



# SRI INDU INSTITUTE OF ENGINEERING & TECHNOLOGY

Sheriguda (V), Ibrahimpatnam (M), Hyderabad, R.R. Dist., Telangana State-501 510.

## DEPARTMENT OF MECHANICAL ENGINEERING

### Mechanical Engineering -R16 Syllabus

#### JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

#### B.TECH. I, II, III & IV COURSE STRUCTURE (2016-17)

#### I YEAR I SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1	MA101BS	Mathematics-I	3	1	0	3
2	MA102BS	Mathematics-II	4	1	0	4
3	PH103BS	Engineering Physics	3	0	0	3
4	CS104ES	Computer Programming in C	3	0	0	3
5	ME105ES	Engineering Mechanics	3	0	0	3
6	ME106ES	Engineering Graphics	2	0	4	4
7	PH107BS	Engineering Physics Lab	0	0	3	2
8	CS108ES	Computer Programming in C Lab	0	0	3	2
9	*EA109MC	NSS	0	0	0	0
		<b>Total Credits</b>	<b>18</b>	<b>2</b>	<b>10</b>	<b>24</b>

#### I YEAR II SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1	AP201BS	Applied Physics	3	0	0	3
2	CH202BS	Engineering Chemistry	4	0	0	4
3	MA203BS	Mathematics-III	4	1	0	4
4	EN204HS	Professional Communication in English	3	0	0	3
5	EE205ES	Basic Electrical & Electronics Engineering	4	0	0	4
6	CH206BS	Engineering Chemistry Lab	0	0	3	2
7	EN207HS	English Language Communication Skills Lab	0	0	3	2
8	ME208ES	Engineering Workshop	0	0	3	2
9	*EA209MC	NCC/NSO	0	0	0	0
		<b>Total Credits</b>	<b>18</b>	<b>1</b>	<b>9</b>	<b>24</b>

\*Satisfactory/Unsatisfactory

## II YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA301BS	Mathematics - IV	4	1	0	4
2	ME304ES	Thermodynamics	4	1	0	4
3	ME302ES	Kinematics of Machinery	4	1	0	4
4	ME305ES	Metallurgy and Material Science	3	0	0	3
5	ME303ES	Mechanics of Solids	3	1	0	3
6	ME306ES	Fuels and Lubricants Lab	0	0	3	2
7	ME307ES	Mechanics of Solids Lab	0	0	3	2
8	ME308ES	Metallurgy and Material Science Lab	0	0	3	2
9	*MC300HS	Gender Sensitization Lab	0	0	3	0
		<b>Total Credits</b>	<b>18</b>	<b>4</b>	<b>12</b>	<b>24</b>

## II YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	ME403ES	Dynamics of Machinery	4	1	0	4
2	ME401ES	Fluid Mechanics and Hydraulic Machines	4	1	0	4
3	ME404ES	Machine Drawing	2	0	4	4
4	ME405ES	Manufacturing Process	3	0	0	3
5	SM405MS	Business Economic and Financial Analysis	3	0	0	3
6	ME406ES	Kinematics and Dynamics Lab	0	0	3	2
7	ME407ES	Fluid Mechanics and Hydraulic Machines Lab	0	0	3	2
8	ME408ES	Manufacturing Process Lab	0	0	3	2
9	*MC400ES	Environmental Science and Technology	3	0	0	0
		<b>Total Credits</b>	<b>18</b>	<b>2</b>	<b>15</b>	<b>24</b>

\*Satisfactory/Unsatisfactory

## III YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	ME501PC	Design of Machine Members – I	4	1	0	4
2	ME502PC	Thermal Engineering-I	4	1	0	4
3	ME503PC	Metrology and Machine Tools	4	1	0	4
4	SM504MS	Fundamentals of Management	3	0	0	3
5		Open Elective – I	3	0	0	3
6	ME505PC	Thermal Engineering Lab	0	0	3	2
7	ME506PC	Machine Tools Lab	0	0	3	2
8	ME507PC	Engineering Metrology Lab	0	0	3	2
9	*MC500HS	Professional Ethics	3	0	0	0
		<b>Total Credits</b>	<b>21</b>	<b>3</b>	<b>9</b>	<b>24</b>

