

**Approved Course Structure**

**Program: B.Tech.- Mechanical Engineering**

**Regulations: SVEC-16**

S. No.	Course Code	Course Title	Course Category	Contact Periods/ Week				Credits (C)	Scheme of Examination Max. Marks		
				L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
<b>I Year - I Semester</b>											
1.	16BT1HS01	Technical English	HS	3	1	0	4	3	30	70	100
2.	16BT1BS01	Engineering Chemistry	BS	3	1	0	4	3	30	70	100
3.	16BT1BS03	Matrices and Numerical Methods	BS	3	1	0	4	3	30	70	100
4.	16BT1BS04	Multi-Variable Calculus and Differential Equations	BS	3	1	0	4	3	30	70	100
5.	16BT10501	Programming in C	ES	3	1	0	4	3	30	70	100
6.	16BT1HS31	English Language Lab	HS	0	0	3	3	2	50	50	100
7.	16BT1BS31	Engineering Chemistry Lab	BS	0	0	3	3	2	50	50	100
8.	16BT10331	Computer Aided Engineering Drawing	ES	0	1	6	7	3	50	50	100
9.	16BT10531	Programming in C Lab	ES	0	0	3	3	2	50	50	100
<b>Total</b>				<b>15</b>	<b>6</b>	<b>15</b>	<b>36</b>	<b>24</b>	<b>350</b>	<b>550</b>	<b>900</b>

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				L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
<b>I Year - II Semester</b>											
1.	16BT1BS02	Engineering Physics	BS	3	1	0	4	3	30	70	100
2.	16BT2BS01	Transformation Techniques and Partial Differential Equations	BS	3	1	0	4	3	30	70	100
3.	16BT20102	Engineering Mechanics	ES	4	1	0	5	4	30	70	100
4.		Basic Electrical and Electronics Engineering	ES	3	1	0	4	3	30	70	100
5.	16BT20301	Engineering Materials	ES	3	1	0	4	3	30	70	100
6.	16BT1BS32	Engineering Physics Lab	BS	0	0	3	3	2	50	50	100
7.	16BT20251	Electrical and Electronics Engineering Lab	ES	0	0	3	3	2	50	50	100
8.	16BT20331	Engineering Workshop Practice	ES	0	0	3	3	2	50	50	100
9.	16BT20332	Materials Science Lab	ES	0	0	3	3	2	50	50	100
<b>Total</b>				<b>16</b>	<b>5</b>	<b>12</b>	<b>33</b>	<b>24</b>	<b>350</b>	<b>550</b>	<b>900</b>

S. No.	Course Code	Course Title	Course Category	Contact Periods/Week				Credits (C)	Scheme of Examination Max. Marks		
				L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
<b>II Year - I Semester</b>											
1.	16BT3BS01	Probability Distributions and Statistical Methods	BS	3	1	0	4	3	30	70	100
2.	16BT30301	Engineering Metallurgy	PC	3	1	0	4	3	30	70	100
3.	16BT30302	Kinematics of Machinery	PC	3	1	0	4	3	30	70	100
4.	16BT30303	Manufacturing Technology	PC	3	1	0	4	3	30	70	100
5.	16BT30304	Strength of Materials	PC	3	1	0	4	3	30	70	100
6.	16BT30305	Thermodynamics	PC	3	1	0	4	3	30	70	100
7.	16BT30331	Computer Aided Machine Drawing Lab	PC	0	0	3	3	2	50	50	100
8.	16BT30332	Manufacturing Technology Lab	PC	0	0	3	3	2	50	50	100
9.	16BT30132	Strength of Materials Lab	PC	0	0	3	3	2	50	50	100
<b>Total</b>				<b>18</b>	<b>6</b>	<b>9</b>	<b>33</b>	<b>24</b>	<b>330</b>	<b>570</b>	<b>900</b>

