

Z.H. College of Engineering Technology, Aligarh Muslim University Aligarh

COURSE STRUCTURE: B.Tech. (Mechanical Engineering)

(Valid for students admitted from the year 2023 onwards)

Semester 1/2:

S.No.	Course Catag	Course No.	Course title	Contact Periods			Credits	Marks			Total
				L	T	P		Course-Work	Intl-Exam	End-Sem	
1	BS	AMS1112	Applied Mathematics-I	3	1	0	4	15	25	60	100
2	BS	APS1112	Applied Physics	3	1	0	4	15	25	60	100
3	ESA	ELA1112	Principles of Electronics Engineering	2	1	0	3	15	25	60	100
4	ESA	MEA1122	Engineering Mechanics	2	1	0	3	15	25	60	100
5	HM	EZH1112	English	2	1	0	3	15	25	60	100
6	BS	APS1912	Applied Physics Lab	0	0	3	1.5	60		40	100
7	ESA	MEA1922	Engineering Workshop	0	1	2	2	60		40	100
8	HM	EZH1912	Communication Skills Lab	0	1	2	2	60		40	100

TOTAL CREDITS: 22.5

Semester 2/1:

S.No.	Course Catag	Course No.	Course title	Contact Periods			Credits	Marks			Total
				L	T	P		Course-Work	Intl-Exam	End-Sem	
1	BS	AMS1122	Higher Mathematics-II	3	1	0	4	15	25	60	100
2	BS	ACS1112	Applied Chemistry	3	1	0	4	15	25	60	100
3	ESA	EEA1112	Principles of Electrical Engineering	2	1	0	3	15	25	60	100
4	ESA	MEA1112	Thermal Sciences	3	1	0	4	15	25	60	100
5	BS	ACS1912	Applied Chemistry Lab	0	0	3	1.5	60		40	100
6	ESA	COA1912	Computer Programming Lab	0	1	2	2	60		40	100
7	ESA	MEA1912	Engineering Graphics Lab	1	0	2	2	60		40	100
8	AU	CEU1112	Environmental Studies (Audit Course)	3	0	0	0	15	25	60	100

TOTAL CREDITS: 20.5

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Semester 3:

S.No.	Course Catag	Course No.	Course title	Contact Periods			Credits	Marks			Total
				L	T	P		Course-Work	Intl-Exam	End-Sem	
1	BS	AMS2312	Higher Mathematics	2	1	0	3	15	25	60	100
2	ESA	MEA2422	Experimental Methods & Analysis	2	1	0	3	15	25	60	100
3	PC	MEC2112	Mechanics of Solids	3	1	0	4	15	25	60	100
4	PC	MEC2122	Kinematics of Machines	2	1	0	3	15	25	60	100
5	PC	MEC2312	Fluid Mechanics-I	3	1	0	4	15	25	60	100
6	PC	MEC2432	Material Science	2	1	0	3	15	25	60	100
7	PC	MEC2912	Machine Drawing	0	1	2	2	60		40	100
8	PC	MEC2922	Fluids Mechanics Lab	0	0	3	1.5	60		40	100
9	PC	MEC2932	Manufacturing Technology Lab-I	0	1	2	2	60		40	100

TOTAL CREDITS: 25.5

Semester 4:

S.No.	Course Catag	Course No.	Course title	Contact Periods			Credits	Marks			Total
				L	T	P		Course-Work	Intl-Exam	End-Sem	
1	BS	AMS2322	Numerical Methods & Optimization	3	1	0	4	15	25	60	100
2	ESA	EEA2022	Electrical Technology & Control	2	1	0	3	15	25	60	100
3	PC	MEC2132	Machine Design I	2	1	0	3	15	25	60	100
4	PC	MEC2212	Applied Thermodynamics	2	1	0	3	15	25	60	100
5	PC	MEC2412	Manufacturing Technology-I	3	1	0	4	15	25	60	100
6	ESA	EEA2972	Electrical Technology Lab	0	0	3	1.5	60		40	100
7	PC	MEC2942	Thermodynamics Lab	0	1	2	2	60		40	100
8	AU		Audit Course-2				0	15	25	60	100

TOTAL CREDITS: 20.5

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Semester 5:

