

भारतीय सूचना प्रौद्योगिकी अभिकल्पना एवं विनिर्माण संस्थान, कर्नूल

**INDIAN INSTITUTE OF INFORMATION TECHNOLOGY,
DESIGN AND MANUFACTURING, KURNOOL**

Jagannathagattu, Kurnool – 518007, Andhra Pradesh, INDIA
(An Institute of National Importance under MHRD Govt. of India)



Syllabus for

B. Tech. in Mechanical Engineering with Specialization in Design and Manufacturing

(From AY 2019-20)

DEPARTMENT OF MECHANICAL ENGINEERING



**INDIAN INSTITUTE OF INFORMATION TECHNOLOGY,
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Institute Vision

To become a leading institute of higher learning in Information Technology enabled design & manufacturing to create technologies and technologists befitting the industries globally.

Institute Mission

To become a center of excellence pioneering in education, research & development, and leaders in design & manufacturing.

Department Vision

To build an academic and research eco system with the innovation mindset and global perspectives to cater the needs of the society in the discipline of Mechanical Engineering with prime focus in the fields of design and manufacturing.

Department Mission

To enable the graduates technically sound with the state-of- the –art curriculum and innovative teaching methods and carrying out cutting edgeresearch in collaboration with industry and research organizations.

Scheme/Structure for
B. Tech. in Mechanical Engineering with Specialization in Design and Manufacturing

Semester I						
S. No.	Course Code	Course Name	Category	I	P	C
1	MAT104T	Calculus	BSC	3	0	3
2	PHY108T	Engineering Mechanics	BSC	3	0	3
3	INT107T	English for Communication	HMC	2	0	2
4	COM105T	Computational Engineering	BEC	3	0	3
5	DES101T	Concepts in Engineering Design	DES	3	0	3
6	INT109P	Engineering Graphics	DES	1	3	3
7	DE103T	Earth, Environment & Design	DES	2	0	P/F
8	PHY109P	Materials & Mechanics Practice	BSC	0	3	2
9	COM105P	Computational Engineering Practice	BEC	0	3	2
10	INT110P	Engineering Skills Practice	BEC	0	3	2
Total				17	12	23

Semester II						
S. No.	Course Code	Course Name	Category	I	P	C
1	MAT105T	Differential Equations	BSC	3	0	3
2	PHY107P	Engineering Electromagnetics	BSC	3	0	3
3	MAN102T	Professional Ethics for Engineers	HMC	2	0	P/F
4	INT108T	Science and Engineering of Materials	BEC	3	0	3
5	EC101T	Basic Electrical & Electronics Engineering	BEC	3	0	3
6	DES102T	Design History	DES	2	0	2
7	PHY107P	Engineering Electromagnetics Practice	BSC	0	3	2
8	INT111P	Measurement & Data Analysis Practice	BSC	0	3	2
9	DES104P	Industrial Design Sketching	BEC	0	3	2
10	DES105P	Design Realization	DES	0	3	2
Total				16	12	22

Semester III						
S. No.	Course Code	Course Name	Category	I	P	C
1	XXxxxT	Linear Algebra	BSC	3	0	3
2	ME201T	Thermal Engineering - Concepts & Applications	PEC	3	0	3
3	ME202T	Mechanics of Materials	PEC	3	0	3
4	ME203T	Basic Concepts in Manufacturing Processes	PEC	3	0	3
5	ME204T	Kinematics of Machines	PEC	3	0	3
6	ME205I	Electrical Drives	PEC	1	3	3
7	ME206P	Machine Drawing & Manufacturability Analysis Practice	PEC	0	3	2
8	ME207P	Product Realization Practice	PEC	0	3	2
Total				16	9	22

