

## Curriculum for B. Tech. Mechanical - Smart Manufacturing

(According to 33<sup>rd</sup> Senate meeting minutes)

<b>Semester 1</b>				
<b>Course Name</b>	<b>I</b>	<b>P</b>	<b>C</b>	<b>Category</b>
Calculus	3	0	3	BSC
Engineering Mechanics	3	0	3	BSC
Computational Engineering / Basic Electrical & Electronics Engineering	3	0	3	BEC/ BEC
Concepts in Engineering Design/ Science and Engineering of Materials	3	0	3	DES/BEC
English for Communication	2	0	2	HMC
Earth, Environment & Design/ Professional Ethics for Engineers	2		P/F	DES/HMC
Engineering Skills Practice	0	3	2	BEC
Materials & Mechanics Practice	0	3	2	BSC
Computational Engineering Practice/ Measurement & Data Analysis Practice	0	3	2	BEC/BSC
Engineering Graphics	1	3	3	BEC
<b>Total</b>			<b>23</b>	
<b>Semester 2</b>				
<b>Course Name</b>	<b>I</b>	<b>P</b>	<b>C</b>	<b>Category</b>
Differential Equations	3	0	3	BSC
Engineering Electromagnetics	3	0	3	BSC
Basic Electrical & Electronics Engineering/ Computational Engineering	3	0	3	BEC/BEC
Science and Engineering of Materials / Concepts in Engineering Design	3	0	3	BEC/DES
Design History	2	0	2	DES
Professional Ethics for Engineers/ Earth, Environment & Design	2	0	P/F	HMC/DES
Measurement & Data Analysis Practice/ Computational Engineering Practice	0	3	2	BSC/BEC
Industrial Design Sketching	0	3	2	DES
Engineering Electromagnetics Practice	0	3	2	BSC
Design Realization	0	3	2	DES
<b>Total</b>			<b>22</b>	
<b>Semester 3</b>				
<b>Course Name</b>	<b>I</b>	<b>P</b>	<b>C</b>	<b>Category</b>
Probability and Statistics	3	0	3	BSC
Engineering Economics	2	0	2	HMC
Data Structures and Algorithms	3	0	3	PEC
Thermal Concepts for Manufacturing Engineers	3	0	3	PEC
Manufacturing Processes I	3	0	3	PEC
Manufacturing Processes Practice I	0	3	2	PEC
Production Drawing and Manufacturability Analysis	1	3	3	PEC
Electrical Drives	1	3	3	PEC
Data Structures and Algorithms Practice	0	3	2	PEC
<b>Total</b>			<b>24</b>	

<b>Semester 4</b>				
<b>Course Name</b>	<b>I</b>	<b>P</b>	<b>C</b>	<b>Category</b>
Free Elective (Maths category)	3	0	3	BSC
Operations and Supply Chain Management	3	0	3	HMC
Database Management Systems	3	0	3	PEC
Manufacturing Processes II	3	0	3	PEC
Sensors and Controls	3	0	3	PEC
Sensors and Controls Practice	0	3	2	PEC
Manufacturing Processes Practice II	0	3	2	PEC
Machine to Machine Communication Practice	1	3	3	PEC
<b>Total</b>			<b>22</b>	
<b>Semester 5</b>				
<b>Course Name</b>	<b>I</b>	<b>P</b>	<b>C</b>	<b>Category</b>
Entrepreneurship and Management Functions	2	0	2	HMC
Manufacturing Systems	3	0	3	PEC
Robotics and Automation	3	0	3	PEC
Quality Engineering	3	0	3	PEC
Mechanical Design Concepts	3	0	3	PEC
Robotics and Automation Practice	0	3	2	PEC
Quality Inspection and Product Validation Practice	0	3	2	PEC
Embedded Systems Practice	1	3	3	PEC
<b>Total</b>			<b>21</b>	
<b>Semester 6</b>				
<b>Course Name</b>	<b>I</b>	<b>P</b>	<b>C</b>	<b>Category</b>
Operations Research	2	0	2	HMC
Internet of Things	3	0	3	PEC
Special Manufacturing Processes	3	0	3	PEC
Computer Aided Design and Manufacturing	3	0	3	PEC
Elective I	3	0	3	ELE
Elective II	3	0	3	ELE
Computer Aided Design and Manufacturing Practice	0	3	2	PEC
Internet of Things Practice	0	3	2	PEC
Product Design Practice	0	3	2	DES
<b>Total</b>			<b>23</b>	
<b>Semester 7</b>				
<b>Course Name</b>	<b>I</b>	<b>P</b>	<b>C</b>	<b>Category</b>
Internship	0	-	5	PCD*
Data Analytics	2	0	2	HMC
Free Elective – I	3	0	3	ELE
Design and Manufacturing Project	0	6	5	PCD
<b>Total</b>			<b>15</b>	
<b>Semester 8</b>				
<b>Course Name</b>	<b>I</b>	<b>P</b>	<b>C</b>	<b>Category</b>
Free Elective (Management category)	2	0	2	HMC
Elective – III	3	0	3	ELE
Free Elective-II	3	0	3	ELE
Project	0	-	10	PCD
<b>Total</b>			<b>18</b>	

\*Internship is for a period of 5 months