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				L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
<b>II Year - II Semester</b>											
1.	6BT3HS0	Environmental Studies	HS	3	0	0	3	3	30	70	100
2.	6BT4030	Design of Machine Elements - I	PC	3	1	0	4	3	30	70	100
3.	6BT4030	Dynamics of Machinery	PC	3	1	0	4	3	30	70	100
4.	6BT4030	Fluid Mechanics	PC	3	1	0	4	3	30	70	100
5.	6BT4030	Machine tools and Modern Machining Processes	PC	3	1	0	4	3	30	70	100
6.	6BT4030	Thermal Engineering - I	PC	3	1	0	4	3	30	70	100
7.	6BT4033	Fluid Mechanics Lab	PC	0	0	3	3	2	50	50	100
8.	6BT4033	Machine Tools Lab	PC	0	0	3	3	2	50	50	100
9.	6BT4HS3	Soft Skills Lab	HS	0	0	3	3	2	50	50	100
<b>Total</b>				<b>18</b>	<b>5</b>	<b>9</b>	<b>32</b>	<b>24</b>	<b>330</b>	<b>570</b>	<b>900</b>

S. No.	Course Code	Course Title	Course Category	Contact Periods/ Week				Credits (C)	Scheme of Examination Max. Marks		
				L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
<b>III Year – I Semester</b>											
1.	16BT50301	Design of Machine Elements –II	PC	3	1	0	4	3	30	70	100
2.	16BT50302	Industrial Engineering and Management	HS	3	1	0	4	3	30	70	100
3.	16BT50303	Metrology and Measurements	PC	3	1	0	4	3	30	70	100
4.	16BT50304	Refrigeration and Air – conditioning	PC	3	1	0	4	3	30	70	100
5.	16BT50305	Thermal Engineering - II	PC	3	1	0	4	3	30	70	100
<b>Interdisciplinary Elective-1</b>											
6.	16BT50306	Human Resources Management	IDE	3	1	0	4	3	30	70	100
	16BT50307	Instrumentation and Control Systems									
	16BT50308	Mechatronics									
	16BT40502	Database Management System									
7.	16BT50331	Dynamics and Vibrations Lab	PC	0	0	3	3	2	50	50	100
8.	16BT50332	Internal Combustion Engines Lab	PC	0	0	3	3	2	50	50	100
9.	16BT50333	Metrology and Instrumentation Lab	PC	0	0	3	3	2	50	50	100
<b>Total</b>				<b>18</b>	<b>6</b>	<b>9</b>	<b>33</b>	<b>24</b>	<b>330</b>	<b>570</b>	<b>900</b>

S. No.	Course Code	Course Title	Course Category	Contact Periods/ Week				Credits (C)	Scheme of Examination Max. Marks		
				L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
<b>III Year – II Semester</b>											
1.	16BT3HS02	Managerial Economics and Principles of Accountancy	HS	3	1	0	4	3	30	70	100
2.	16BT60301	CAD/CAM	PC	3	1	0	4	3	30	70	100
3.	16BT60302	Heat Transfer	PC	3	1	0	4	3	30	70	100
<b>Interdisciplinary Elective-2</b>											
4.	16BT60303	Non-Conventional Energy Sources	IDE	3	1	0	4	3	30	70	100
	16BT50402	Microprocessors and Microcontrollers									
	16BT41202	Java programming									
	16BT51201	Computer Graphics and Multimedia									
<b>Program Elective- 1</b>											
5.	16BT60304	Gas Turbines and Jet Propulsion	PE	3	1	0	4	3	30	70	100
	16BT60305	Hydraulics and Pneumatics									
	16BT60306	Mechanical Vibrations									
	16BT60307	Supply Chain Management									
<b>Open Elective</b>			OE	3	1	0	4	3	30	70	100
6.	16BT60331	CAD and Simulation Lab	PC	0	0	3	3	2	50	50	100
7.	16BT60332	Heat Transfer Lab	PC	0	0	3	3	2	50	50	100
8.	16BT60333	Seminar	EEC	0	0	0	0	2	-	100	100
9.	16BT6MOOC	MOOC	-	-	-	-	-	-	-	-	-
<b>Total</b>				<b>18</b>	<b>6</b>	<b>6</b>	<b>30</b>	<b>24</b>	<b>280</b>	<b>620</b>	<b>900</b>

