JIS College of Engineering

Mechanical Engineering Department

Curriculum/Syllabus for B.Tech in Mechanical Engineering

Syllabus of B.Tech in Mechanical Engineering who were admitted in the academic session 2016 onwards

Proposed Syllabus 1st Semester of 1st Year

Paper Name	Contact Periods/Week			Cr	Contact Hour
Theory					
	L	T	P		
Mathematics -I	3	1	0	4	4
Chemistry (Gr. A) / Physics - I(Gr. B)	3	1	0	4	4
Basic Electrical Engineering (Gr. A) / Basic Electronics Engineering (Gr. B)	3	1	0	4	4
Professional Communication	2	0	0	2	2
Engineering Mechanics	3	1	0	4	4
			Sub Total	**18**	18
Practical					
Extra Curricular Activity (NSS/ NCC)	0	0	2	1	2
Lang. Lab. and Seminar Presentation	0	0	2	1	2
Chemistry Lab(Gr. A) / Physics -I Lab(Gr. B)	0	0	3	2	3
Basic Electrical Engineering Lab(Gr. A) / Basic Electronics Engineering Lab(Gr. B)	0	0	3	2	3
Engg Drawing & Computer Graphics (Gr-A)/Workshop Practice (Gr- B)	0	0	3	2	3
			Sub Total	**08**	**13**
			Total	**26**	**31**

JIS College of Engineering

Mechanical Engineering Department

Proposed Syllabus 2nd Semester of 1st Year

Paper Name	Contact Periods/Week			Cr	Contact Hour
Theory					
	L	T	P		
Mathematics II	3	1	0	4	4
Chemistry (Gr-B)/ Physics-I(Gr-A)	3	1	0	4	4
Basic Electrical Engineering (Gr-B)/ Basic Electronics Engineering(Gr-A) /	3	1	0	4	4
Computer Fundamentals & Principle of Computer Programming	3	0	0	3	3
Engineering Thermodynamics & Fluid Mechanics	3	1	0	4	4
			Sub-Total	**19**	**19**
Practical					
Computer Programming Lab	0	0	3	2	3
Basic Electrical Engineering Lab(Gr-B)/ Basic Electronics Engineering Lab(Gr-A)	0	0	3	2	3
Chemistry Lab(Gr-B)/ Physics Lab -I(Gr-A)	0	0	3	2	3
Engg Drawing & Computer Graphics (Gr- B)/Workshop Practice (Gr- A)	0	0	3	2	3
Sessional					
Technical Skill Development –I				1	
			Sub-Total	09	12
			Total	28	**31**
Grand Total Credit in 1st Year				**54**	

Gr A – ECE , EE , AEIE , BIOMEDICAL & FT

Gr-B – CSE , IT , ME,CE

Proposed Course Curriculum of B.Tech Mechanical Engineering Programme

3rd SEMESTER

Subject Type	Subject Code	Subject Name	Contact hours/Week				Total Credits
			L	T	P	Total	
THEORY:							
PC	ME 301	APPLIED THERMODYNAMICS	3	0	0	3	3
PC	ME 302	STRENGTH OF MATERIALS	3	0	0	3	3
PC	ME 303	FLUID MECHANICS	3	0	0	3	3
ES	EE(ME) 301	ELECTRICAL MACHINES	3	0	0	3	3
BS	M(ME)301	MATHEMATICS- III	3	0	0	3	3
BS	PH(ME)301	PHYSICS- II	3	0	0	3	3
PRACTICAL:							
PC	ME 391	STRENGTH OF MATERIALS LAB	0	0	3	3	2
PC	ME 392	MACHINE DRAWING- I	0	0	3	3	2
ES	EE(ME)391	ELECTRICAL MACHINES LAB	0	0	2	2	1
BS	PH(ME)391	PHYSICS-II LAB	0	0	3	3	2
SESSIONAL							
MC	MC381	TECHNICAL SKILL DEVELOPMENT	0	0	2	2 UNITS	0
		Total: Eleven	17	0	13	30	24

4th SEMESTER

Subject Type	Subject Code	Subject Name	Contact Hours/Week				Total Credits
			L	T	P	Total	
THEORY:							
PC	ME 401	FLUID MACHINERY	3	0	0	3	3
PC	ME 402	PRIMARY MANUFACTURING PROCESS	3	0	0	3	3
PC	ME 403	ENGINEERING MATERIALS	3	0	0	3	3
PC	ME 404	MECHANISMS	3	0	0	3	3
BS	M(CS)401	NUMERICAL METHODS	3	0	0	3	3
HU	HU 401	ENVIRONMENTAL SCIENCE	2	0	0	2	2
PRACTICAL:							
PC	ME 491	FLUID MECHANICS & HYDRAULIC MACHINES LAB	0	0	3	3	2
PC	ME 492	MANUFACTURING TECHNOLOGY LAB	0	0	3	3	2
PC	ME 493	MATERIAL TESTING LAB	0	0	3	3	2
PC	ME 494	MACHINE DRAWING-II	0	0	3	3	2
BS	M(ME)491	NUMERICAL METHODS LAB	0	0	3	3	2
SESSIONAL							
HS	HU 481	TECHNICAL REPORT WRITING & LANGUAGE PRACTICE	0	0	2	2	1
		Total: Twelve	17	0	17	34	28

