



# Vidya Jyothi Institute of Technology (Autonomous)

(Accredited by NAAC & NBA, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)  
(Aziz Nagar, C.B.Post, Hyderabad -500075)

## MECHANICAL ENGINEERING R18

### I YEAR I SEMESTER

### COURSE STRUCTURE

Subject Code	Subject Name	L	T	P/D	Total Credits
A21001	English	2	0	0	2.0
A21002	Mathematics-I	3	1	0	4.0
A21004	Chemistry	3	1	0	4.0
A21501	Programming For Problem Solving-I	2	0	0	2.0
A21081	English Language Skills Lab	0	0	2	1.0
A21083	Chemistry Lab	0	0	3	1.5
A21381	Engineering Workshop	0	1	3	2.5
A21581	Programming For Problem Solving Lab-I	0	0	2	1.0
<b>TOTAL CREDITS</b>		<b>10</b>	<b>3</b>	<b>10</b>	<b>18</b>

### I YEAR II SEMESTER

### COURSE STRUCTURE

Subject Code	Subject Name	L	T	P/D	Total Credits
A22006	Mathematics-II	3	1	0	4.0
A22007	Engineering Physics	3	1	0	4.0
A22302	Engineering Graphics & Modeling	1	0	3	2.5
A22303	Engineering Mechanics	4	0	0	4.0
A22502	Programming For Problem Solving-II	2	0	0	2.0
A22084	English communication Skills Lab (ECSL)	0	0	2	1.0
A22085	Engineering Physics Lab	0	0	3	1.5
A22582	Programming For Problem Solving Lab-II	0	0	2	1.0
<b>TOTAL CREDITS</b>		<b>13</b>	<b>2</b>	<b>10</b>	<b>20</b>

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## II YEAR I SEMESTER

Subject Code	Subject Name	L	T	P/D	Total Credits
A23009	Numerical Methods & Partial Differential Equations	3	-	-	3.0
A23304	Materials Technology	3	-	-	3.0
A23305	Mechanics of Solids	4	-	-	4.0
A23306	Thermodynamics	3	-	-	3.0
A23010	Professional Communications	3	-	-	2.0
A23307	Production Technology	3	-	-	3.0
A23383	Metallurgy and Mechanics of Solids Lab	0	-	2	1.0
A23384	Production Technology Lab	0	-	2	1.0
A23MC1	Environmental Science	2	-	-	-
<b>Total No.of Credits</b>		<b>21</b>	<b>-</b>	<b>4</b>	<b>20</b>

## II YEAR II SEMESTER

Subject Code	Subject Name	L	T	P/D	Total Credits
A24013	Probability and Statistics	3	-	-	3.0
A24211	Basic Electrical Engineering	3	-	-	3.0
A24308	Machine Drawing & Drafting	3	-	-	3.0
A24309	Kinematics of Machines	3	-	-	3.0
A24310	Thermal Engineering	3	-	-	3.0
A24311	Mechanics of Fluids and Hydraulic Machines	3	-	-	3.0
A24385	Mechanics of Fluids and Hydraulic Machines Lab	0	-	2	1.0
A24286	Basic Electrical Engineering Lab	0	-	2	1.0
A24MC1	Gender Sensitization	2	-	-	-
<b>Total No.of Credits</b>		<b>20</b>	<b>-</b>	<b>4</b>	<b>20</b>

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## **COURSE STRUCTURE FOR B.TECH III YEAR**

### **B.Tech III Year I Semester:**

<b>S.N o.</b>	<b>Course Code</b>	<b>Course Title</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
1	A25016	Managerial Economics and Financial Analysis	4	0	0	3
2	A25312	Dynamics of Machinery	3	0	0	3
3	A25313	Design of Machine Members-I	3	0	0	3
4	A25314	Applied Thermodynamics	3	0	0	3
5	A25315	Automobile Engineering	3	0	0	3
	A25316	Composite Materials				
	A25317	Additive Manufacturing				
6	A25318	Elements of Mechanical Engineering	3	0	0	3
	A25319	Product Engineering				
7	A25386	Thermal Engineering Lab	0	0	2	1
8	A25087	Advanced Communication Skills Lab	0	0	2	1
9	A25TP1	Quantitative Methods & Logical Reasoning	2	0	0	1
<b>Total</b>			<b>21</b>	<b>0</b>	<b>4</b>	<b>21</b>

