

Course Structure

B.Tech in Mechanical Engineering (2015-19)

First Year (Semester I and II)

Year: 1st

Semester: I

Group A

Course Code	Course Title	L	T	P	Credit
JA1010	Engineering Mathematics-I	3	1	0	3.5
OA1210	Engineering Physics	3	1	2	4.5
LA1210	Essentials of Mechanical Engineering	3	1	2	4.5
HA1210	Professional Communication-I	3	0	1	3.5
DA1210	Computer Fundamental & C Programming	3	0	2	4
BA1010	Environmental Science	2	0	0	2
LA1220	Engineering Graphics	1	0	2	2
HA1310	Soft Skills Development	0	0	2	1
	Total				25

Evaluation Scheme for *Soft Skills* Course will be as under:

Course	Evaluation Scheme (%)				
	Attendance	Test-1	Test-2	Final Test	Total
Soft Skills	10	30	30	30	100

Year: 1st

Semester: I

Group B

Course Code	Course Title	L	T	P	Credit
JA1010	Engineering Mathematics-I	3	1	0	3.5
BA1210	Engineering Chemistry	3	1	2	4.5
EA1210	Introduction to Electrical Engineering	3	1	2	4.5
FA1210	Introduction to Electronics & Communication	3	1	2	4.5
HA1210	Professional Communication-I	3	1	0	3.5
DA1210	Computer Fundamental & C Programming	3	0	2	4
LA1110	Workshop Practice	0	0	2	1
	Total				25.5

Year: 1st

Semester: II

Group A

Course Code	Course Title	L	T	P	Credit
JA2010	Engineering Mathematics-II	3	1	0	3.5
BA1210	Engineering Chemistry	3	1	2	4.5
EA1210	Introduction to Electrical Engineering	3	1	2	4.5
FA1210	Introduction to Electronics & Communication	3	1	2	4.5
HA2210	Professional Communication-II	3	0	1	3.5
DA2211	Computer Programming in C++	3	0	2	4
LA1110	Workshop Practice	0	0	2	1
	Total				25.5

Year: 1st

Semester: II

Group B

Course Code	Course Title	L	T	P	Credit
JA2010	Engineering Mathematics-II	3	1	0	3.5
OA1210	Engineering Physics	3	1	2	4.5
LA1210	Essentials of Mechanical Engineering	3	1	2	4.5
HA2210	Professional Communication-II	3	0	1	3.5
DA2211	Computer Programming in C++	3	0	2	4
BA1010	Environmental Science	2	0	0	2
LA1220	Engineering Graphics	1	0	2	2
HA1310	Soft Skills Development	0	0	2	1
	Total				25

Evaluation Scheme for Soft Skills Course will be as under:

Course	Evaluation Scheme (%)				
	Attendance	Test-1	Test-2	Final Test	Total
Soft Skills	10	30	30	30	100

Year: 2nd**Semester: III**

Course Code	Course Title	L	T	P	Credit
LA3210	Material Science	3	1	2	4.5
LA3010	Engineering Thermodynamics	3	1	0	3.5
LA3020	Strength of Materials	3	1	0	3.5
LA3030	Manufacturing Processes I	3	0	0	3
LA3040	Kinematics of Machines	3	1	0	3.5
EA32L0	Electrical Machines	3	1	2	4.5
LA3110	Machine Drawing	0	0	2	1
	Total				23.5

Year: 2nd**Semester: IV**

Course Code	Course Title	L	T	P	Credit
JA3010	Engineering Mathematics III	3	1	0	3.5
LA4210	Manufacturing Processes II	3	0	2	4
LA4220	Dynamics of Machines	3	1	2	4.5
LA4230	Fluid Mechanics	3	1	2	4.5
LA4010	Energy Conversion	3	1	0	3.5
LA4020	Machine Design-I	3	1	0	3.5
LA4410	Industrial Tour	0	0	2	1
LA4Z10	Value Addition Training	0	0	2	1
	Total				25.5

List of Courses for Value Addition Training

Pro-E, ANSYS, Catia, Solid Works etc.

Year: 3rd**Semester: V**

Course Code	Course Title	L	T	P	Credit
LA5210	Fluid Machinery	3	1	2	4.5
LA5220	Heat & Mass Transfer	3	1	2	4.5
LA5230	Mechanical Measurements	3	1	2	4.5
LA5010	Industrial Engineering and Management	3	0	0	3
LA5020	Machine Design II	3	1	0	3.5
LA5310	Aptitude Building I	0	0	2	1
	Total				21

Year: 3rd**Semester: VI**

Course Code	Course Title	L	T	P	Credit
LA6210	Internal Combustion Engines	3	1	2	4.5
LA6220	Computer Aided Design (CAD)	3	1	2	4.5
LA6230	Refrigeration and Air Conditioning	3	1	2	4.5
LA6010	Operation Research	3	1	0	3.5
GC5010	Engineering Economics	2	0	0	2
LA6110	Project Phase-I	0	0	4	2
LA6310	Aptitude Building-II	0	0	2	1
	Total				22

After VI semester student will undergo minimum 6 weeks Industrial Training which will be evaluated in the VII semester.