Proposed Course Curriculum of B.Tech Mechanical Engineering Programme

5th SEMESTER

Subject Type	Subject Code	Subject Name	Contact Hours/Week				Total Credits
			L	T	P	Total	
THEORY:							
PC	ME 501	HEAT & MASS TRANSFER	3	0	0	3	3
PC	ME 502	DESIGN OF MACHINE ELEMENTS-I	3	0	0	3	3
PC	ME 503	DYNAMICS OF MACHINES	3	0	0	3	3
PC	ME 504	METROLOGY & MEASUREMENT	3	0	0	3	3
HU	HU 501	VALUES & ETHICS	2	0	0	2	2
PE-I	ME 505A	IC ENGINES & REFRIGERATION	3	0	0	3	3
	ME 505B	INTRODUCTION TO NANO-SCIENCE AND TECHNOLOGY					
	ME 505C	NON-DESTRUCTIVE EVALUATION & TESTING					
PRACTICAL:							
PC	ME591	HEAT & MASS TRANSFER LAB	0	0	3	3	2
PC	ME 592	MACHINE DESIGN-I	0	0	3	3	2
PC	ME 593	DYNAMICS OF MACHINES LAB	0	0	3	3	2
PC	ME 594	METROLOGY & MEASUREMENT LAB	0	0	3	3	2
PE LAB-I	ME 595A	IC ENGINES & REFRIGERATION LAB	0	0	3	3	2
	ME 595 B	NANO-SCIENCE AND TECHNOLOGY LAB					
	ME 595 C	NON-DESTRUCTIVE EVALUATION & TESTING LAB					
SESSIONAL							
PROJECT	ME 581	MINI PROJECT-I	0	0	3	3	2
MC	ME 582	SEMINAR	0	0	2	2	0
		TOTAL: Thirteen	17	0	20	37	29

6th SEMESTER

Subject Type	Subject Code	Subject Name	Contact Hours/Week				Total Credits
			L	T	P	Total	
THEORY:							
PC	ME601	MACHINING PRINCIPLES & MACHINE TOOLS	3	0	0	3	3
PC	ME 602	DESIGN OF MACHINE ELEMENTS-II	3	0	0	3	3
PE-II	ME 603 A	FLUID POWER CONTROL	3	0	0	3	3
	ME 603 B	INDUSTRIAL ROBOTICS					
	ME 603 C	MECHATRONICS					
PE-III	ME 604A	MATERIALS HANDLING	3	0	0	3	3
	ME 604B	POWER PLANT ENGINEERING					
	ME 604C	GAS DYNAMICS AND JET PROPULSION					
OE-I	ME605A	COMPUTATIONAL FLUID DYNAMICS	3	0	0	3	3
	ME 605B	RENEWABLE ENERGY SYSTEMS					
	ME605C	COMPOSITE MATERIALS					
PRACTICAL:							
PE LAB-II	ME 691 A	FLUID POWER CONTROL LAB	0	0	3	3	2
	ME 691 B	INDUSTRIAL ROBOTICS LAB					
	ME 691 C	MECHATRONICS LAB					
PC	ME 692	MACHINING & MACHINE TOOLS LAB	0	0	3	3	2
PC	ME 693	MACHINE DESIGN-II	0	0	3	3	2
SESSIONAL							
PROJECT	ME 681	MINI PROJECT-II	0	0	3	3	2
MANDATORY	MC 682	GROUP DISCUSSION	0	0	2	2	0
		TOTAL: Ten	15	0	14	29	23

Summer training at Industry after sixth semester examination

Proposed Course Curriculum of B.Tech Mechanical Engineering Programme

7th SEMESTER

Subject Type	Subject Code	Subject Name	Contact Hours/Week				Total Credits
			L	T	P	Total	
THEORY:							
PC	ME 701	ADVANCED MANUFACTURING TECHNOLOGY	3	0	0	3	3
PE-IV	ME 702A	ADVANCED WELDING TECHNOLOGY	3	0	0	3	3
	ME 702B	QUANTUM METHODS IN MOLECULAR SIMULATIONS					
	ME 702C	ADVANCED POWER GENERATION					
PE-V	ME 703 A	TRIBOLOGY	3	0	0	3	3
	ME 703 B	FRACTURE MECHANICS					
	ME 704 C	HYDRO, WIND AND WAVE POWER					
OE-II	ME 704A	OPERATIONS RESEARCH	3	0	0	3	3
	ME704B	FINITE ELEMENT METHOD					
	ME 704C	SAFETY & OCCUPATIONAL HEALTH					
OE-III	ME 705A	QUALITY & RELIABILITY ENGINEERING	3	0	0	3	3
	ME 705B	BIOMECHANICS & BIOMATERIALS					
	ME 705C	ENERGY CONSERVATION & MANAGEMENT					
PRACTICAL:							
PC	ME 791	ADVANCED MANUFACTURING LAB	0	0	3	3	2
SESSIONAL:							
PW	ME 781	PROJECT- I	0	0	6	6	3
PW	ME 782	DESIGN OF MECHANICAL SYSTEM	0	0	3	3	2
PW	ME 783	VIVA-VOCE ON VACATIONAL TRAINING	0	0	0	0	2
		TOTAL: Nine	15	0	12	27	24

