

COURSE STRUCTURE AND SYLLABUS

For

B.Tech.

MECHANICAL ENGINEERING

(Applicable for batches admitted from 2024-25)



PRAGATI ENGINEERING COLLEGE

(An Autonomous Institution)

ADB Road, Surampalem, Kakinada District, Andhra Pradesh – 533 437

(Approved by AICTE, New Delhi & Permanently Affiliated to JNTUK, Kakinada)

(Recognized by UGC 2(f) and 12(b) under UGC act, 1956)

Department of Mechanical Engineering**COURSE STRUCTURE****INDUCTION PROGRAMME**

S.No.	Course Name	Category	L-T-P-C
1	Physical Activities -- Sports, Yoga and Meditation, Plantation	MC	0-0-6-0
2	Career Counselling	MC	2-0-2-0
3	Orientation to all branches -- career options, tools, etc.	MC	3-0-0-0
4	Orientation on admitted Branch -- corresponding Laboratory's, tools and platforms	EC	2-0-3-0
5	Proficiency Modules & Productivity Tools	ES	2-1-2-0
6	Assessment on basic aptitude and mathematical skills	MC	2-0-3-0
7	Remedial Training in Foundation Courses	MC	2-1-2-0
8	Human Values & Professional Ethics	MC	3-0-0-0
9	Communication Skills -- focus on Listening, Speaking, Reading, Writing skills	BS	2-1-2-0
10	Concepts of Programming	ES	2-0-2-0

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Department of Mechanical Engineering

I YEAR – I SEMESTER

Sl. No	Category	Course Code	Course Title	L	T	P	Credits
1	BS&H		Engineering Physics	3	0	0	3
2	BS&H		Linear Algebra and Calculus	3	0	0	3
3	Engineering Science		Basic Electrical and Electronics Engineering	3	0	0	3
4	Engineering Science		Engineering Graphics	1	0	4	3
5	Engineering Science		Introduction to Programming	3	0	0	3
6	BS&H		Engineering Physics Laboratory	0	0	2	1
7	Engineering Science		Electrical and Electronics Engineering Workshop	0	0	3	1.5
8	Engineering Science		Computer Programming Laboratory	0	0	3	1.5
9	Engineering Science		IT Workshop	0	0	2	1
10	BS&H		NCC/NSS/Scouts & Guides/Community Service	0	0	1	0.5
Total Credits							20.5

I YEAR – II SEMESTER

Sl. No	Category	Course Code	Course Title	L	T	P	Credits
1	BS&H		Communicative English	2	0	0	2
2	BS&H		Differential Equations and Vector Calculus	3	0	0	3
3	BS&H		Engineering Chemistry	3	0	0	3
4	Engineering Science		Basic Civil & Mechanical Engineering	3	0	0	3
5	Professional Core		Engineering Mechanics	3	0	0	3
6	Engineering Science		Engineering Workshop	0	0	3	1.5
7	BS&H		Communicative English Laboratory	0	0	2	1
8	Professional Core		Engineering Mechanics Laboratory	0	0	3	1.5
9	BS&H		Engineering Chemistry Laboratory	0	0	2	1
10	BS&H		Health and wellness, Yoga and Sports	0	0	1	0.5
Total Credits							19.5

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Department of Mechanical Engineering

II YEAR – I SEMESTER

Sl. No	Category	Course Code	Course Title	L	T	P	Credits
1	BS		Numerical Methods and Transform Techniques	3	0	0	3
2	HSMC		Universal Human Values - Understanding Harmony & Ethical Human Conduct	2	1	0	3
3	Engineering Science		Thermodynamics	2	0	0	2
4	Professional Core		Mechanics of Solids	3	0	0	3
5	Professional Core		Material Science and Metallurgy	3	0	0	3
6	Professional Core		Mechanics of Solids and Materials Science Laboratory	0	0	3	1.5
7	Professional Core		Computer-Aided Machine Drawing	0	0	3	1.5
8	Engineering Science		Python programming Laboratory	0	0	2	1
9	Skill Enhancement Course		Embedded Systems and IoT	0	1	2	2
10	Audit Course		Environmental Science	2	0	0	-
Total Credits							20

II YEAR – II SEMESTER

Sl. No	Category	Course Code	Course Title	L	T	P	Credits
1	Management Course- I		Industrial Management	2	0	0	2
2	Basic Science		Complex Variables, Probability and Statistics	3	0	0	3
3	Professional Core		Manufacturing Processes	3	0	0	3
4	Professional Core		Fluid Mechanics & Hydraulic Machines	3	0	0	3
5	Professional Core		Theory of Machines	3	0	0	3
6	Professional Core		Fluid Mechanics & Hydraulic Machines Laboratory	0	0	3	1.5
7	Professional Core		Manufacturing Processes Laboratory	0	0	3	1.5
8	Skill Enhancement course		Soft Skills	0	1	2	2
9	Engineering Science		Design Thinking & Innovation	1	0	2	2
Total Credits							21
Mandatory Community Service Project Internship of 08 weeks duration during summer Vacation							