

NORTH MAHARASHTRA UNIVERSITY,

JALGAON (M.S.)

Bachelor of Engineering

(Mechanical Engineering)

Faculty of Science and Technology



'A' Grade
NAAC Re-Accredited
(3rd Cycle)

Syllabus Structure

w.e.f. 2017 – 18

Subject Group Code and Subject Groups

Sr. No.	GROUP	Category	Breakup of Credits (Total 160)
1	A	Humanities and Social Sciences including Management Courses (HSMC)	10
2	B	Basic Science Courses (BSC)	30
3	C	Engineering Science Courses including workshop, drawing, basics of electrical/mechanical/computer etc. (ESC)	33
4	D	Professional Core Courses (PCC)	53
5	E	Professional Elective Courses relevant to chosen specialization/branch (PEC)	18
6	F	Open subjects – Electives from other technical and /or emerging subjects (OEC)	12
7	G	Project work, seminar and internship in industry or appropriate work place/ academic and research institutions in India/abroad (PROJ)	15
8	H	Mandatory Courses (MC) [Environmental Sciences, Induction program, Indian Constitution, Essence of Indian Traditional Knowledge]	(non-credit)
Total			171

Syllabus Structure for First Year Engineering (Semester – I) (Common to All Branches) (w.e.f. 2017 – 18)

Course Code	Name of the course	Group	Teaching Scheme				Theory (Marks)		Practical (Marks)		Total (Marks)	Credits
			Teaching Hrs./week	Tut. Hrs./week	PR Hrs./week	Total Hrs./week	ISE	ESE	ICA	ESE		
FEN 101	Applied Physics -I	B	03	--	--	03	40	60	--	--	100	03
FEN 102	Applied Chemistry -I	B	03	--	--	03	40	60	--	--	100	03
FEN 103	Applied Mathematics -I	B	03	01	--	04	40	60	--	--	100	04
FEN 104	Communicative English	A	03	--	--	03	40	60	--	--	100	03
FEN 105	Introduction to Civil Engineering & Engineering Mechanics	C	03	--	--	03	40	60	--	--	100	03
FEN 106	Introduction to Electrical Engineering	C	03	--	--	03	40	60	--	--	100	03
FEN 107	Workshop Practice –I	C	-	--	02	02	--	--	25	--	25	01
FEN 108	Applied Sciences Lab -I	B	--	--	*02	02	--	--	25	--	25	01
FEN 109	Introduction to Civil Engineering & Engineering Mechanics Lab	C	--	--	02	02	--	--	25	25 (OR)	50	01
FEN 110	Introduction to Electrical Engineering Lab	C	--	--	02	02	--	--	25	25(OR)	50	01
FEN 111	Communicative English Lab	A	--	--	02	02	--	--	25	25(OR)	50	01
Total			18	01	10	29	240	360	125	75	800	24

ISE: Internal Sessional Examination, **ESE:** End Semester Examination, **ICA:** Internal Continuous Assessment, *Alternate week

Syllabus Structure for First Year Engineering (Semester – II) (Common to All Branches) (w.e.f. 2017 – 18)

Course Code	Name of the course	Group	Teaching Scheme				Theory (Marks)		Practical (Marks)		Total (Marks)	Credits
			Teaching Hrs./week	Tut. Hrs./week	PR Hrs./week	Total Hrs./week	ISE	ESE	ICA	ESE		
FEN 112	Applied Physics -II	B	03	--	--	03	40	60	--	--	100	03
FEN 113	Applied Chemistry -II	B	03	--	--	03	40	60	--	--	100	03
FEN 114	Applied Mathematics -II	B	03	01	--	04	40	60	--	--	100	04
FEN 115	Introduction to “C” Programming	C	03	--	--	03	40	60	--	--	100	03
FEN 116	Introduction to Mechanical Engineering & Engineering Drawing	C	03	--	--	03	40	60	--	--	100	03
FEN 117	Introduction to Electronics Engineering	C	03	--	--	03	40	60	--	--	100	03
FEN 118	Workshop Practice –II	C	-	--	02	02	--	--	25	--	25	01
FEN 119	Applied Sciences Lab -II	B	--	--	*02	02	--	--	25	--	25	01
FEN 120	Introduction to Mechanical Engineering & Engineering Drawing Lab	C	--	--	02	02	--	--	25	25 (OR)	50	01
FEN 121	Introduction to “C” Programming Lab	C	--	--	02	02	--	--	25	25(OR)	50	01
FEN 122	Introduction to Electronics Engineering Lab	C			02	02	--	--	25	25(OR)	50	01
Total			18	01	10	29	240	360	125	75	800	24