### **B.Tech III Year II Semester:**

<b>S.N o.</b>	<b>Course Code</b>	<b>Course Title</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
1	A26320	Design of Machine Members-II	3	0	0	3
2	A26321	Heat Transfer	3	0	0	3
3	A26322	Metrology & Machine Tools	3	0	0	3
4	A26323	Finite Element Method	3	0	0	3
5	A26324	Refrigeration And Air Conditioning	3	0	0	3
	A26325	Industrial Management				
	A26326	Automation In Manufacturing				
6	A26327	Optimisation Techniques	3	0	0	3
	A26328	Maintenance and Safety Engineering				
7	A26387	Heat Transfer Lab	0	0	2	1
8	A26388	Metrology & Machine Tools Lab	0	0	2	1
9	A26TP1	Personality Development & Behavioural Skills	2	0	0	1
<b>Total</b>			<b>20</b>	<b>0</b>	<b>4</b>	<b>21</b>



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## B.Tech IV Year I Semester

S. No.	Course Code	Course Title	L	T	P	C
1	A27329	Instrumentation and Control Systems	3	0	0	3
2	A27330	CAD/CAM	3	0	0	3
3	A27331	Robotics	3	0	0	3
	A27332	Gas Dynamics				
	A27333	Production And Operations Management				
4	A27334	Operations Research	3	0	0	3
	A27335	Energy Conservation And Management				
	A27336	Fluid Power Systems				
5	A27337	Basic Automobile Engineering	3	0	0	3
	A27338	Material Science Engineering				
6	A27389	CAD/CAM Lab	0	0	2	1
7	A27390	Instrumentation and Control Systems Lab	0	0	2	1
8	A273P1	Industry Oriented Mini Project	0	0	0	3
<b>Total</b>			<b>15</b>	<b>0</b>	<b>4</b>	<b>20</b>

## B.Tech IV Year II Semester

S. No.	Course Code	Course Title	L	T	P	C
1	A28339	Production Planning & Control	3	0	0	3
2	A28340	Unconventional Machining And Processes	3	0	0	3
3	A283TS	Technical Seminar	3	1	0	2
4	A283CV	Comprehensive Viva Voce	0	0	0	2
5	A283P2	Major Project	0	0	0	10
<b>Total</b>			<b>18</b>	<b>1</b>	<b>0</b>	<b>20</b>



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## MECHANICAL ENGINEERING R15

### I YEAR I SEMESTER

### COURSE STRUCTURE

Subject Code	Subject Name	L	T	P/D	Total Credits	Total Hours	Total Marks
A11001	English-I	2	0	0	2	2	100
A11002	Mathematics - I	4	1	0	3	4	100
A11003	Engineering Physics-I	3	1	0	3	4	100
A11501	C Programming	3	1	0	3	4	100
A11301	Engineering Graphics-I	2	0	3	3	5	100
A11302	Engineering Mechanics – I	3	1	0	3	4	100
A11581	C Programming Lab	0	0	3	2	3	75
A11081	English Language Communication Skills Lab-I	0	0	3	2	3	75
A11082	Engineering Physics Lab	0	0	3	2	3	75
A11381	Engineering Workshop	0	0	3	2	3	75
	Total	17	07	15	25	35	900

### I YEAR II SEMESTER

### COURSE STRUCTURE

Subject Code	Subject Name	L	T	P/D	Total Credits	Total Hours	Total Marks
A12005	English – II	2	0	0	2	2	100
A12006	Mathematics – II	4	1	0	3	4	100
A12007	Engineering Physics-II	3	1	0	3	4	100
A12008	Applied Chemistry	3	1	0	3	4	100
A12304	Engineering Mechanics – II	3	1	0	3	4	100
A12305	Engineering Graphics – II	2	0	3	3	5	100
A12085	English Language Communication Skills Lab-II	0	0	3	2	3	75
A12086	Engineering Physics and Chemistry Lab	0	0	3	2	3	75
A12087	IT & Engineering Workshop	0	0	3	2	3	75
	Total	17	7	12	23	32	825

Note: All End Examinations (Theory and Practical) are of three hours duration.

**L – Lecture**

**T – Tutorial**

**P – Practical**

**D – Drawing**



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## II YEAR I SEMESTER

## COURSE STRUCTURE

Subject Code	Subject Name	L	T	P/D	Total Credits	Total Hours	Total Marks
A13013	Numerical Methods	3	1	0	3	4	100
A13207	Electrical and Electronics Engineering	3	1	0	3	4	100
A13308	Mechanics of Solids	4	1	0	4	5	100
A13309	Thermodynamics	4	1	0	4	5	100
A13310	Metallurgy and Material science	4	1	0	4	5	100
A13011	Environmental science	3	1	0	2	4	100
A13283	Electrical and Electronics Engineering Lab	0	0	3	2	3	75
A13383	Metallurgy and Mechanics of solids Lab	0	0	3	2	3	75
A13MC2	Intellectual Property Rights And Cyber Laws	2	0	0	0	2	50
	<b>Total</b>	<b>23</b>	<b>6</b>	<b>6</b>	<b>24</b>	<b>35</b>	<b>800</b>

