

## Chemical Engineering 2018 and on

Name \_\_\_\_\_

Minor \_\_\_\_\_

Student # \_\_\_\_\_

Advisor \_\_\_\_\_

FRESHMAN YEAR - First Semester	CR	GR	FRESHMAN YEAR - Second Semester	CR	GR
FE 1100 - Study and Careers in Engineering (optional for transfer students)	1		Mech. Engr. 1720 - Intro. to Engineering Design	3	
Chem 1100 - Introduction to Lab Safety	1		ChE 1100, Comp Sci 1971/1981, or Comp Sci 1972/1982 (can be substituted by Comp Sci 1570/1580)	3	
Chem 1310 - General Chemistry I	4		Chem 1320 - General Chemistry II	3	
Chem 1319 - General Chemistry Laboratory	1		Math 1215 - Calculus II for Engineers <sup>(1)</sup>	4	
Math 1214 - Calculus I for Engineers <sup>(1)</sup>	3		Physics 1135 - Engineering Physics I (Math 1214)	4	
Hist - 1200, 1300, 1310, or Pol. Sci. 1200 <sup>(2)</sup>	4				
Engl 1120 - Exposition and Argumentation	3				
<b>TOTAL</b>	<b>17</b>		<b>TOTAL</b>	<b>17</b>	
SOPHOMORE YEAR - First Semester	CR	GR	SOPHOMORE YEAR - Second Semester	CR	GR
ChE 2100 - Chemical Engr. Material Balances <sup>(1)</sup> (Chem 1320, Math 1215, and Phys 1135)	4		ChE 2110 - Chemical Engr. Thermodynamics I <sup>(1)</sup> (Math 2222 and ChE 2100)	3	
ChE 2300 - Chemical Process Materials (Phys 1135)	1		ChE 2310 - Professional Practice and Ethics <sup>(2)</sup> (ChE sophomore standing)	1	
Chem 2210 - Organic Chemistry	4		Science Elective <sup>(5)</sup>	4	
Math 2222 - Calculus with Analyt. Geometry III <sup>(1)</sup>	4		Math 3304 - Elementary Differential Equations	3	
Physics 2135 - Engineering Physics II (Phys 1135 and Math 1215)	4		Humanities or Social Science Elective <sup>(4)</sup>	3	
			Humanities or Social Science Elective <sup>(4)</sup>	3	
<b>TOTAL</b>	<b>17</b>		<b>TOTAL</b>	<b>17</b>	
JUNIOR YEAR - First Semester	CR	GR	JUNIOR YEAR - Second Semester	CR	GR
ChE 3101 - Transport Phenomena (Math 3304 and ChE 2110)	4		ChE 3131 - Separations in ChE and BioChE (ChE 3101, ChE 3111, and ChE 3120)	3	
ChE 3111 - Numerical Computing (Math 3304 and Comp Sci 1971/1981 or 1972/1982)	3		ChE 3141 - Process Operations (ChE 3101 and ChE 3120)	3	
ChE 3120 - Chemical Engr. Thermodynamics II (C or better in ChE 2100 and ChE 2110)	3		ChE 3150 - Reactor Design (ChE 3101 and ChE 3111)	3	
Econ 1100 or 1200	3		Stat 3113 - Applied Engineering Statistics (C or better in Math 1215)	3	
Humanities or Social Science Upper Level Elective <sup>(4)</sup>	3		English 1160 or 3560	3	
<b>TOTAL</b>	<b>16</b>		<b>TOTAL</b>	<b>15</b>	
SENIOR YEAR <sup>(3)</sup> - First Semester	CR	GR	SENIOR YEAR <sup>(3)</sup> - Second Semester	CR	GR
ChE 4091 - Chemical Process Design I (ChE 3131, ChE 3141, and ChE 3150)	1+2		ChE 4097 - Chemical Process Design II <sup>(2)</sup> (ChE 4091 and ChE 4110)	1+2	
ChE 4101 - Chemical Engineering Laboratory I <sup>(2)</sup> (ChE 3141)	1+2		ChE 4130 - Chemical Engineering Laboratory II <sup>(2)</sup> (ChE 3131, ChE 3141, and ChE 3150)	1+2	
ChE 4110 - Process Dynamics and Control (ChE 3131, ChE 3141, and ChE 3150)	3		ChE 5XXX - Chemical Engineering Elective <sup>(6)</sup>	3	
ChE 4140 - Chemical Process Safety (ChE 3150)	3		ChE 5XXX - Chemical Engineering Elective <sup>(6)</sup>	3	
ChE 5XXX - Chemical Engineering Elective <sup>(6)</sup>	3		ChE 5XXX - Chemical Engineering Elective <sup>(6)</sup>	3	
<b>TOTAL</b>	<b>15</b>		<b>TOTAL</b>	<b>15</b>	