ISE: Internal Sessional Examination, **ESE:** End Semester Examination, **ICA:** Internal Continuous Assessment, *Alternate week

Syllabus Structure for Second Year Engineering (Semester – III) (Mechanical Engineering) (w.e.f. 2018 – 19)

Name of the Course	Group	Teaching Scheme				Evaluation Scheme					Credits
		Theory Hrs / week	Tutorial Hrs / week	Practical Hrs / week	Total	Theory		Practical		Total	
						ISE	ESE	ICA	ESE		
Biology	B	3	1	--	4	40	60	-	-	100	4
Principles of Management	C	3	--	--	3	40	60	-	-	100	3
Electrical Drives and Controls	C	3	--	-	3	40	60	--	--	100	3
Thermodynamics	D	3	--	-	3	40	60	--	--	100	3
Industrial Psychology	A	3	--	--	3	40	60	-	-	100	3
Electrical Drives and Controls Lab	C	--	--	2	2	--	--	25	25(OR)	50	1
Thermodynamics Lab	D	--	--	2	2	--	--	25	25(OR)	50	1
Computer Graphics Lab	D	1	--	2	3	-	-	25	25(PR)	50	2
		16	1	6	23	200	300	75	75	650	20

ISE: Internal Sessional Examination

ESE: End Semester Examination

ICA: Internal Continuous Assessment

Syllabus Structure for Second Year Engineering (Semester – IV) (Mechanical Engineering) (w.e.f. 2018 – 19)

Name of the Course	Group	Teaching Scheme				Evaluation Scheme					Credits
		Theory Hrs / week	Tutorial Hrs / week	Practical Hrs / week	Total	Theory		Practical		Total	
						ISE	ESE	ICA	ESE		
Mathematics – III	B	3	1	--	4	40	60	--	--	100	4
Introduction to Engineering Design Principles	C	3	--	--	4	40	60	--	--	100	3
Applied Thermodynamics	D	3	1	--	3	40	60	--	--	100	4
Fluid Mechanics and Fluid Machines	D	3	--	--	3	40	60	--	--	100	3
Industrial Economics	A	3	--	--	3	40	60	--	--	100	3
Applied Thermodynamics Lab	D	--	--	2	2	--	--	25	25(OR)	50	1
Fluid Mechanics and Fluid Machines Lab	D	--	--	2	2	--	--	25	25(OR)	50	1
Metrology and Quality Control Lab	D	1	--	2	3	-	-	25	25(OR)	50	2
Environmental Science	H	--	--	--	--	--	--	--	--	--	0
		16	2	6	24	200	300	75	75	650	21

ISE: Internal Sessional Examination

ESE: End Semester Examination

ICA: Internal Continuous Assessment

Syllabus Structure for Third Year Engineering (Semester – V) (Mechanical Engineering) (w.e.f. 2019 – 20)

Name of the Course	Group	Teaching Scheme				Evaluation Scheme					Credits
		Theory Hrs / week	Tutorial Hrs / week	Practical Hrs / week	Total	Theory		Practical		Total	
						ISE	ESE	ICA	ESE		
Heat Transfer	D	3	--	--	3	40	60	--	--	100	3
Manufacturing Processes	D	3	--	--	3	40	60	--	--	100	3
Strength of Materials	D	3	--	--	3	40	60	--	--	100	3
Machine Drawing Lab	D	--	--	2	2	-	-	25	25(OR)	50	1
Heat Transfer Lab	D	--	--	2	2	--	--	25	25(OR)	50	1
Manufacturing Processes Lab	D	--	--	2	2	--	--	25	25(OR)	50	1
Professional Elective Course – I	E	3	--	--	3	40	60	-	-	100	3
Open Elective Course – I	F	3	--	--	3	40	60	-	-	100	3
Minor Project – I (Stage –I) /	G	--	--	6	6	-	-	50	-	50	3
MC-III – Constitution of India	H	--	--	--	--	--	--	--	--		0
		15	0	12	27	200	300	125	75	700	21