8th SEMESTER

Subject Type	Subject Code	Subject Name	Contact Hours/Week				Total Credits
			L	T	P	Total	
THEORY:							
HU	HU 801	PRODUCTION & OPERATIONS MANAGEMANT	2	0	0	2	2
PE-VI	ME 802A	AUTOMOBILE ENGINEERING	3	0	0	3	3
	ME 802B	CAD/CAM					
	ME 802C	TURBO MACHINERY					
OE-IV	ME 803A	NUMERICAL HEAT TRANSFER	3	0	0	3	3
	ME 803B	MAINTENANCE ENGINEERING					
	ME803C	AUTOMATION & CONTROL					
SESSIONAL:							
PW	ME881	PROJECT II	0	0	12	12	6
PW	ME 882	GRAND VIVA	0	0	0	0	2
		TOTAL: SIX	8	0	12	20	16

HS	Humanities and Social Sciences	PC	Professional -Core
BS	Basic Sciences	PE	Professional -Electives
ES	Engineering Sciences	OE	Open Electives

Credit points evaluation for B.Tech (ME) Programme(NIT/JISC/GNIT)
Total Credit: 199

Humanities and Social Sciences including Management (HS)

Course Code	Credits	Total Credits	Range of Total credits (%) as per AICTE Min.	Max.	Assigned Credits (for Total=199) for Autonomy syllabus(%)
HU101	2	11	5	10	5.55
HU191	1				
HU 281	1				
HU 401	2				
HU 481	1				
HU 501	2				
HU 801	2				

Basic Sciences including Mathematics, Physics, Chemistry, Biology (BS)

Course Code	Credits	Total Credits	Range of Total credits (%) as per AICTE Min.	Max.	Assigned Credits (for Total=199) for Autonomy syllabus(%)
CH201	4	33	15	20	16.58
M101	4				
CH291	2				
PH101	4				
M201	4				
PH191	2				
M(ME)301	3				
PH(ME)301	3				
PH(ME)391	2				
M(ME)401	3				
M(ME)491	2				

Engineering Sciences (ES)

Course Code	Credits	Total Credits	Range of Total credits (%) as per AICTE norms Min.	Max.	Assigned Credits (for Total=199) for Autonomy syllabus(%)

ME101	4	33	15	20	16.58
EE101	4				
ME191	2				
EE191	2				
CS201	3				
ME201	4				
EC201	4				
EC291	2				
ME291	2				
CS291	2				
EE(ME)301	3				
EE(ME)391	1				

Professional Subjects-Core (PC)

Course Code	Credits	Total Credits	Range of Total credits (%) as per AICTE norms Min.	Max.	Assigned Credits (for Total=199) for Autonomy syllabus(%)
ME301	3	69	30	40	34.67
ME302	3				
ME303	3				
ME391	2				
ME 392	2				
ME401	3				
ME402	3				
ME403	3				
ME404	3				
ME 491	2				
ME 492	2				
ME 493	2				
ME 494	2				
ME501	3				
ME 502	3				
ME 503	3				
ME 504	3				
ME 591	2				
ME 592	2				
ME 593	2				
ME 594	2				
ME 601	3				
ME 602	3				
ME 692	2				
ME 693	2				
ME 701	3				
ME 791	2				

Professional Subjects – Electives (PE)

Course Code	Credits	Total Credits	Range of Total credits (%) as per AICTE norms Min.	Max.	Assigned Credits (for Total=199) for Autonomy syllabus(%)
ME 505(A/B/C)	3	22	10	15	11.05
ME 595(A/B/C)	2				
ME 603(A/B/C)	3				
ME 604(A/B/C)	3				
ME 702(A/B/C)	3				
ME 703(A/B/C)	3				
ME 802(A/B/C)	3				
ME 691 (A/B/C)	2				

Open Subjects- Electives (OE)

Course Code	Credits	Total Credits	Range of Total credits (%) as per AICTE norms Min.	Max.	Assigned Credits (for Total=199) for Autonomy syllabus(%)
ME 605(A/B/C)	3	12	5	10	6.03
ME 704(A/B/C)	3				
ME 705(A/B/C)	3				
ME 803(A/B/C)	3				

Project Work, Seminar and/or Internship in Industry

Course Code	Credits	Total Credits	Range of Total credits (%) as per AICTE norms Min.	Max.	Assigned Credits (for Total=199) for Autonomy syllabus(%)
ME 581	**2**	20	10	15	10.05
ME 681	2				
ME 781	3				
ME 782	2				
ME 881	6				
ME 882	2				
ME 783	2				
XC 181	1				