

UG CURRICULUM

**(As per Kishore Chatterjee and Deepankar Choudhury Committee's
Recommendation, 2022-2023)**

Department: Mechanical Engineering

Programme: BTech and Dual Degree

Specialization (if any): BTech (N/A) , Dual Degree: TFE , CADA & MFG

Applicable for: 2022 Batch onwards

SUMMARY

(Semester wise credit requirements for a programme)

Semester	Core Course s+lab	Department Electives	HASMED Electives	STEM Electives	Project	*Honours Courses	Total
1							31
2							31
3	18 + 3		12				33
4	18 + 6		6	6			36
5	24 + 6	0	6			6	36 + 6
6	6 + 9	6	6	6		6	33 + 6
7	0 + 0	18		6	6	6	30 + 6
8		18			12	6	30 + 6
9		12			36		48
10		12			36		48
Total	66(C) +24 (L)	42(BT)+24	30	18	18(BT) +72		260 (BTech) + 24 (honors) + 96 (5th yr) =380 (DD)

** Please do not add credits of Honours Courses in the total.*

SEMESTER WISE UG CURRICULUM

Semester -1				
Course Code	Course Name	L-T-P	Credits	Tag
ME 103	Introduction to STEM as DIC-1 Mechanical Department Introductory Course-I	3-0-0	6	DIC
MA 105	Calculus	4-0-0	8	C
CH 117	Chemistry Lab	0-0-3	3	C
BB 101	Biology	2-1-0	6	C
MS 101	Makerspace	1-0-6	8	C
NOCS 01#	NCC/NSS/NSO	0-0-0	P/NP	
GC 101	Gender sensitization course	0-0-0	P/NP	
Total Credits			31	
Honours Courses				
Course Code	Course Name	L-T-P	Credits	Tag

Any One of these P/NP courses

Semester -2				
Course Code	Course Name	L-T-P	Credits	Tag
ME 104	DIC-2, Engineering Mechanics	2-1-0	6	DIC2
MA 110	Linear Algebra and Differential Equations	4-0-0	8	C
PH 117	Physics Lab	0-0-3	3	C
CS 101	Computer Programming	2-1-0	6	C
HSS/IDC/ENT	Introduction to HASMED (HSS+IDC)	2-1-0	4+4	C

NOCS 02#	NCC/NSS/NSO	0-0-0	P/NP	
Total Credits			31	
Honours Courses				
Course Code	Course Name	L-T-P	Credits	Tag

Any One of these P/NP courses

Semester -3				
Course Code	Course Name	L-T-P	Credits	Tag
ME 209	Thermodynamics	2-1-0	6	C
EC 101	Economics	2-1-0	6	
ME 223	Solid Mechanics and Strength of Materials	2-1-0	6	C
ME 221	Structural Materials	2-1-0	6	C
HS 250/ES 250	Environmental Studies	2-0-2	6 (PP/NP)	
ME 218	Solid Mechanics Lab	0-0-3	3	L
Total Credits			33	
Honours Courses				
Course Code	Course Name	L-T-P	Credits	Tag

Minor Courses				
Course Code	Course Name	L-T-P	Credits	Tag
ME 223 M	Solid Mechanics and Strength of Materials	2-1-0	6	M

ME 209 M	Thermodynamics	2-1-0	6	M
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Semester -4				
Course Code	Course Name	L-T-P	Credits	Tag
DE 250	Design Thinking	2-1-0	6	
ME 228	Applied Data Science and Machine Learning	2-1-0	6	
ME 219	Fluid Mechanics	2-1-0	6	C
ME 230	Mechanical Processing of Materials	2-1-0	6	C
ME 232	Kinematics and Dynamics of Machine	2-1-0	6	C
ME 213	Manufacturing Practice Lab	0-0-3	3	L
ME 224	Fluid Mechanics Lab	0-0-3	3	L
Total Credits			36	
Honours Courses				
Course Code	Course Name	L-T-P	Credits	Tag

Minor Courses				
Course Code	Course Name	L-T-P	Credits	Tag
ME 230 M	Mechanical Processing of Materials	2-1-0	6	M
ME 219 M	Fluid Mechanics	2-1-0	6	M

Semester -5				
Course Code	Course Name	L-T-P	Credits	Tag
ME 311	Microprocessor and Automatic Control	2-1-0	6	C
ME 346	Heat Transfer	2-1-0	6	C
ME 306	Applied Thermodynamics	2-1-0	6	C
ME 338	Manufacturing Process II	2-1-0	6	C
	HASMED Elective – 1		6	
ME 441	Applied Thermodynamics lab		3	L
ME 374	Manufacturing Process Lab	0-0-3	3	L
Total Credits			36	
Honours Courses				
Course Code	Course Name	L-T-P	Credits	Tag
	Honors Elective 1	3-0-0	6	O

