MECHANICAL ENGINEERING

COURSE CURRICULUM FOR THE NEW PROGRAMME (B.Tech.) w.e.f. 2013 BATCH

Semester I

Course code	Course Name	Credit Structure			
		L	**T**	**P**	**C**
MA 105	Calculus	**3**	**1**	**0**	**8**
PH 107	Quantum Physics	**2**	**1**	**0**	**6**
CH 105	Organic Chemistry & Inorganic Chemistry	**2**	**0**	**0**	**4**
CH 107	Physical Chemistry	**2**	**0**	**0**	**4**
*CS 101/ +BB 101	Computer Programming/ Biology	**2**	**1**	**0**	**6**
ME 113	Workshop Practice	**1**	**0**	**3**	**4**
*PH 117/ +CH 117	Physics Lab Chemistry Lab	**0**	**0**	**3**	**3**
ME 102	Data Analysis & Interpretation	**2**	**1**	**0**	**6**
NC 101#	National Cadet Corps (NCC)	**0**	**0**	**0**	**P/NP**
NO 101#	National Sports Organization (NSS)	**0**	**0**	**0**	**P/NP**
NS 101#	National Service Scheme (NSS)	**0**	**0**	**0**	**P/NP**
	Total Credits				**41**

* 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

Semester – II

Course Code	Course Name	Credit Structure			
		L	**T**	**P**	**C**
MA 106	Linear Algebra	**2**	**0**	**0**	**4**
MA 108	Ordinary Differential Equations	**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**
*PH 117/ +CH 117	Physics Lab Chemistry Lab	**0**	**0**	**3**	**3**
**CE 102	Engineering Mechanics	**2**	**1**	**0**	**6**
NC 102#	National Cadet Corps (NCC)	**0**	**0**	**0**	**P/NP**
NO 102#	National Sports Organization (NSS)	**0**	**0**	**0**	**P/NP**
NS 102#	National Service Scheme (NSS)	**0**	**0**	**0**	**P/NP**
	Total Credits				**34**

* 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 DEPARMENT
COURSE CURRICULUM FOR THE NEW PROGRAMME (B.Tech.) w.e.f. 2013 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**

COURSE CURRICULUM FOR THE NEW PROGRAMME (B.Tech.) w.e.f. 2013 BATCH											
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**

COURSE CURRICULUM FOR THE NEW PROGRAMME (B.Tech.) w.e.f. 2013 BATCH											
Semester VII						**Semester – VIII**					
Course code	**Course Name**	**Credit Structure**				**Course Code**	**Course Name**	**Credit Structure**			
		L	**T**	**P**	**C**			**L**	**T**	**P**	**C**
ME 423	Machine Design	**2**	**1**	**2**	**8**		Departmental Elective III	**3**	**0**	**0**	**6**
	Departmental Elective I	**3**	**0**	**0**	**6**		Departmental Elective IV	**3**	**0**	**0**	**6**
	Departmental Elective II	**3**	**0**	**0**	**6**		Departmental Elective V	**3**	**0**	**0**	**6**
	Institute Elective I	**3**	**0**	**0**	**6**		Departmental Elective VI	**3**	**0**	**0**	**6**
							Institute Elective II	**3**	**0**	**0**	**6**
ME 441	Applied Thermodynamics Lab	**0**	**0**	**3**	**3**						
Total					**29**	**Total**					**30**
COURSES FOR HONOR REQUIREMENT						COURSES FOR HONOR REQUIREMENT					
						ME	Project (Stage 2)	**0**	**0**	**0**	**12**
ME	Project (Stage 1)	**0**	**0**	**0**	**6**						
COURSES FOR MINOR REQUIREMENT						COURSES FOR MINOR REQUIREMENT					
ME 338M	Manufacturing Processes II	**2**	**1**	**0**	**6**						

Total Number of Credits: 274

Important Instructions and List of Electives for B.Tech.

(i) B.Tech. program consists of 274 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 (including 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 616Fracture 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)