

Curriculum and Syllabus
for
B. Tech in Chemical Engineering at NIT
Agartala



Department of Chemical Engineering
National Institute of Technology
Agartala-799046
India

Version – July 09, 2020

B. Tech (Chemical Engineering) - Semester I (Common for all Branches)

S. No	Code	Course Title	L	T	P	H	Credit
01		Language (Communication in English)[[GR-I]/Introduction to Programming [GR II]	03	0	×	03	03
02		Engineering Chemistry-I	03	0	×	03	03
03		Engineering Physics-I	02	01	00	03	03
04		Engineering Mathematics-I	02	01	00	03	03
05		Engineering Mechanics [GR-I]/ Disaster Management [GR-II]	03 02	01 0	00 ×	04 02	04 02
06		Basic Electrical Engineering[GR-I]/ Basic Electronics [GR-II]	03 03	00 00	×	03 03	03 03
Practical							
07		Engineering Chemistry Lab [GR-I]/ Engineering Physics Lab [GR-II]	×	×	02	02	01
08		Basic Electrical Engineering Lab[GR-I]/ Basic Electronics Lab [GR-II]	×	×	02	02	01
09		Workshop Practice-[GR-I]/ Engineering Graphics [GR-II]	×	×	02	02	01
			01	00	02	03	02
10		Computer Programming Lab [GR II]	×	×	02	02	01
11		NSS/NCC	×	×	×	×	0
Total			GR-I/GR-II				22

B. Tech (Chemical Engineering) - Semester II (Common for all Branches)

S. No	Code	Course Title	L	T	P	H	Credit
01		Introduction to Programming [GR I]/Language (Communication in English)[[GR-II]	03	0	×	03	03
02		Engineering Chemistry-II	02	0	×	02	02
03		Engineering Physics-II	02	01	×	03	03
04		Engineering Mathematics-II	02	01	×	03	03
05		Disaster Management [GR-I] Engineering Mechanics [GR-II]/	02 04	0 0	×	02 04	02/ 04
06		Basic Electronics [GR II]/ Basic Electrical Engineering [GR-II]	03	0	×	03	03
07		Engineering Physics Lab[GR-I]/ Engineering Chemistry Lab [GR-II]	×	×	02	02	01
08		Basic Electronics Lab [GR I]/ Basic Electrical Engineering Lab[GR-II]	×	×	02	02	01
09		Engineering Graphics-[Gr II]/ Workshop Practice-[GR-II]	×	×	02	02	01
10		Computer Programming Lab [GR I]	×	×	02	02	01
Total			GR I-24/GR II-24				21



B. Tech (Chemical Engineering) - Semester III

S. No	Code	Course Title	L	T	P	H	Credit
01	UCH03BXX	Fluid Mechanics	02	01	x	03	03
02	UCH03BXX	Chemical Process Calculations	02	01	x	03	03
03	UCH03BXX	Chemical Engineering Thermodynamics I	02	01	x	03	03
04	UCH03CXX	Engineering Mathematics-III	02	01	x	03	03
05	UCH03CXX	Engineering Economics & Accountancy	03	x	x	03	03
06	UCH03BXX	Machine Design	02	01	x	03	03
07	UCH03PXX	Machine Drawing	00	00	03	03	01.5
Sessional							
08	UCH03SXX	Extra Academic Activities	x	x	03	03	00
Total			13	05	06	24	19.5

B. Tech (Chemical Engineering) - Semester IV

S. No	Code	Course Title	L	T	P	H	Credit
01	UCH04BXX	Process Heat Transfer	03	01	x	04	04
02	UCH04BXX	Chemical Engineering Thermodynamics II	02	01	x	03	03
03	UCH04BXX	Mechanical Operation	02	01	x	03	03
04	UCH04BXX	Numerical Methods for Chemical Engineering	02	01	x	03	03
05	UCH04CXX	Principles of Management	03	x	x	03	03
06	UCH04EXX	Departmental Elective/Open Elective 1/ IT Course 1	03	00	x	03	03
Practical							
06	UCH04PXX	Fluid Mechanics Laboratory	x	x	03	03	01.5
07	UCH04PXX	Numerical Methods Laboratory	x	x	03	03	01.5
Sessional							
08	UCH04SXX	Extra Academic Activities	x	x	03	03	00
Total			15	04	09	28	22.0