Minor Courses				
Course Code	Course Name	L-T-P	Credits	Tag
ME 338 M	Manufacturing Process II	2-1-0	6	M
ME 311 M	Microprocessor and Automatic Control	2-1-0	6	M

Semester -6				
Course Code	Course Name	L-T-P	Credits	Tag
ME 312	Operations Modeling and Analysis	2-1-0	6	C
	Departmental Elective 1	3-0-0	6	D
	HASMED Elective – 2		6	
	STEM Elective 1		6	
ME 372	Heat Transfer & Metrology Lab	0-0-3	3	L
ME 423	Machine Design Lab		3	L
ME 310	Microprocessor and Automatic Controls Lab.	0-0-3	3	L
Total Credits			33	
Honours Courses				
Course Code	Course Name	L-T-P	Credits	Tag
	Honors Elective 2	3-0-0	6	
Minor Courses				
Course Code	Course Name	L-T-P	Credits	Tag
	Minor Course	2-1-0	6	M

Semester -7				
Course Code	Course Name	L-T-P	Credits	Tag
	Departmental Elective 2	3-0-0	6	D
	BTP-1/One Equivalent Elective		6	D
	STEM Elective 2		6	
	Flexible Elective 1	3-0-0	6	
	Flexible Elective 2	3-0-0	6	
Total Credits			30	
Honours Courses				
Course Code	Course Name	L-T-P	Credits	Tag
	Honors Elective – 3	3-0-0	6	O

Minor Courses				
Course Code	Course Name	L-T-P	Credits	Tag
	Minor Course	2-1-0	6	M

Semester -8				
Course Code	Course Name	L-T-P	Credits	Tag
	BTP-2/Two Equivalent Elective		12	O/D
	Flexible Elective 3	3-0-0	6	
	Flexible Elective 4	3-0-0	6	
	Flexible Elective 5	3-0-0	6	
Total Credits			30	
Honours Courses				
Course Code	Course Name	L-T-P	Credits	Tag
	Honors Elective 4	3-0-0	6	O

Semester -9				
Course Code	Course Name	L-T-P	Credits	Tag
	PG Elective – 1	3-0-0	6	C
	PG Elective – 2	3-0-0	6	C
	DDP Stage I		36	C
Total Credits			48	
Honours Courses				
Course Code	Course Name	L-T-P	Credits	Tag

Only for Dual Degree students:

For 4 postgraduate level courses (24 credits), students have to take ME 651, ME 657, ME 661 and ME 663 for *TFE specialization*

For 4 postgraduate level courses (24 credits), students have to take 4 CADA-electives for *CADA specialization*

For 4 postgraduate level courses (24 credits), students have to take 4 MFG-electives for *MFG specialization*

Semester -10				
Course Code	Course Name	L-T-P	Credits	Tag
	PG Elective – 3	3-0-0	6	C
	PG Elective – 4	3-0-0	6	C
	DDP Stage II		36	C

I. List of Core Courses (Please mention course code and course name):

1. ME 104 Engineering Mechanics (DIC2)
2. ME 223 Solid Mechanics and Strength of Materials
3. ME 221 Structural Materials
4. ME 209 Thermodynamics
5. ME 219 Fluid Mechanics
6. ME 230 Mechanical Processing of Materials
7. ME 311 Microprocessor and Automatic Controls
8. ME 346 Heat Transfer
9. ME 338 Manufacturing Process II
10. ME 306 Applied thermodynamics
11. ME 312 Operations Modeling and Analysis

IIa. List of Honours (TFE) Courses (Please mention course code and course name):

1. ME 704 Computational methods in thermal and fluid engineering
2. TFE-Elective 1
3. TFE-Elective 2
4. TFE-Elective 3

IIb. List of Honours (CADA) Courses (Please mention course code and course name):

1. CADA-Elective 1
2. CADA-Elective 2
3. CADA-Elective 3
4. CADA-Elective 4

IIc. List of Honours (MFG) Courses (Please mention course code and course name):

1. ME 409 Intelligent Manufacturing Systems Lab
2. MFG-Elective 1
3. MFG-Elective 2
4. MFG-Elective 3

III. List of Minor Courses (Please mention course code and course name): Any 5 of the following courses are required to get a minor in Mechanical Engineering.

- 1) ME 223M Solid Mechanics and Strength of Materials
- 2) ME 209M Thermodynamics
- 3) ME 219M Fluid Mechanics
- ~~4) ME 311M Microprocessor and Automatic Controls (Removed from curriculum)~~
- 5) ME 230 Mechanical Processing of Materials
- 6) ME 338M Manufacturing Processes II