

**VIT BHOPAL UNIVERSITY, BHOPAL**  
**SCHOOL OF MECHANIAL ENGINEERING (SMEC)**

**CURRICULUM**

**B.Tech (Mechanical Engineering)**

**(2017 - 18 Batch onwards)**

<b>Category</b>	<b>Core Credits</b>	<b>Elective Credits</b>	<b>Total Credits</b>
Natural Sciences	29	3	<b>32</b>
Engineering and Technology	100	21	<b>121</b>
Humanities and Management	13	8	<b>21</b>
Open Electives	0	6	<b>6</b>
<b>Total Credits</b>			<b>180</b>

VIT BHOPAL / B.Tech. Mechanical Engineering (4 years - 180 Credits)													
	Natural Sciences	:	32 Cr.		Engineering and Technology	:	121 Cr.		Humanities and Management Courses	:	21 Cr.	Open Electives	6 Cr.
	Natural Sciences - Core courses	Type	29		Engineering & Technology - Core courses	Type	100		Humanities and Management - Core courses	Type	13		
PHY1001	Engineering Physics	LTP	4	EEE1001	Electric Circuits and systems	LTP	4	ENG1002	Communication for Technical Professionals	LT	3	Any courses of 6 credits	
CHY1001	Engineering Chemistry	LTP	4	CSE1001	Introduction to problem solving and programming	LTP	4	ENG2001	Technical Writing & Composition	LT	2		
CHY1002	Environmental Science	LT	3	MEE1006	Basic workshop	P	2	HUM1007	Ethics and Values	LT	2		
MAT1001	Calculus and Laplace Transforms	LT	4	MEE1001	Engineering Drawing	LP	4	STS1001	Soft Skills I	LT	1		
MAT2001	Differential & Difference Equations	LT	3	MEE1004	Engineering Thermodynamics	LT	3	STS2001	Soft Skills II	LT	1		
MAT3001	Complex Variables and Partial Differential Equations	LT	4	MEE1002	Engineering Mechanics	LT	3	EXCXXX	Extracurricular Activity	PJ	2		
MAT2003	Applied Numerical Methods	LT	3	MEE2096	Engineering Design	LT	2	HUM1008	Swachh Bharat	PJ	2		
MAT3003	Probability, Statistics and Reliability	LT	4	MEE1003	Materials Engineering and Technology	LP	4						
	Natural Sciences - Elective Courses		3	MEE2001	Machine drawing	P	4		Humanities and Management - Elective Courses	:	8		
		Type	3Cr	MEE1005	Fluid Mechanics	LTP	4		Course – I	LT	3		
PHY2001	Materials Science	LP	3	MEE2002	Strength of Materials	LTP	4		Course – II	LT	3		

PHY2002	Energy and Environmental physics	LT	3	MEE2004	Thermal Engineering systems	LTP	4		Course – III		LT	2		
CHY2001	Materials and Instrumental methods	LT	3	MEE2005	Mechanics of Machines	LTP	4		(Refer Annexure for List)					
				MEE2003	Manufacturing processes	LP	4							
				MEE3002	Design of Machine elements	LT	4							
				MEE3004	Heat Transfer	LTP	4							
				MEE3003	Machining process and Metrology	LP	4							
				MEE4001	Design of Transmission system	LT	4							
				MEE3001	CAD/CAM	LP	3							
				MAT2004	Operations Research	LT	3							
				MEE2098	Project Exhibition -1	PJ	1							
				MEE2099	Project Exhibition -2	PJ	1							
				MEE3099	Engineering Project in community service	PJ	2							
				MEE2097	Internship	PJ	2							
				MEE4098	Comprehensive Examination	PJ	2							
				MEE4099	Capstone Project	PJ	20							
					<b>Engineering &amp; Technology - Elective courses (List given below)</b>	:	<b>21</b>							