B. Tech (Chemical Engineering) - Semester V

S. No	Code	Course Title	L	T	P	H	Credit
01	UCH05BXX	Mass Transfer I	02	01	*	03	03
02	UCH05BXX	Chemical Reaction Engineering I	02	01	*	03	03
03	UCH05BXX	Process Dynamics & Instrumentation	02	01	*	03	03
04	UCH05BXX	Energy Sources and Utilization	03	00	*	03	03
05	UCH05EXX	Departmental Elective/Open Elective 2/ IT Course 2	03	00	*	03	03
Practical							
06	UCH05P06	Mechanical Operations Laboratory	*	*	03	03	01.5
07	UCH05P07	Heat Transfer Laboratory	*	*	03	03	01.5
08	UCH05PXX	Energy sources and Utilization Laboratory	*	*	03	03	01.5
Sessional							
10	UCH05SXX	Extra Academic Activities	x	x	03	03	00
Total			12	03	12	27	19.5

B. Tech (Chemical Engineering) - Semester VI

S. No	Code	Course Title	L	T	P	H	Credit
01	UCH06BXX	Mass Transfer II	02	01	*	03	03
02	UCH06BXX	Chemical Reaction Engineering II	02	01	*	03	03
03	UCH06BXX	Process Control	02	01	*	03	03
04	UCH06BXX	Chemical Process Technology	04	*	*	04	04
05	UCH07BXX	Project Engineering & Economics	03	01	*	04	04
06	UCH06EXX	Departmental Elective/Open Elective 3	03	*	*	03	03
Practical							
07	UCH06PXX	Chemical Reaction Engineering Laboratory	*	*	03	03	01.5
08	UCH06PXX	Process Equipment Design & Drawing I	*	01	02	03	01.5
09	UCH06PXX	Mass Transfer Laboratory	*	*	03	03	01.5
Sessional							
10	UCH06SXX	Extra Academic Activities	x	x	03	03	00
Total			16	05	11	32	24.5



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Bandopadhyay

B. Tech (Chemical Engineering) - Semester VII

S. No	Code	Course Title	L	T	P	H	Credit
01	UCH07BXX	Transport phenomena	02	01	×	03	03
02	UCH07E0XX	Departmental Elective/Open Elective 4	03	×	×	03	03
03	UCH07BXX	Process Safety Engineering	02	01	×	03	03
04	UCH07EXX	Departmental Elective/Open Elective 5	03	00	×	03	03
Practical							
05	UCH07PXX	Summer Training	×	×	×	×	01.5
06	UCH07PXX	Project I	×	×	06	06	02.0
07	UCH06PXX	Process Equipment Design & Drawing II	×	01	02	03	01.5
08	UCH06PXX	Process Control & Instrumentation Laboratory	×	×	03	03	01.5
Total			10	03	11	24	18.5

B. Tech (Chemical Engineering) - Semester VIII

S. No	Code	Course Title	L	T	P	H	Credit
01	UCH08E05	Departmental Elective/Open Elective 6	03	00	×	03	03
02	UCH08E06	Departmental Elective/Open Elective 7	03	00	×	03	03
03	UCH08E07	Departmental Elective/Open Elective 8	03	00	×	03	03
04	UCH08B20	Comprehensive Viva Voce	×	×	×	×	01
Practical							
05	UCH08P20	Project-II	×	×	09	09	03
Total			09	00	09	18	13

Those students who will opt for industrial project the credit distribution will be as below:

S. No	Code	Course Title	L	T	P	H	Credit
01	UCH08B20	Comprehensive Viva Voce	×	×	×	×	01
Practical							
02	UCH08P21	Industrial Project	×	×	40	40	10
03	UCH08P22	Project Seminar	×	×	×	×	02
Total			00	00	40	40	13

Note: L-Lecture, T-Tutorial, P-Practical, H- Class Hour



Distribution of credits semester wise

S. No	Semester	L	T	P	H	Credit
01	Semester I	Common to all Engineering				43.0
02	Semester II					
03	Semester III	13	05	06	24	19.5
04	Semester IV	15	04	09	28	22.0
05	Semester V	12	03	12	27	19.5
06	Semester VI	16	05	11	32	24.5
07	Semester VII	10	03	11	24	18.5
08	Semester VIII	09	00	09	18	13.0
	Semester VIII (For Student opted for Industrial Project)	00	00	40	40	
Total		76	20	62	161	160.0
				92	182	

Elective Courses:

Departmental Electives:

1. Material Science & Engineering
2. Polymer Processing Engineering
3. Biochemical and Bioprocess Engineering
4. Computational Fluid Dynamics
5. Environmental Engineering
6. Process Modeling, Simulation and Optimization
7. Petroleum and Petrochemical Engineering
8. Advanced Separation Processes
9. Entrepreneurship and Management
10. Systems Biology
11. Advanced Heat Transfer
12. Green Chemistry and Processes

Open Electives:

1. IT Course (At least 40 hours or 12 weeks courses from open learning sources/UG courses offered by CSE Departments NITA)
2. Open Elective (At least 40 hours or 12 weeks courses from open learning sources/UG courses offered by other Departments of NITA)

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