### III YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	ME601PC	Thermal Engineering –II	4	1	0	4
2	ME602PC	Design of Machine Members-II	4	1	0	4
3	ME603PC	Heat Transfer	4	1	0	4
4		<b>Open Elective - II</b>	3	0	0	3
5		Professional Elective - I	3	0	0	3
6	ME604PC	Heat Transfer Lab	0	0	3	2
7	ME605PC	CADD and MATLAB	0	0	3	2
8	EN606HS	Advanced English Communication Skills Lab	0	0	3	2
		<b>Total Credits</b>	<b>18</b>	<b>3</b>	<b>9</b>	<b>24</b>

#### Professional Elective - I

ME611PE	Finite Element Methods
ME612PE	Refrigeration and Air Conditioning
ME613PE	Machine Tool Design
ME614PE	IC Engines and Gas Turbines

\***Open Elective** subjects' syllabus is provided in a separate document.

\***Open Elective** – Students should take Open Electives from the List of Open Electives Offered by Other Departments/Branches Only.

**Ex:** - A Student of Mechanical Engineering can take Open Electives from all other departments/branches except Open Electives offered by Mechanical Engineering Dept.

#### LIST OF OPEN ELECTIVES OFFERED FOR MECHANICAL ENGG. DEPARTMENT B.TECH. III YEAR

S.No.	Name of the Department Offering Open Electives	Open Elective – I (Semester – V)	Open Elective – II (Semester – VI)
1	Mechanical Engg.	ME511OE: Optimization Techniques ME512OE: Computer Graphics ME513OE: Introduction	ME621OE: World Class Manufacturing ME622OE: Fundamentals of Robotics ME623OE: Fabrication

#### IV YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	ME701PC	CAD/CAM	4	0	0	4
2	ME702PC	Instrumentation and Control System	4	0	0	4
3		<b>Professional Elective – II</b>	3	0	0	3
4		<b>Professional Elective – III</b>	3	0	0	3
5		<b>Professional Elective – IV</b>	3	0	0	3
6	ME703PC	CAD/CAM Lab	0	0	3	2
7	ME704PC	Instrumentation and Control Systems Lab	0	0	3	2
8	ME705PC	Industry Oriented Mini Project	0	0	3	2
9	ME706PC	Seminar	0	0	2	1
		<b>Total Credits</b>	<b>17</b>	<b>0</b>	<b>11</b>	<b>24</b>

#### IV YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	-	<b>Open Elective – III</b>	3	0	0	3
2		<b>Professional Elective – V</b>	3	0	0	3
3		<b>Professional Elective – VI</b>	3	0	0	3
4	ME801PC	Major Project	0	0	30	15
		<b>Total Credits</b>	<b>9</b>	<b>0</b>	<b>30</b>	<b>24</b>

#### Professional Elective - I

ME611PE	Finite Element Methods
ME612PE	Refrigeration and Air Conditioning
ME613PE	Machine Tool Design
ME614PE	IC Engines and Gas Turbines

#### Professional Elective - II

ME721PE	Composite materials
ME722PE	Industrial Management
ME723PE	Power Plant Engineering
ME724PE	Operations Research

#### Professional Elective – III

ME731PE	Engineering Tribology
ME732PE	Computational Fluid Dynamics
ME733PE	Robotics
ME734PE	CNC Technology

#### Professional Elective - IV

ME741 PE	Mechanical Vibrations
ME742PE	Turbo Machines
ME743PE	MEMS
ME744PE	Additive Manufacturing Technology

#### Professional Elective - V

ME851PE	Automation in Manufacturing
ME852PE	Fluid Power System
ME853PE	Renewable Energy Sources
ME854PE	Production Planning and Control

#### Professional Elective - VI

ME861PE	Automobile Engineering
ME862PE	Advanced Mechanics of Solids
ME863PE	Unconventional Machining Processes
ME864PE	Advanced Materials Technology

**\*Open Elective** subjects' syllabus is provided in a separate document.

**\*Open Elective** – Students should take Open Electives from the List of Open Electives Offered by Other Departments/Branches Only.

**Ex:** - A Student of Mechanical Engineering can take Open Electives from all other departments/branches except Open Electives offered by Mechanical Engineering Dept.

#### LIST OF OPEN ELECTIVES OFFERED FOR MECHANICAL ENGG. DEPARTMENT B.TECH. IV YEAR

S.No	Name of the Department Offering Open Electives	Open Elective –III (Semester – VIII)
1	Mechanical Engg.	ME831OE: Total Quality Management ME832OE: Industrial Safety, Health, and Environmental Engineering ME833OE: Basics of Thermodynamics ME834OE: Reliability Engineering