Annexure 1: Program Electives

<i>Total Credits of 21 to be chosen from the basket of courses.</i>											
<i>A Minimum of 15 credits from any particular basket will enable a Certificate with Specialization in that Domain.</i>											
	<i>Thermal Engineering</i>	<i>Type</i>	<i>Cr</i>		<i>Design Engineering</i>	<i>Type</i>	<i>Cr</i>		<i>Manufacturing Technology</i>	<i>Type</i>	<i>C r</i>
MEE4002	Computational Fluid Dynamics	LP	3	MEE3011	Finite Element Analysis	LTP	4	MEE4003	Advanced Machining Processes	LP	4
MEE3006	IC Engines	LT	3	MEE3012	Failure Analysis and Design	LT	3	MEE2001	Metal Casting Technology	LP	3
MEE3007	Renewable Energy sources	LP	3	MEE3013	Mechanical Vibrations	LT	3	MEE3006	Tool and Die Design	LT	3
MEE2006	Power Plant Engineering	LT	3	MEE2008	New Product Development	LT	3	MEE3017	Design and manufacturing of composite materials	LT	3
MEE3008	Turbomachines	LT	3	MEE3014	Robotics and Automation	LP	4	MEE3018	Non Destructive Testing	LP	3
MEE2007	Fuels and combustion	LT	3	MEE2009	Instrumentation and Control	LP	3	MEE3019	Additive Manufacturing Technologies	LP	3
MEE3009	Gas dynamics and jet propulsion	LT	3	MEE3015	Mechatronics	LP	3	MEE2012	MEMS	LP	3
MEE3010	Automobile Engineering	LP	3	MEE2010	Tribology	LP	3	MEE2013	Metal Forming Theory and Practice	LP	3

Semester Course Arrangement – B Tech (Mechanical Engineering)															
Semester 1				Semester 2				Semester 3				Semester 4			
Code	Course Title	Type	Cr.	Code	Course Title	Type	Cr.	Code	Course Title	Code	Cr.	Code	Course Title	Type	Cr.
ENG1002	Communication for Technical Professionals	LT	3	ENG2001	Technical Writing & Composition	LT	2	MEE2098	Project Exhibition – 1	PJ	1	MEE2099	Project Exhibition – 2	PJ	1
PHY1001	Engineering Physics	LTP	4	CHY1002	Environmental Science	LT	3	MEE2096	Engineering Design	LT	2	MAT2003	Applied Numerical Methods	LT	3
CHY1001	Engineering Chemistry	LTP	4	HUM1008	Swachh Bharat	PJ	2	MAT3001	Complex variables and partial differential equations	LT	4	MEE2004	Thermal Engineering systems	LTP	4
CSE1001	Introduction to problem solving and programming	LTP	4	MAT2001	Differential and Difference equations	LT	3	MEE1003	Materials Engineering and Technology	LP	4	MEE2005	Mechanics of Machines	LTP	4
MAT1001	Calculus and Laplace Transforms	LT	4		Humanities/ Management Elective-I	LT	3	MEE2001	Machine drawing	LP	4	MEE2003	Manufacturing processes	LP	4
EEE1001	Electric Circuits and Systems	LTP	4	MEE1002	Engineering Mechanics	LT	3	MEE1005	Fluid Mechanics	LTP	4	MEE2002	Strength of Materials	LTP	4
HUM1007	Ethics and Values	LT	2	MEE1006	Basic workshop	P	2	MEE1004	Engineering Thermodynamics	LT	3		Engineering Elective-1		3
					Natural Sciences - Elective	LT	3		Open Elective-1		3		Open Elective-2		3
				MEE1001	Engineering Drawing	LP	4								
<b>Total credits</b>		<b>:</b>	<b>25</b>	<b>Total credits</b>			<b>25</b>	<b>Total credits</b>			<b>25</b>	<b>Total credits</b>			<b>26</b>
Semester 5				Semester 6				Semester 7				Semester 8			
Code	Course Title	Type	Cr.	Code	Course Title	Type	Cr.	Code	Course Title	Type	Cr.	Code	Course Title	Type	Cr.
STS1001	Soft skills I	LT	1	STS2001	Soft skills II	LT	1	MEE4099	Capstone	PJ	0	MEE4099	Capstone	PJ	20

									Project -Phase1 (Zeroth Review only)				Project		
MEE3099	Engineering Projects in Community Service	PJ	0	MEE3099	Engineering Projects in Community Service	PJ	2	MEE2097	Internship	PJ	2				
MAT3003	Probability, Statistics and Reliability	LT	4	MAT2004	Operations research	LT	3	MEE4098	Comprehensive Exam	PJ	2				
MEE3004	Heat Transfer	LT P	4		Humanities/M anagement Elective - II	LT	3		Engineering Elective- 6	LT	3				
MEE3003	Machining process and Metrology	LP	4	MEE3001	CAD/CAM	LP	3		Engineering Elective- 7	LT	3				
MEE3002	Design of Machine Elements	LT	4	MEE4001	Design of Transmission Systems	LT	4		Humanities/ Management Elective - III	LT	2				
	Engineering Elective-2		3		Engineering Elective 4	LT	3								
	Engineering Elective-3		3		Engineering Elective 5	LT	3								
EXCXXXX	Extra-Curricular activity	PJ	0	EXCXXXX	Extra- Curricular activity	PJ	2								
<b>Total credits</b>			<b>23</b>	<b>Total credits</b>			<b>24</b>	<b>Total credits</b>			<b>12</b>	<b>Total credits</b>			<b>20</b>