

NORTH MAHARASHTRA UNIVERSITY,

JALGAON (M.S.)

Bachelor of Engineering

(Chemical Engineering)

Faculty of Science and Technology



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

SYLLABUS STRUCTURE

(As per AICTE Guidelines)

W.E.F. 2018 – 19

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)	26
3	C	Engineering Science Courses including workshop, drawing, basics of electrical/mechanical/computer etc. (ESC)	26
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, Constitution of India, Essence of Indian Traditional Knowledge]	
Total			160

**Syllabus Structure for First Year Engineering (Semester – I) (Mechanical, Auto, Civil, Chemical, BioTech) wef 2018 – 19
(As per AICTE Guidelines)**

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		
Chemistry	B	3	1	-	4	40	60	-	-	100	4
Mathematics – I	B	3	1	-	4	40	60	-	-	100	4
Engineering Graphics	C	3	-	-	3	40	60	-	-	100	3
English	A	3	-	-	3	40	60	-	-	100	3
Chemistry Lab	B	-	-	2	2	-	-	25	-	25	1
Engineering Graphics Lab	C	-	-	2	2	-	-	25	25	50	1
English Lab	A	-	-	2	2	-	-	25	25	50	1
Workshop Practices	C	1	-	2	3	-	-	25	25	50	2
		13	2	8	23	160	240	100	75	575	19

ISE: Internal Sessional Examination

ESE: End Semester Examination

ICA: Internal Continuous Assessment

Syllabus Structure for First Year Engineering (Semester – II) (Mechanical, Auto, Civil, Chemical, Bio Tech) wef 2018 – 19
(As per AICTE Guidelines)

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		
Physics	B	3	1	-	4	40	60	-	-	100	4
Mathematics – II	B	3	1	-	4	40	60	-	-	100	4
Basic Electrical & Electronics Engineering	C	3	1	-	4	40	60	-	-	100	4
Programming for Problem Solving	C	3	-	-	3	40	60	-	-	100	3
Physics Lab	B	-	-	2	2	-	-	25	-	25	1
Basic Electrical and Electronics Engineering Lab	C	-	-	2	2	-	-	25	25	50	1
Programming for Problem Solving Lab	C	-	-	2	2	-	-	25	25	50	1
Induction Program	H	-	-	-	-	-	-	-	-	-	0
		12	3	6	21	160	240	75	50	525	18

ISE: Internal Sessional Examination

ESE: End Semester Examination

ICA: Internal Continuous Assessment

Syllabus Structure for Second Year Engineering (Semester – III) Chemical Engineering (w.e.f. 2019 – 20)
(As per AICTE Guidelines)

Name of the Course	Group	Teaching Scheme				Evaluation Scheme					Credits
		Theory Hrs / week	Tutorials Hrs / week	Practical Hrs / week	Total	Theory		Practical		Total	
						ISE	ESE	ICA	ESE		
Industrial Chemistry	B	3	1	-	4	40	60	-	-	100	4
Thermodynamics-I	C	3	-	-	3	40	60	-	-	100	3
Engineering and Solid Mechanics	C	3	-	-	3	40	60	-	-	100	3
Fluid Mechanics	D	3	-	-	3	40	60	-	-	100	3
Industrial Organization and Management	A	3	-	-	3	40	60	-	-	100	3
Thermodynamics-I Lab	C	-	-	2	2	-	-	25	25 (OR)	50	1
Fluid Mechanics Lab	D	-	-	2	2			25	25 (OR)	50	1
Chemical Engineering Lab-I	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) Chemical Engineering (w.e.f. 2019 – 20)
(As per AICTE Guidelines)

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
Material Science	C	3	-	-	3	40	60	-	-	100	3
Thermodynamics - II	D	3	-	-	3	40	60	-	-	100	3
Material and Energy Balance Computations	D	3	-	-	3	40	60	-	-	100	3
Project Management and Entrepreneurship	A	3	-	-	3	40	60	-	-	100	3
Material Science Lab	C	-	-	2	2	-	-	-	-	-	1
Thermodynamics – II Lab	D	-	-	2	2	-	-	25	25 (OR)	50	1
Material and Energy Balance Computations Lab	D	-	-	2	2	-	-	25	25 (OR)	50	1
Chemical Engineering Lab-II	D	1	-	2	3	-	-	25	25 (PR)	50	2
Environmental Studies	H	-	-	-	-	-	-	-	-	-	-
		16	1	8	25	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) Chemical Engineering (w.e.f. 2020 – 21)
(As per AICTE Guidelines)

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		
Mass Transfer-I	D	3	-	-	3	40	60	-	-	100	3
Chemical Reaction Engineering-I	D	3	-	-	3	40	60	-	-	100	3
Particle and Fluid-Particle Processing	D	3	-	-	3	40	60	-	-	100	3
Professional Elective Course – I	E	3	-	-	3	40	60	-	-	100	3
Open Elective Course – I	F	3	-	-	3	40	60	-	-	100	3
Mass Transfer-ILab	D	-	-	2	2	-	-	25	25 (PR)	50	1
Chemical Reaction Engineering-ILab	D	-	-	2	2	-	-	25	25 (OR)	50	1
Chemical Engineering Lab-III	D	-	-	2	2	-	-	25	25 (OR)	50	1
Minor Project (Stage - I)	G	-	-	6	6	-	-	50	-	50	3
Constitution of India		-	-								-
		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) Chemical Engineering (w.e.f. 2020 – 21)
(As per AICTE Guidelines)

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		
Mass Transfer-II	D	3	-	-	3	40	60	-	-	100	3
Chemical Reaction Engineering-II	D	3	-	-	3	40	60	-	-	100	3
Heat Transfer	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
Mass Transfer-II Lab	D	-	-	2	2	-	-	25	25 (PR)	50	1
Chemical Reaction Engineering-II Lab	D	-	-	2	2	-	-	25	25 (OR)	50	1
Heat Transfer Lab	D	-	-	2	2	-	-	25	-	25	1
Minor Project	G	-	-	6	6	-	-	50	25 (OR)	75	3
		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 – II	Open Elective Course – II

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) Chemical Engineering(w.e.f. 2021 – 22)
(As per AICTE Guidelines)

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		
Process Control	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
Process Control Lab	D	-	-	2	2	-	-	25	25 (PR)	50	1
(LAB) Instrumentation and Control 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		-	-	-	-	-	-	-	-	-	-
		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) Chemical Engineering (w.e.f. 2021 – 22)
(As per AICTE Guidelines)

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		
Process Technology and Economics	D	3	-	-	3	40	60	-	-	100	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
Process Technology and Economics Lab	D	-	-	2	2	-	-	25	25 (OR)	50	1
(LAB) Design and Simulation	D	2	-	2	4	-	-	25	25 (PR)	50	3
Project	G		-	6	6	-	-	50	50 (OR)	100	3
		14	0	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

