

**Course structure of Semesters I to IV of 2-Year M. Tech Program in Chemical Engineering (CE – Code: 113), University of Calcutta
(with effect from: Academic Year 2024-2025)
Notification No.CSR/108/2024.**

- 1. The nomenclature and duration of the course and total credit of the Examination for M. Tech. Degree in Chemical Engineering shall be as follows:**

Name of Examination	Duration of Course	Total Credits
M. Tech 1 st Semester	6 months	20
M. Tech 2 nd Semester	6 months	20
M. Tech 3 rd Semester	6 months	20
M. Tech 4 th Semester	6 months	20

- 2. Schedule of Papers and distribution of Credits for the 2-Year M. Tech Semester I, II, III & IV (final) Examination in Chemical Engineering are as follows:**

Semester I

Sr. No.	Course Type/Code	Course Name	Class per week				Credit	Marks
			L	T	P	Total		
1	Core 1 MChE 101	Mathematical and Statistical Methods in Chemical Engineering	3	1	0	4	4	100
2	Core 2 MChE 102	Advanced Separation Process	3	1	0	4	4	100
3	Program Specific Elective a) MChE 103 b) MChE 113	Elective I: <u>Any one</u> a) Chemical Reactor Analysis b) Process Design and Synthesis	3	1	0	4	4	100
4	Program Specific Elective a) MChE 104 b) MChE 114	Elective II: <u>Any one</u> a) Safety and Pollution Control in Chemical Industries b) Application of Nanotechnology in Chemical Engineering	3	1	0	4	4	100
5	Laboratory 1 MChE 105	Process Modeling and Simulation Laboratory	0	0	4	4	2	100
6	MChE 106	Research Methodology and Literature Review	2	0	0	2	2	100
7	Audit 1 MChE 107	English for Research Paper Writing	2	0	0	2	0	100*
		Total	16	4	4	24	20	600

*Marks of paper 'Audit 1'- not included in the total Credits/Marks.

Semester II

Sr. No.	Course Type/Code	Course Name	Class per week				Credit	Marks
			L	T	P	Total		
1	Core 3 MChE 201	Advanced Transport Phenomena	3	1	0	4	4	100
2	Core 4 MChE 202	Advanced Reaction Engineering	3	1	0	4	4	100
3	Program Specific Elective a) MChE 203 b) MChE 213	Elective III: <u>Any one</u> a) Computational Fluid Dynamics b) Bioprocess Engineering	3	1	0	4	4	100
4	Program Specific Elective a) MChE 204 b) MChE 214	Elective IV: <u>Any one</u> a) Process Plant Design & Flow Sheeting b) Refinery & Petrochemicals	3	1	0	4	4	100
5	Laboratory 2 MChE 205	Advanced Chemical Engineering Laboratory	0	0	4	4	2	100
6	MChE 206	Mini Project	0	0	4	4	2	100
7	Audit 2 MChE 207	Constitution of India	2	0	0	2	0	100**
		Total	14	4	8	26	20	600

** Marks of paper 'Audit 2' - not included in the Total Credits/Marks.

Semester III

Sr. No.	Course Type/Code	Course Name	Class per week				Credit	Marks
			L	T	P	Total		
1	Program Specific Elective a) MChE 301 b) MChE 311	Elective V: <u>Any one</u> a) Design of Experiments and Parameter Estimation b) Computer Aided Design	3	1	0	4	4	100
2	Open Elective a) MChE 302 b) MChE 312	<u>Any one</u> a) Composite Materials b) Waste to Energy	3	1	0	4	4	100
3	Dissertation MChE 303	Dissertation Phase – I	0	0	18	18	12	300
		Total	6	2	18	26	20	500

Semester IV

Sr. No.	Course Type/Code	Course Name	Class per week				Credit	Marks
			L	T	P	Total		
1	Dissertation MChE 401	Dissertation Phase – II	0	0	30	30	20	500