

Faculty of Engineering, School of Civil, Biotechnology and Chemical Engineering
Department of Biotechnology and Chemical Engineering

Degree: B. Tech. Chemical Engineering

Total Credit: 160

Third Semester						Fourth Semester					
Code	Subject Name	L	T	P	C	Code	Subject Name	L	T	P	C
MEE2001	Engineering Economics	3	0	0	3	MAS2001	Statistics & Probability	3	0	0	3
MBB21XX	Management of Technology	3	0	0	3	CHE2201	Reaction Engineering	3	1	0	4
CHE2101	Process Calculations	3	1	0	4	CHE2202	Heat and Mass Transfer	3	1	0	4
CHE2102	Fluid Mechanics	3	1	0	4	XXX22XX	Flexi Core- 2	3	1	0	4
CHE2103	Chemical Engg Thermodynamics	3	1	0	4	CHE22XX	Program Elective 1	3	0	0	3
XXX21XX	Flexi Core- 1	3	1	0	4	XXX00XX	Open Elective 1	3	0	0	3
CHE2130	Fluid Mechanics Lab	0	0	3	1	CHE2230	Reaction Engineering Lab	0	0	3	1
CHE2131	Simulation Lab 1 / Data Structures and Algorithms Lab	0	0	3	1	CHE2231	Heat and Mass Transfer Lab	0	0	3	1
CHE2170	Project-based Learning 1	0	0	2	1	CHE2270	Project-based Learning 2	0	0	2	1
		18	4	8	25			18	3	8	24
	Total Contact Hours (L+T+P)	30					Total Contact Hours (L+T+P)	29			
Fifth Semester						Sixth Semester					
Code	Subject Name	L	T	P	C	Code	Subject Name	L	T	P	C
CHE3101	Process Plant Design	3	1	0	4	CHE3201	Process Dynamics and Control	3	1	0	4
CHE3102	Design of Separation Processes	3	1	0	4	CHE32XX	Program Elective 4	3	0	0	3
XXX31XX	Flexi Core- 3	3	1	0	4	CHE32XX	Program Elective 5	3	0	0	3
CHE31XX	Program Elective 2	3	0	0	3	CHE32XX	Program Elective 6	3	0	0	3
CHE31XX	Program Elective 3	3	0	0	3	XXX00XX	Open Elective 3	3	0	0	3
XXX00XX	Open Elective 2	3	0	0	3	CHE3202	Professional Practice	0	0	2	1
CHE3130	Separation Processes lab	0	0	3	1	CHE3230	Process Dynamics and Control Lab	0	0	4	2
CHE3131	Simulation Lab 2/Object Oriented Programming Lab	0	0	2	1	CHE3270	Project-based Learning 4	0	0	6	3
CHE3170	Project-based Learning 3	0	0	2	1						
		18	3	7	24			15	1	12	22

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Total Contact Hours (L+T+P)		28				Total Contact Hours (L+T+P)		28			
Seventh Semester						Eighth Semester					
Code	Subject Name	L	T	P	C	Code	Subject Name	L	T	P	C
CHE41XX	Program Elective 7	3	0	0	3	CHE4270	Major Project	0	0	24	12
CHE41XX	Program Elective 8	3	0	0	3						
XXX00XX	Open Elective 4	3	0	0	3						
XXX00XX	Open Elective 5	3	0	0	3						
CHE4170	Internship (Industry or Research)	0	0	2	1						
		12	0	2	13			0	0	24	12
Total Contact Hours (L+T+P)		14				Total Contact Hours (L+T+P)		24			

Flexi Core

Flexi Core 1	Flexi Core 2	Flexi Core 3
CHE21XX Introduction to Biochemical Engineering XXX21XX Data Structures and Algorithm	CHE22XX Bioprocess Engineering XXX22XX Relational Database Management Systems	CHE31XX Process Safety XXX31XX Object-Oriented Programming

Program Electives	IV	VI	VII
Example - PE1 <ul style="list-style-type: none"> CHE2240: Environmental Systems Engineering CHE2241: Corrosion Engineering 	Example - PE2 <ul style="list-style-type: none"> CHE3040: Mechanical Operations and Solid Handling CHE3140: Membrane Technology Example - PE3 <ul style="list-style-type: none"> CHE3141: Industry 4.0 Applications CHE3142: Process Intensification 	Example - PE 4 <ul style="list-style-type: none"> CHE3040: Mechanical Operations and Solid Handling CHE3240: Catalysis for Energy Example - PE5 <ul style="list-style-type: none"> CHE3241: Introduction to Polymer Science and Engineering CHE3242: Composite Materials Example - PE6	Example - PE 7 <ul style="list-style-type: none"> CHE4140: Introduction to Computational Fluid Dynamics CHE4141: Process Data Analytics Example - PE8 <ul style="list-style-type: none"> CHE4142: Energy and Process Integration CHE4143: Process Optimization

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		<ul style="list-style-type: none"> • CHE3243: Advance Separation Technology • CHE3244: Air Pollution Control Engineering 	
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Open Electives

Graded OE	Non-Graded OE
OE1 CSB0001: Introduction to Materials Science and Engineering	OE1 CSB0051: Course Name
OE2 CSB0001: Renewable energy and sustainable engineering	OE2 CSB0052: Course Name
OE3 CSB0001: Introduction to Food Engineering	OE3 CSB0052: Course Name
OE4 CSB0001: Introduction to Business Analytics and Data Science	OE4 CSB0052: Course Name
OE5 CSB0001: Machine learning for life sciences	OE5 CSB0052: Course Name

****Students with CGPA more than or equal to 8.5 in second year are eligible for acquiring Honors degree by attaining additional 18 credits (160+ 18= 178 credits) as per the following scheme:**

Program Electives for Hons.		
Subject name	Semester	Credits
BIT3180*: Research Methodology	Semester V	1
BIT3280: Waste to Energy Conversion	Semester VI	3
BIT4180: Hydrogen Energy	Semester VII	3
BIT4181: Clean Technologies for Process Industries	Semester VII	3
BIT4280*: Honors Project	Semester VIII	8