Year: 4th**Semester: VII**

Course Code	Course Title	L	T	P	Credit
LA7210	Computer Integrated Manufacturing	3	0	2	4
LA7220	Automobile Engineering	3	1	2	4.5
LA7010	Total Quality Management	3	0	0	3
LA7020	Industrial Automation and Robotics	3	1	0	3.5
LA7030	Power Plant Engineering	3	0	0	3
LA7110	Project Phase II	0	0	4	2
LA7510	Industrial Training and Presentation *	0	0	2	4
	Total				24

* During Summer Vacation after VI semester students are compulsorily required to attend Industrial Training of 6-8 weeks which will be evaluated in VII Semester under Industrial Training Presentation (LA7510).

Year: 4th**Semester: VIII**

Course Code	Course Title	L	T	P	Credit
	Open Elective	3	0	0	3
	UG Elective –I	3	1	0	3.5
	UG Elective –II	3	1	0	3.5
	UG Elective –III	3	1	0	3.5
LA8110	Project Phase–III	0	0	8	4
	Total				17.5

List of UG Electives

Course Code	Course Title
LA8610	Non-Conventional Energy Resources
LA8620	Computational Methods for Heat Transfer and Fluid Flow
LA8640	Machine Tool Design
LA8650	Advanced Engineering Materials
LA8660	Product Design & Development
LA8670	Mechanical Vibrations
LA8680	Finite Element Methods
LA8690	Automatic Control
LA8600	Mechatronics

B.TECH. MECHANICAL ENGINEERING (SPECIALIZATION IN AUTOMOBILE ENGG)**BASIC COURSE COMMON WITH ME UPTO VII SEM****VIII SEM ELECTIVES**

ELECTIVE I (SELECT –ONE)			ELECTIVE II (SELECT –ONE)			ELECTIVE III & IV (SELECT –TWO)		
S NO	SUBJ CODE	SUBJ NAME	S NO	SUBJ CODE	SUBJ NAME	S NO	SUBJ CODE	SUBJ NAME
1	LA86A0	Vehicle Design Data & Characteristics	1	LA86F0	Automotive Engine Component Design	1	LA86M0	Automotive Ergonomics & Safety
2	LA86C0	Automotive Transmission Systems	2	LA86G0	Automotive Chassis Component Design	2	LA86L0	Automotive Materials And Manufacturing Processes
			3	LA86B0	Emerging Automotive Technologies	3	LA86I0	Alternate Fuels & Energy Systems
			4	LA86E0	Automotive Pollution And Control	4	LA86D0	Special Vehicles & Equipments
						5	LA86H0	Two & Three Wheelers
						6	LA86J0	Vehicle & Transport Management
						7	LA86K0	Supply Chain Management
						8	LA86J0	Marketing Management

List of Open Electives (To be conducted in VIII Semester)

Sl. No.	Branch	Subject Code	Name of Elective subjects
1	Physics	OA8710 OA8720	1. Nano Scale Science and Technology 2. Photonics Technology
2	EE	EA8710 EA8720	1. Non-Conventional Energy Resources 2. Instrumentation and Process control
3	ME	LA8710 LA8720	1. Entrepreneurship development 2. Quality Management
4	Civil	CA8710 CA8720	1. Environment and Ecology 2. GIS
5	CSE	DA8710 DA8720	1. Business Intelligence 2. Artificial Intelligence
6	IT	IA8710 IA8720	1. Multi-Media Technology 2. IT In Business
7	ECE	FA8710 FA8720	1. Consumer Electronics 2. Laser System & Application
8	Humanities	HA8710 HA8720	1. Industrial Psychology 2. Human Values and Ethics
9	MBA	GA8710 GA8720 GA8730 GA8740	1. Organizational Behavior 2. HRD 3. Digital Marketing 4. Financial Modeling with Spread sheet

Summary of the Credits

Year	Semester	Credit	Year Credit
First Year	I	25/25.5	50.5
	II	25/25.5	
Second Year	III	23.5	49
	IV	25.5	
Third Year	V	21	43
	VI	22	
Fourth Year	VII	24	41.5
	VIII	17.5	
Total			184

A. Evaluation Scheme for the following Courses will be as under:

	Evaluation Scheme (%)				
	Attendance	Test-1	Test-2	Final Test	Total
Aptitude Building-1	10	30	30	30	100
Aptitude Building-2	10	30	30	30	100
Value Addition Training	10	30	30	30	100
Soft Skills	10	30	30	30	100

B. Evaluation Scheme for Project will be as under:

Course	Evaluation Scheme (%)				
	Synopsis	Presentation	Report	Viva-Voce	Total
Project Phase-I	10	15	25	50	100
Project Phase-II					
Project Phase-III					

Project Phase-I & II will be evaluated by the Committee comprising of the following:

1. Head of the Department – Chairman
2. Teacher In-charge – Member
3. One nominee appointed by Director (Academic) – Member

Project Phase-III will be evaluated by the Committee comprising of the following:

1. Head of the Department – Chairman
2. Teacher In-charge – Member
3. One nominee appointed by Director (Academic) – Member
4. One nominee appointed by Vice Chancellor – Member

C. Evaluation Scheme for Industrial Training will be as under:

Course	Evaluation Scheme (%)			
	Training Report	Presentation	Monitoring	Total
Industrial Training	25	50	25	100

*** Subject to modification as may be announced**