## II YEAR II SEMESTER

## COURSE STRUCTURE

Subject Code	Subject Name	L	T	P/D	Total Credits	Total Hours	Total Marks
A14312	Production Technology	3	1	0	3	4	100
A14313	Kinematics of Machinery	4	1	0	4	5	100
A14314	Thermal Engineering-I	3	1	0	3	4	100
A14315	Mechanics of Fluids and Hydraulic Machines	4	1	0	4	5	100
A14316	Machine Drawing	0	6	0	3	6	100
A14015	Probability and Statistics	3	0	0	3	3	100
A14384	Production Technology Lab	0	0	3	2	3	75
A14385	Mechanics of Fluids and Hydraulic Machines Lab	0	0	3	2	3	75
A14MC3	Professional Communication	2	0	0	0	2	50
	<b>Total</b>	<b>19</b>	<b>10</b>	<b>6</b>	<b>24</b>	<b>35</b>	<b>800</b>

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**L – Lecture**

**T – Tutorial**

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S. No.	Code	Subject	L	T/P/D	Credits
<b>III Year I Semester</b>					
1	A15317	Design of Machine Members-I	3	1	3
2	A15318	Thermal Engineering-II	3	1	3
3	A15319	Dynamics of Machinery	3	1	3
4	A15320	Machine tools and Metrology	3	1	3
5	A15321 A15322 A15323	<b>PROFESSIONAL ELECTIVE – I</b> Automobile Engineering Computational Fluid Dynamics Welding Technology	3	1	3
6	A15324 A15348	<b>OPEN ELECTIVE – I</b> Elements of Mechanical Engineering Product Engineering	3	1	3
7	A15386	Thermal Engineering lab	-	2	2
8	A15387	Metrology and machine Tools Lab	-	2	2
9	A15TP1	Personality Development & Behavioral Skills	2	-	2
		<b>Total Credits</b>	<b>20</b>	<b>10</b>	<b>24</b>
<b>III Year II Semester</b>					
1	A16326	Design of Machine Members-II	3	1	3
2	A16327	Heat Transfer	3	1	3
3	A16328	Finite Element Methods	3	1	3
4	A16018	Managerial Economics and Financial Analysis	3	1	3
5	A16329 A16330 A16331	<b>PROFESSIONAL ELECTIVE – II</b> Refrigeration and Air Conditioning Renewable Energy Sources Tool Design	3	1	3
6	A16332 A16333	<b>OPEN ELECTIVE – II</b> Basic Automobile Engineering Material Science Engineering	3	1	3
7	A16388	Heat Transfer Lab	-	2	2
8	A16090	Advanced Communication Skills Lab	-	2	2
9	A16TP2	Quantitative Methods & Logical Reasoning	2	-	2
		<b>Total Credits</b>	<b>20</b>	<b>10</b>	<b>24</b>



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S. No.	Subject Code	Subject Name	L	T	P	Total Credits
<b>B.Tech IV YEAR I SEMESTER</b>						
1	A17334	Operation Research	4	1	0	3
2	A17335	CAD/CAM	4	1	0	3
3	A17336	Mechanical Measurements and instrumentation	3	1	0	3
4	A17343 A17344	<b>OPEN ELECTIVE – III</b> Optimization Techniques Maintenance and Safety Engineering	3	1	0	3
5	A17337 A17338 A17339	<b>PROFESSIONAL ELECTIVE -III</b> Robotics Mechatronics Composite Materials	3	1	0	3
6	A17340 A17341 A17342	<b>PROFESSIONAL ELECTIVE -IV</b> CNC Technologies Power plant Engineering Computer Graphics	3	1	0	3
7	A17389	Computer Aided Design and Manufacturing Lab	0	0	3	2
8	A17390	Production Drawing practice and Instrumentation lab	0	0	3	2
9	A173P1	Industry Oriented Mini Project				2
		<b>Total Credits</b>				<b>24</b>
<b>B.Tech IV YEAR II SEMESTER</b>						
1	A18345	Production Planning And Control	3	1	0	3
2	A18346	Plant Layout And Material Handling	3	1	0	3
3	A18347	Unconventional Machining Processes	3	1	0	3
4	A183TS	Technical Seminar	0	0	6	2
5	A183CV	Comprehensive Viva	0	0	0	2
6	A183P2	Project work	0	0	0	11
		<b>Total Credits</b>				<b>24</b>

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD.****B. TECH. MECHANICAL ENGINEERING****I YEAR**

<b>Code</b>	<b>Subject</b>	<b>L</b>	<b>T/P/D</b>	<b>C</b>
A10001	English	2	-	4
A10002	Mathematics – I	3	1	6
A10302	Engineering Mechanics	3	-	6
A10004	Engineering Physics	3	-	6
A10005	Engineering Chemistry	3	-	6
A10501	Computer Programming	3	-	6
A10301	Engineering Drawing	2	3	6
A10581	Computer Programming Lab.	-	3	4
A10081	Engineering Physics & Engineering Chemistry Lab.	-	3	4
A10083	English Language Communication Skills Lab.	-	3	4
A10082	IT Workshop / Engineering Workshop	-	3	4
	<b>Total</b>	<b>19</b>	<b>16</b>	<b>56</b>

