tribology
- 15) ME 729 Nuclear Reactor Analysis
- 16) IE 642 Engineering Economic Analysis
- 17) EN 301 Introduction to Renewable Energy Technologies
- 18) EN 606 Energy Resources, Economics and Environment
- 19) EN 621 Mathematical Foundation for Energy Science
- 20) EN 629 Thermodynamics and Energy Conversion
- 21) EN 646 Energy and Climate

Important Note:

- Students are permitted to register for only one out of these two courses:
 1. ME 602 (Fatigue, Fracture and Failure Analysis)
 2. ME 616 Fracture Mechanics
- If a course has two course codes (Eg. Microfluidics - ME410 and ME758), you may register for the course only once with a course code suitable to you

List of Courses for Minor in Mechanical Engineering

A student can be awarded a minor in Mechanical Engineering provided he completes any five of the following courses.

- 1) Solid Mechanics (ME 201M)
- 2) Thermodynamics (ME 209M)
- 3) Fluid Mechanics (ME 219M)
- 4) Kinematics and Dynamics of Machines (ME 316M)
- 5) Manufacturing Processes I (ME 206M)
- 6) Manufacturing Processes II (ME 338M)