

## BTech Curriculum from 2020 onwards for the Department of Mechanical & Aerospace Engineering

### Semester-wise Distribution

	Jul	Jan
Year-1	15	17
Year-2	15	17
Year-3	19	16
Year-4	16	14
<b>TOTAL =</b>	<b>129</b>	

### Category-wise Distribution

Category		Credits	%
Basic Science (BS)		15	11.6
Basic Engineering (BE)		15	11.6
DC	Core Courses	66	58.1
	Elective project or any Dept Elective	3	
	Internship or any Dept Electives	6	
Soft Skills	English Communication	2	3.1
	Personality Development	1	

	Introduction to Entrepreneurship	1	
LA	Ethics and Values	2	6.9
	Electives (LA)	7	
Free Electives (FE)		11	8.5
<b>TOTAL =</b>		<b>129</b>	

Required: BS: 11-12% ; BE: 11-12% ; DC+DE: 55-60% ; SS: 4 credits (3%)  
 LA/CA: 7-8% ; FE: 9-10%

Semester 1					
Code	Course No.	Course Title	Credits	Segment	PreReq
BS	MA1110	Calculus I	1	12	-
BS	MA1220	Calculus II	1	34	-
BS	EP1108	Modern Physics	2		-
BS	CY1017	Environmental Chemistry I	2		-
BE	ID1063	Introduction to Programming	3		-
SS		English Communication	2		-
BE	ID1041	Engineering Drawing	2		-
BE	ID1171	Fabrication Lab I	2		-
		<b>Total</b>	<b>15</b>		

Semester 2					
Code	Course No.	Course Title	Credits	Segment	PreReq
BS	MA1140	Elementary Linear Algebra	1	12	
BS	MA1150	Differential Equations	1	34	
BS	BO1010	Life Sciences	1		
SS		Personality Development	1		-

DC	ME1020	Engineering Mechanics	3		-
DC	ME2120	Thermodynamics	3		-
DC	ME1211	Automation Lab	1		-
BE	ID1091	Fabrication Lab - II	2		-
BE	ID1054	Digital Fabrication	2		-
BE		Introduction to AI	1		-
SS		Introduction to Entrepreneurship	1		
		<b>Total</b>	<b>17</b>		

<b>Semester 3</b>					
<b>Code</b>	<b>Course No.</b>	<b>Course Title</b>	<b>Credits</b>	<b>Segment</b>	<b>PreReq</b>
BS	MA2110	Introduction to Probability	1	12	
BS	MA2120	Transform Techniques	1		
DC		Fundamentals of Physical Metallurgy	3		-
DC	ME2110	Solid Mechanics	3	16	ME1020 or ID1120
DC	ME2240	Fluid Mechanics	3	16	ME1020 or ID1120
DC	ME2431	Fluid Mechanics Lab	1		-
XXxxxx		Electives (LA/Free)*	3		-
		<b>Total</b>	<b>15</b>		

<b>Semester 4</b>					
<b>Code</b>	<b>Course No.</b>	<b>Course Title</b>	<b>Credits</b>	<b>Segment</b>	<b>PreReq</b>
BS	MA2140	Introduction to Statistics	1	12	
BS	MA2130	Complex Variables	1		
BS	EP1031	Physics Lab	2	16	
BE		Basic Electrical Engineering	3		
DC	ME2230	Manufacturing Science – I	3	16	-

DC	ME3110	Heat and Mass Transfer	3	16	ME2120, ME2240
DC	ME2220	Kinematics and Dynamics of Mechanisms	3	16	ME1020
DC	ME2421	Solid Mechanics Lab	1		-
		<b>Total</b>	<b>17</b>		

<b>Semester 5</b>					
<b>Code</b>	<b>Course No.</b>	<b>Course Title</b>	<b>Credits</b>	<b>Segment</b>	<b>PreReq</b>
DC	ME2050	Instrumentation	2		-
DC	ME3010	Manufacturing Science - II	2	36	ME2230
DC	ME3030	Modeling and Simulation	3	16	-
DC	ME3160	Power and Refrigeration System	2		ME2120
DC	ME3180	FEM and CFD Theory	3		ME2110, ME2240
DC	ME3445	Finite Element Methods Lab	1		ME2110
DC	ME3455	Computational Fluid Dynamics Lab	1		ME2240
DC	ME3170	Design of Machine Elements	3	16	ME2110
DC	ME4445	Heat Transfer lab	1		-
DC	ME3465	Manufacturing Lab	1		
		<b>Total</b>	<b>19</b>		

<b>Semester 6</b>					
<b>Code</b>	<b>Course No.</b>	<b>Course Title</b>	<b>Credits</b>	<b>Segment</b>	<b>PreReq</b>
DC	ME3425	Mini-project	1		
DC	ME3413	Machine Drawing & Solid Modelling	2		ID1041
DE		Internship (or equal credits of department electives in their place)	6		
XXxxxx		Electives (LA/Free)*	7		
		<b>Total</b>	<b>16</b>		

<b>Semester 7</b>					
<b>Code</b>	<b>Course No.</b>	<b>Course Title</b>	<b>Credits</b>	<b>Segment</b>	<b>PreReq</b>
DC	ME3140	IC Engines	3	16	ME2120
DC	ME3040	Mathematical Elements for Geometrical Modeling	1.5	13	-
DC	ME3050	Computer integrated manufacturing	1.5	46	ME3010, ME3040
DC	ME3210	Control Systems	3		-
DE	ME4325	Departmental Elective / Elective Project	3		
DC	ME3220	Industrial Engineering and Operations Research	3		-
DC	ME4435	Dynamics lab	1		-
		<b>Total</b>	<b>16</b>		

<b>Semester 8</b>					
<b>Code</b>	<b>Course No.</b>	<b>Course Title</b>	<b>Credits</b>	<b>Segment</b>	<b>PreReq</b>
DC	ME4020	Turbo Machines	3		ME2120
LACA		Ethics and Values	2		
DC	ME3475	IC Engines Lab	1		
XXxxxx		Electives (LA/Free)*	8		
		<b>Total</b>	<b>14</b>		

\* LA/Free Electives: under this category, student is expected to do total of

(a) 7 credits of LA electives (in addition to ethics course)

(b) 11-credits of Free Electives

The student has the choice of deciding the distribution and timing of these electives as long as the final tally is met