Semester IV						
S. No.	Course Code	Course Name	Category	I	P	C
1	XXxxxT	Numerical Methods	BSC	3	0	3
2	XXxxxT	Engineering Economics	HMC	3	0	3
3	ME208T	Fluid Mechanics and Hydraulic Machinery	PEC	3	0	3
4	ME209T	Dynamics of Machines	PEC	3	0	3
5	ME210T	Quality Inspection and Product Validation	PEC	3	0	3
6	ME210P	Quality Inspection and Product Validation Practice	PEC	0	3	2
7	ME211I	Sensors and Controls	PEC	1	3	3
8	ME212P	Mechanical Design Practice	PEC	0	3	2
Total				16	9	22

Semester V						
S. No.	Course Code	Course Name	Category	I	P	C
1	XXxxxT	Entrepreneurship and Management Functions	HMC	3	0	3
2	ME301T	Heat Transfer	PEC	3	0	3
3	ME302T	Automation in Manufacturing	PEC	3	0	3
4	ME302P	Manufacturing Automation Practice	PEC	0	3	2
5	ME303T	Machine Tool Technology	PEC	3	0	3
6	ME304T	Design of Machine elements	PEC	3	0	3
7	ME305I	Microprocessors and Controllers	PEC	1	3	3
8	ME306P	Fluid Mechanics and Heat Transfer Practice	PEC	0	3	2
Total				16	9	22

Semester VI						
S. No.	Course Code	Course Name	Category	I	P	C
1	XXxxxT	Design for Quality and reliability	DES	3	0	3
2	ME307T	Computational Methods in Engineering	PEC	3	0	3
3	ME307P	Mechanical Design Simulation Practice	PEC	0	3	2
4	ME308T	Thermal Energy Systems	PEC	3	0	3
5	ME308P	Thermal Engineering Practice	PEC	0	3	2
6	MExxxT	Elective – I	PEC	3	0	3
7	MExxxT	Elective – II	PEC	3	0	3
8	XXxxxP	Product Design Practice	PCD	0	3	2
Total				15	9	21

Semester VII						
S. No.	Course Code	Course Name	Category	I	P	C
1	XXxxxX	Internship	PCD	-	-	5
2	XXxxxT	Free Elective – I	PEC	3	0	3
3	XXxxxX	Design Project	DES	-	-	5
Total				3	6	13

Semester VIII						
S. No.	Course Code	Course Name	Category	I	P	C
1	MExxxT	Elective – III	PEC	3	0	3
2	XXxxxT	Free Elective – II	PEC	3	0	3
3	XXxxxT	Design Elective	DES	3	0	3
4	XXxxxX	Project	PCD	-	-	10
Total				9	0	19

List of Electives

S. No.	Course Code	Course Name	Category	I	P	C
Department Electives						
1	ME501T	Mechanical Vibrations	PEC	3	0	3
2	ME502T	Advanced Solid Mechanics	PEC	3	0	3
3	ME503T	Computer Aided Design and Manufacturing	PEC	3	0	3
4	ME504T	Modern Manufacturing Technology	PEC	3	0	3
5	ME505T	Operation Research	PEC	3	0	3
6	ME506T	Computational Fluid Dynamics	PEC	3	0	3
7	ME507T	Optimization techniques for Mechanical Engineers	PEC	3	0	3
Free Electives						
1	ME508T	Automobile Engineering Systems	PEC	3	0	3
2	ME509T	Non-linear Dynamics	PEC	3	0	3
3	ME510T	Operations and Supply Chain Management	PEC	3	0	3

*In addition to the above prescribed electives, the student can enrol for the courses offered as part of M.Tech in Smart Manufacturing with the consent of the Faculty and prior approval of HoD.

Distribution of the courses:

S. No.	Course category	Credit distribution	Credit distribution in %
1	Basic Science Course (BSC)	24	14.6%
2	Basic Engineering Course (BEC)	15	9.1%
3	Design Course (DES)	21	12.9%
4	Humanities and Management Course (HMC)	08	4.9%
5	Professional Engineering Course (PEC)	79	48.1%
6	Professional Career Development (PCD)	17	10.4%
Total		164	100%