**II YEAR I SEMESTER**

<b>Code</b>	<b>Subject</b>	<b>L</b>	<b>T/P/D</b>	<b>C</b>
A30009	Environmental Studies	4	-	4
A30008	Probability and Statistics	4	-	4
A30203	Electrical and Electronics Engineering	4	-	4
A30104	Mechanics of Solids	4	-	4
A30306	Thermodynamics	4	-	4
A31803	Metallurgy and Materials Science	4	-	4
A30281	Electrical and Electronics Engineering Lab	-	3	2
A30085	Metallurgy & Mechanics of Solids Lab	-	3	2
	<b>Total</b>	<b>24</b>	<b>6</b>	<b>28</b>

**II YEAR II SEMESTER**

Code	Subject	L	T/P/D	C
A40312	Production Technology	4	-	4
A40309	Kinematics of Machinery	4	-	4
A40313	Thermal Engineering -I	4	-	4
A40112	Mechanics of Fluids and Hydraulic Machines	4	-	4
A40310	Machine Drawing	-	6	4
A40006	Mathematics-II	4	-	4
A40382	Production Technology Lab	-	3	2
A40188	Mechanics of Fluids & Hydraulic Machines Lab	-	3	2
	<b>Total</b>	<b>20</b>	<b>12</b>	<b>28</b>

**III YEAR I SEMESTER**

Code	Subject	L	T/P/D	C
A50010	Managerial Economics and Financial Analysis	4	-	4
A50318	Engineering Metrology	4	-	4
A50317	Dynamics of Machinery	4	-	4
A50321	Machine Tools	4	-	4
A50316	Design of Machine Members – I	4	-	4
A50326	Thermal Engineering -II	4	-	4
A50384	Machine Tools & Metrology Lab	-	3	2
A50383	Thermal Engineering Lab	-	3	2
	<b>Total</b>	<b>24</b>	<b>6</b>	<b>28</b>

**III YEAR II SEMESTER**

Code	Subject	L	T/P/D	C
A62405	Automobile Engineering	4	-	4
A60330	Finite Element Methods	4	-	4
A60334	Refrigeration and Air Conditioning	4	-	4
A60329	Design of Machine Members – II	4	-	4
A60331	Heat Transfer	4	-	4
	<b>Open Elective</b>	4	-	4
A60117	Disaster Management			
A60017	Intellectual Property Rights			
A60018	Human Values and Professional Ethics			
A60387	Heat Transfer Lab	-	3	2
A60086	Advanced Communication Skills Lab	-	3	2
	<b>Total</b>	<b>24</b>	<b>6</b>	<b>28</b>

**IV YEAR I SEMESTER**

Code	Subject	L	T/P/D	C
A70352	Operations Research	4	-	4
A70353	Power Plant Engineering	4	-	4
A70328	CAD/CAM	4	-	4
A70343	Instrumentation and Control Systems	4	-	4
	<b>ELECTIVE – I</b>	4	-	4
A70355	Robotics			
A70346	Mechanical Vibrations			
A70348	Mechatronics			
A70347	Mechanics of Composite Materials			
A70332	Industrial Management			
	<b>ELECTIVE – II</b>	4	-	4
A70359	Unconventional Machining Processes			
A70337	CNC Technology			
A70336	Automation in Manufacturing			
A70339	Design for Manufacturing			
A72909	Nanotechnology			
A70390	Computer Aided Design & Manufacturing Lab	-	3	2
A70391	Production Drawing Practice and Instrumentation Lab	-	3	2
	<b>Total</b>	<b>24</b>	<b>6</b>	<b>28</b>

**IV YEAR II SEMESTER**

Code	Subject	L	T/P/D	C
A80366	Production Planning and Control	4	-	4
	<b>ELECTIVE – III</b>	4	-	4
A80527	Artificial Neural Networks			
A80367	Total Quality Management			
A80363	Maintenance and Safety Engineering			
A80365	Plant Layout & Material Handling			
	<b>ELECTIVE – IV</b>	4	-	4
A80324	Renewable Energy Sources			
A80362	Jet Propulsion & Rocket Engineering			
A80338	Computational Fluid Dynamics			
A80361	Gas Dynamics			
A80087	Industry Oriented Mini Project	-	-	2
A80089	Seminar	-	6	2
A80088	Project Work	-	15	10
A80090	Comprehensive Viva	-	-	2
	<b>Total</b>	<b>12</b>	<b>21</b>	<b>28</b>

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**T-Tutorial L – Theory P – Practical D-Drawing C – Credits**