ISE: Internal Sessional Examination

ESE: End Semester Examination

ICA: Internal Continuous Assessment

Professional Elective Course – I	Open Elective Course – I

Syllabus Structure for Third Year Engineering (Semester – VI) (Mechanical Engineering) (w.e.f. 2019 – 20)

Name of the Course	Group	Teaching Scheme				Evaluation Scheme					Credits
		Theory Hrs / week	Tutorial Hrs / week	Practical Hrs / week	Total	Theory		Practical		Total	
						ISE	ESE	ICA	ESE		
Kinematics and Theory of Machines	D	3	--	--	3	40	60	--	--	100	3
Manufacturing Technology	D	3	--	--	3	40	60	--	--	100	3
Material Engineering	D	3	--	--	3	40	60	--	--	100	3
Professional Elective Course – II	E	3	--	--	3	40	60	-	-	100	3
Open Elective Course – II	F	3	--	--	3	40	60	-	-	100	3
Kinematics and Theory of Machines Lab	D	--	--	2	2	--	--	25	25(OR)	50	1
Manufacturing Technology Lab	D	--	--	2	2	--	--	25	25(OR)	50	1
Material Engineering Lab	D	--	--	2	2	--	--	25	-	25	1
Minor Project	G	--	--	6	6	-	-	50	25(OR)	75	3
		15	--	12	27	200	300	125	75	700	21

ISE: Internal Sessional Examination

ESE: End Semester Examination

ICA: Internal Continuous Assessment

Professional Elective Course – II	Open Elective Course – II

NOTE: Note: Every student should undergo Summer Internship during Summer Vacation of at least THREE weeks duration. Credits for Summer Internship shall be included in Project (Stage – I) of Semester – VII.

Syllabus Structure for Fourth Year Engineering (Semester – VII) (Mechanical Engineering) (w.e.f. 2020 – 21)

Name of the Course	Group	Teaching Scheme				Evaluation Scheme					Credits
		Theory Hrs / week	Tutorial Hrs / week	Practical Hrs / week	Total	Theory		Practical		Total	
						ISE	ESE	ICA	ESE		
Design of Machine Elements & Transmission Systems	D	3	--	--	3	40	60	--	--	100	3
Professional Elective Course – III	E	3	--	--	3	40	60	-	-	100	3
Professional Elective Course – IV	E	3	--	--	3	40	60	-	-	100	3
Open Elective Course – III	F	3	--	--	3	40	60	-	-	100	3
Design of Machine Elements & Transmission Systems Lab	D	--	--	2	2	--	--	25	25(OR)	50	1
Computer Aided Design Lab	D	1	--	2	3	-	-	25	25(OR)	50	2
Project (Stage – I)	G	--	--	12	12	-	-	50	50(OR)	100	6
Essence of Indian Traditional Knowledge	H	--	--	--	--	--	--	--	--	--	0
		13	--	16	29	160	240	100	100	600	21

ISE: Internal Sessional Examination

ESE: End Semester Examination

ICA: Internal Continuous Assessment

Professional Elective Course – III	Professional Elective Course – IV	Open Elective Course – III

Syllabus Structure for Fourth Year Engineering (Semester – VIII) (Mechanical Engineering) (w.e.f. 2020 – 21)

Name of the Course	Group	Teaching Scheme				Evaluation Scheme					Credits
		Theory Hrs / week	Tutorial Hrs / week	Practical Hrs / week	Total	Theory		Practical		Total	
						ISE	ESE	ICA	ESE		
Refrigeration and Air Conditioning	D	3	--	--	3	40	60	--	--	100	3
Refrigeration and Air Conditioning Lab	D	--	--	2	2	--	--	25	25(OR)	50	1
Finite Element Analysis & Simulation Techniques Lab	D	2	--	2	4	-	-	25	25(OR)	50	3
Professional Elective Course – V	E	3	--	--	3	40	60	-	-	100	3
Professional Elective Course – VI	E	3	--	--	3	40	60	-	-	100	3
Open Elective Course – IV	F	3	--	--	3	40	60	-	-	100	3
Project	G	--	--	6	6	-	-	50	50(OR)	100	3
		14	--	10	24	160	240	100	100	600	19

ISE: Internal Sessional Examination

ESE: End Semester Examination

ICA: Internal Continuous Assessment

Professional Elective Course – V	Professional Elective Course – VI	Open Elective Course – IV

