

# Five Year BS/MS Program in CBE

1 <sup>st</sup> YEAR	Session	Course	Chemical Engineering	SH	Pre-Requisite or/Co-Requisite
1 <sup>st</sup> Semester	All	22M:031	Engineering Math I – Single Variable Calculus	4	P: H.S. Algebra & Trigonometry
	F	59:005	Engineering Problem Solving I	3	
	All	4:011	Principles of Chemistry I	4	
	All	10:003	Accelerated Rhetoric (or 10:001 & 10:002)	4	
	F	52:090	First-year Engineering Seminar	0	
<b>Total</b>				<b>15</b>	
2 <sup>nd</sup> Semester	All	22M:032	Engineering Math II – Multivariable Calculus	4	P: 22M:031
	S	59:006	Engineering Problem Solving II	3	C: 22M:031
	F/S	29:081	Introductory Physics I	4	C: 22M:031
	All	22M:033	Engineering Math III – Matrix Algebra	2	C: 22M:032
	All	4:012	Principles of Chemistry II	4	P: 4:011
S	52:090	CBE Departmental Seminar	0		
<b>Total</b>				<b>17</b>	<b>(1-year total = 32)</b>
3 <sup>rd</sup> Semester	All	22M:034	Engineering Math IV – Differential Equations	3	P: 22M:033
	All		General Education Component #1	3	
	All	59:007	Fundamentals of Engineering I – Statics	2	P: 22M:031; C: 29:081
	All	59:008	Engineering Fundamentals II – Electrical Circuits	3	C: 22M:034
	All	59:009	Engineering Fundamentals III – Thermodynamics	3	P: 22M:031, 4:011, 29:081
F	52:041	Process Calculations	3	P: 22M:031	
<b>Total</b>				<b>17</b>	
4 <sup>th</sup> Semester	S	52:103	ChE Thermodynamics	3	P: 52:041; 59:009
	S	52:151	Engineering Flow and Heat Exchange	3	P: 52:041
	All	4:121	Organic Chemistry I	3	P: 4:012
	All		General Education Component #2	3	
	All		General Education Component #3	3	
F/S	52:091	CBE Professional Seminar	0	P: 52:041	
<b>Total</b>				<b>15</b>	<b>(2 year total = 64)</b>
5 <sup>th</sup> Semester	F	52:161	Mass Transfer and Separations	3	P: 52:103, 52:151
	F	52:171	Thermodynamics/Transport Laboratory	3	P: 52:103; 52:151; C: 52:161
	All	4:122	Organic Chemistry II	3	P: 4:121
	All	4:141	Organic Chemistry Laboratory	3	P: 4:121; C: 4:122
	All		Elective #1: Statistics Elective	3	
F/S	52:091	CBE Professional Seminar	0	P: 52:041	
<b>Total</b>				<b>15</b>	
6 <sup>th</sup> Semester	S	52:105	Chemical Reaction Engineering	3	P: 52:161
	S	52:172	Chemical Reaction Engineering/Separation Lab.	2	P: 52:161; 52:171; C: 52:105
	S	52:187	Chemical Process Safety	3	P: 52:151; 52:161; C: 52:105
	All		Elective #2: Additional Elective	3	
	All		Elective #3: Additional Elective	3	
All		General Education Component #4	3		
F/S	52:091	CBE Professional Seminar	0	P: 52:041	
<b>Total</b>				<b>17</b>	<b>(3 year total = 96)</b>
7 <sup>th</sup> Semester	F	52:185	Process Dynamics & Control	3	P: 52:105
	F		Advanced Chemical Science Elective #1	3	
	F	52:173	Senior Laboratory Experience	2	P: 52:172
	All		Elective #4: Transport Phen or Intermediate Thermo	3	
	All		Elective #5: Additional Elective	3	
All	57:015	Materials Science	3	P: 4:011; C: 22M:031	
F/S	52:091	CBE Professional Seminar	0	P: 52:041	
<b>Total</b>				<b>17</b>	
8 <sup>th</sup> Semester	S	52:186	Chemical Engineering Process Design	3	P: 52:185, 52:187
	S		Advanced Chemical Science Elective #2	3	
	S		Advanced Chemical Science Elective #3: Lab	3	
	S	52:215	Elective #6: Intro to Lit Review & Proposal Writing	3	
	All		General Education Component #5	3	
F/S	52:092	Enriching Activities Seminar	0	Senior Status	
<b>Total</b>				<b>15</b>	<b>(4 year total = 128)</b>
9 <sup>th</sup> Semester	F		Transport Phen or Intermediate Thermo (course not taken in 7 <sup>th</sup> semester)	3	
	All		Advanced Graduate Elective (Breadth Requirement)	3	
All		MS Research or Adv Grad Elective	3	P: 52:172	
<b>Total</b>				<b>9</b>	
10 <sup>th</sup> Semester	All		Graduate Kinetics Requirement	3	P: 52:185, 52:187
	S		Advanced Graduate Elective	3	
S		MS Research or Adv Grad Elective	3		
<b>Total</b>				<b>9</b>	<b>(5 year total = 146)</b>

Note: Items in red are cross credited to the BS and the MS degree.