S.No.	Course Catag	Course No.	Course title	Contact Periods			Credits	Marks			Total
				L	T	P		Course-Work	Intl-Exam	End-Sem	
1	PC	MEC3112	Machine Design II	2	1	0	3	15	25	60	100
2	PC	MEC3212	Heat & Mass Transfer	3	1	0	4	15	25	60	100
3	PC	MEC3312	Fluid Mechanics II	2	1	0	3	15	25	60	100
4	PC	MEC3412	Industrial Engineering & Operations Research	3	1	0	4	15	25	60	100
5	PC	MEC3442	Manufacturing Technology-II	3	1	0	4	15	25	60	100
6	PE		Programme Elective-1	2	1	0	3	15	25	60	100
7	PC	MEC3912	Heat & Mass Transfer Lab	0	1	2	2	60		40	100
8	PC	MEC3922	Machine Design Practice	0	1	2	2	60		40	100
9	AU		Audit Course-3				0	15	25	60	100

TOTAL CREDITS: 25

Semester 6:

S.No.	Course Catag	Course No.	Course title	Contact Periods			Credits	Marks			Total
				L	T	P		Course-Work	Intl-Exam	End-Sem	
1	PC	MEC3122	Machinery Dynamics	3	1	0	4	15	25	60	100
2	PC	MEC3222	I.C. Engines	3	1	0	4	15	25	60	100
3	PC	MEC3232	Energy Conversion System	2	1	0	3	15	25	60	100
4	PC	MEC3322	Fluid Machinery	2	1	0	3	15	25	60	100
5	HM	MEH3452	Engineering Economy & Management	2	1	0	3	15	25	60	100
6	PC	MEC3932	Manufacturing Technology Lab-II	0	1	2	2	60		40	100
7	PC	MEC3942	Solid Modelling & Analysis	0	1	2	2	60		40	100
8	PC	MEC3952	Kinematics & Stress Analysis Lab	0	1	2	2	60		40	100
9	PC	MEC3962	Fluid Mechanics & Machinery Lab	0	1	2	2	60		40	100

TOTAL CREDITS: 25

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Semester 7:

S.No.	Course Catag	Course No.	Course title	Contact Periods			Credits	Marks			Total
				L	T	P		Course-Work	Intl-Exam	End-Sem	
1	PC	MEC4112	Mechanical Vibrations	3	1	0	4	15	25	60	100
2	PC	MEC4932	Manufacturing Technology Lab-III	0	0	3	1.5	60		40	100
3	PC	MEC4942	Vibrations Lab.	0	0	3	1.5	60		40	100
4	PE		Programme Elective-2	2	1	0	3	15	25	60	100
5	OE		Open Elective-1	2	1	0	3	15	25	60	100
6	HM		Elective Course under Humanities category	2	1	0	3	15	25	60	100
7	PC	MEC4952	Energy Conversion Systems Lab	0	1	2	2	60		40	100
8	PSI	MEP4812	Colloquium	0	2	0	2	60		40	100
9	PSI	MEP4912	Project (Phase I)	0	3	0	3	60		40	100

TOTAL CREDITS: 23

Semester 8:

S.No.	Course Catag	Course No.	Course title	Contact Periods			Credits	Marks			Total
				L	T	P		Course-Work	Intl-Exam	End-Sem	
1	PE		Programme Elective-3	2	1	0	3	15	25	60	100
2	PE		Programme Elective-4	2	1	0	3	15	25	60	100
3	PE		Programme Elective-5	2	1	0	3	15	25	60	100
4	OE		Open Elective-2	2	1	0	3	15	25	60	100
5	PSI	MEP4802	Industrial Training/Internship				2			100	100
6	PSI	MEP4922	Project (Phase II)	0	4	0	4	60		40	100

TOTAL CREDITS: 18

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List of Programme Elective (PE) Courses: See List of Programme Elective (PE) Courses in the syllabus section

S.No.	Crs. No.	Course title	S.No.	Crs. No.	Course title
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SUMMARY:

Category Code	Category Name	II-IV Year	First Year Credits	Total Credits
PC	Programme Core	84.5	0	84.5
PE	Programme Elective	15	0	15
BS	Basic Sciences	7	19	26
ESA	Engg. Science and Arts	7.5	19	26.5
OE	Open Elective	6	0	6
HM	Humanities	6	5	11
PSI	Project, Seminar, Internship	11	0	11
TOTAL		137	43	180