Note: (i) A cumulative GPA of 2.50 or better and a "C" or better in Chem 1310, Chem 1319, Chem 1320, Math 1214, Math 1215 and Physics 1135 are required to be admitted into the chemical engineering major.

(ii) Fine prints in parentheses are prerequisites with *Italic* ones representing corequisites.

(iii) A degree in Chemical Engineering also requires a minimum of 129 credit hours and

(1) "C" or better to proceed to the next course

(2) Communications emphasized course.

(3) Senior assessment is required prior to graduation.

(4) Courses chosen from 'Requirements for Humanities and Social Sciences Courses for Engineering Degrees' at ugs.mst.edu. The prerequisites for the upper level course must be completed with a passing grade.

(5) Lecture-lab pair from Chem 2510(4) ; Chem 2220(4) & 2289(1) ; Chem 3420(3) & 3429(1) ; Chem 4610(3) & 4619(2) ; or Bio. Sci. 2213(3) & 2219(1) ; Bio. Sci. 3313(3) & 3319(2).

(6) Any ChE 5xxx and any class from the approved list published in ChE website but only 3 cr. hr of ChE 4000 or ChE 4099. Students may have no more than 3 hrs from approved, out-of-department elective

## Chemical Engineering – Biochemical Engineering emphasis

Name \_\_\_\_\_

Minor \_\_\_\_\_

Student # \_\_\_\_\_

Advisor \_\_\_\_\_

FRESHMAN YEAR - First Semester	CR	GR	FRESHMAN YEAR - Second Semester	CR	GR
FE 1100 - Study and Careers in Engineering (optional for transfer students)	1		Mech. Engr. 1720 - Intro. to Engineering Design	3	
Chem 1100 - Introduction to Lab Safety	1		ChE 1100, Comp Sci 1971/1981, or Comp Sci 1972/1982 (can be substituted by Comp Sci 1570/1580)	3	
Chem 1310 - General Chemistry I	4		Chem 1320 - General Chemistry II	3	
Chem 1319 - General Chemistry Laboratory	1		Math 1215 - Calculus II for Engineers <sup>(1)</sup>	4	
Math 1214 - Calculus I for Engineers <sup>(1)</sup>	3		Physics 1135 - Engineering Physics I (Math 1214)	4	
Hist - 1200, 1300, 1310, or Pol. Sci. 1200 <sup>(2)</sup>	4				
Engl 1120 - Exposition and Argumentation	3				
<b>TOTAL</b>	<b>17</b>		<b>TOTAL</b>	<b>17</b>	
SOPHOMORE YEAR - First Semester	CR	GR	SOPHOMORE YEAR - Second Semester	CR	GR
ChE 2100 - ChE Material and Energy Balances <sup>(1)</sup> (Chem 1320, Math 1215, and Phys 1135)	4		ChE 2110 - Chemical Engr. Thermodynamics I <sup>(1)</sup> (Math 2222 and ChE 2100)	3	
ChE 2300 - Chemical Process Materials (Phys 1135)	1		ChE 2310 - Professional Practice and Ethics <sup>(2)</sup> (ChE sophomore standing)	1	
Chem 2210 - Organic Chemistry	4		Science Elective <sup>(5)</sup>	4	
Math 2222 - Calculus with Analyt. Geometry III <sup>(1)</sup>	4		Math 3304 - Elementary Differential Equations	3	
Physics 2135 - Engineering Physics II (Phys 1135 and Math 1215)	4		Stat 3113 - Applied Engineering Statistics (C or better in Math 1215)	3	