**LIST OF OPEN ELECTIVES**

Sl. No.	Course Code	Open Elective Course Title	Sl. No.	Course Code	Open Elective Course Title
1.	16BT6HS01	Banking and Insurance	16.	16BT60114	Disaster Mitigation and Management
2.	16BT6HS02	Business Communication and Career Skills	17.	16BT60115	Environmental Pollution and Control
3.	16BT6HS03	Cost Accounting and Financial Management	18.	16BT60116	Planning for Sustainable Development
4.	16BT6HS04	Entrepreneurship for Micro, Small and Medium Enterprises	19.	16BT60117	Professional Ethics
5.	16BT6HS05	French Language	20.	16BT60118	Rural Technology
6.	16BT6HS06	German Language	21.	16BT60308	Global Strategy and Technology
7.	16BT6HS07	Indian Constitution	22.	16BT60309	Intellectual Property Rights and Management
8.	16BT6HS08	Indian Economy	23.	16BT60310	Managing Innovation and Entrepreneurship
9.	16BT6HS09	Indian Heritage and Culture	24.	16BT60311	Material Science
10.	16BT6HS10	Indian History	25.	16BT70412	Green Technologies
11.	16BT6HS11	Personality Development	26.	16BT70413	Introduction to Nanoscience and Technology
12.	16BT6HS12	Philosophy of Education	27.	16BT60505	Engineering System Analysis and Design
13.	16BT6HS13	Public Administration	28.	16BT71011	Micro-Electro-Mechanical Systems
14.	16BT60112	Building Maintenance and Repair	29.	16BT61205	Cyber Security and Laws
15.	16BT60113	Contract Laws and Regulations	30.	16BT61505	Bio-informatics

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				L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
<b>IV Year – I Semester</b>											
1.	16BT70301	Automobile Engineering	PC	3	1	0	4	3	30	70	100
2.	16BT70302	Finite Element Method	PC	3	1	0	4	3	30	70	100
3.	16BT70303	Operations Research	PC	3	1	0	4	3	30	70	100
4.		Program Elective-2	PE	3	1	0	4	3	30	70	100
	16BT70304	Cryogenics									
	16BT70305	Geometric Modeling									
	16BT70306	Quality Management and Reliability Engineering									
	16BT70307	Tool design									
5.		Program Elective-3	PE	3	1	0	4	3	30	70	100
	16BT70308	Computational Fluid Dynamics									
	16BT70309	Industrial Robotics									
	16BT70310	Product Design									
	16BT70311	Production and Operations Management									
6.		Program Elective-4	PE	3	1	0	4	3	30	70	100
	16BT70312	Power Plant Engineering									
	16BT70313	Project Management									
	16BT70314	Rapid Prototype Technology									
	16BT70315	Tribology									
7.	16BT70331	Computer Aided Manufacturing and Automation Lab	PC	0	0	3	3	2	50	50	100
8.	16BT70332	Industrial Engineering Lab	PC	0	0	3	3	2	50	50	100
9.	16BT70333	Comprehensive Assessment	EEC	0	0	0	0	2	-	100	100
<b>Total</b>				<b>18</b>	<b>6</b>	<b>6</b>	<b>30</b>	<b>24</b>	<b>280</b>	<b>620</b>	<b>900</b>

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				L	T	P	Total		Internal Marks	External Marks	Total Marks
<b>IV Year – II Semester</b>											
1.	16BT80331	Project Work*	EEC	0	0	0	0	12	100	100	200
<b>Total</b>				<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>100</b>	<b>100</b>	<b>200</b>

\*Full-time project work

  
DEAN (Academics)

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