			Econ 1100 or 1200	3	
<b>TOTAL</b>	<b>17</b>		<b>TOTAL</b>	<b>17</b>	
JUNIOR YEAR - First Semester	CR	GR	JUNIOR YEAR - Second Semester	CR	GR
ChE 3101- Transport Phenomena in ChE and BioChE (Math 3304 and ChE 2110)	4		ChE 3131 - Separations in ChE and BioChE (ChE 3101, ChE 3111, and ChE 3120)	3	
ChE 3111 - Numerical Computing in ChE and BioChE (Math 3304 and Comp Sci 1971/1981 or 1972/1982)	3		ChE 3141 - Process Operations in ChE and BioChE (ChE 3101 and ChE 3120)	3	
ChE 3120 - Chemical Engr. Thermodynamics II (C or better in ChE 2100 and ChE 2110)	3		ChE 3150 - Chemical Engr. Reactor Design (ChE 3101 and ChE 3111)	3	
Science Elective <sup>(5)</sup>	4		Science Elective <sup>(5)</sup>	4	
Humanities or Social Science Elective <sup>(4)</sup>	3		English 1160 or 3560	3	
<b>TOTAL</b>	<b>17</b>		<b>TOTAL</b>	<b>16</b>	
SENIOR YEAR <sup>(3)</sup> - First Semester	CR	GR	SENIOR YEAR <sup>(3)</sup> - Second Semester	CR	GR
ChE 4091 - Chemical Process Design I (ChE 3150 and ChE 5250)	1+2		ChE 4097 - Chemical Process Design II <sup>(2)</sup> (ChE 4091 and ChE 4110)	1+2	
ChE 4110 - Process Dynamics and Control (ChE 3150 and ChE 5250)	3		ChE 4210 - Biochemical Reactor (ChE 3150)	3	
ChE 4201 - BioChE. Sep. and Control Laboratory (ChE 5250)	1+2		ChE 4220 - Biochemical Reactor Laboratory <sup>(2)</sup> (ChE 4210 and ChE 5250)	1+2	
ChE 5250 - Isolation and Purification of Biologicals (ChE 3131 and ChE 3141)	3		ChE 4241 - Process Safety in Che. and Bioche. Industries (ChE 4210)	3	
Humanities or Social Science Upper Level Elective <sup>(4)</sup>	3		Humanities or Social Science Elective <sup>(4)</sup>	3	
<b>TOTAL</b>	<b>15</b>		<b>TOTAL</b>	<b>15</b>	

Note: (i) A cumulative GPA of 2.50 or better and a "C" or better in Chem 1310, Chem 1319, Chem 1320, Math 1214, Math 1215 and Physics 1135 are required to be admitted into the chemical engineering major.

(ii) Fine prints in parentheses are prerequisites with *italic* ones representing corequisites.

(iii) A degree in Biochemical Engineering emphasis also requires a minimum of 131 credit hours and

(1) "C" or better to proceed to the next course

(2) Communications emphasized course.

(3) Senior assessment is required prior to graduation.

(4) From approved list published on the website of Undergraduate Studies.  
The upper level course must be at 1000 level or above, with a prerequisite, and completed with a passing grade.

(5) A minimum of 12 credit hours in science electives are required. Select

(a) three courses from Chem 2220(4); Chem 4610(3); Chem 4620(3);  
Bio. Sci. 2213(3); Bio. Sci. 3313(3); Bio. Sci. 4323(3); and

(b) a minimum of two lab. courses from Chem 2219(1) or 2229(1);  
Chem 4619(2); Bio. Sci. 2219(1); Bio. Sci. 3319(2); Bio. Sci. 4329(2)