

## Chemical and Biological Engineering (2017)

		Course Code	Course Title	Credits (Hour)	Remarks
<b>General Education (10 credits)</b>		GETE011	Thinking and Writing I	2(2)	
		GETE014	Thinking and Writing II	2(2)	
		IFLS003	Academic English I	2(4)	
		IFLS004	Academic English II	2(4)	
		GEKS001	Freshman Seminar	1(1)	
		GECT001	Computational Thinking	1(1)	
<b>Core General Education (9 credits)</b>	<b>Ethics &amp; Ideas</b>	GECE	Choose 2	3(3)	Choose 3
	<b>Literature &amp; Art</b>	GELA		3(3)	
	<b>World Cultures</b>	GEFC		3(3)	
	<b>Historical Investigation</b>	GEHI		3(3)	
	<b>Quantitative Research</b>	GEQR		3(3)	
	<b>Sociological Studies</b>	GESO		3(3)	
	<b>Science &amp; Technology</b>	GEST		3(3)	
<b>Major-Related General Education (25 credits)</b>		MATH 161	Calculus with Lab I	3(4)	
		MATH 162	Calculus with Lab II	3(4)	
		PHYS 151	General Physics I	3(4)	
		PHYS 161	General Physics Laboratory I	1(3)	
		PHYS 152	General Physics II	3(4)	
		PHYS 162	General Physics Laboratory II	1(3)	
		CHEM 151	General Chemistry I	3(4)	
		CHEM 153	General Chemistry Laboratory I	1(3)	
		CHEM 152	General Chemistry II	3(4)	
		CHEM 154	General Chemistry Laboratory II	1(3)	
		EGRN 151	Computer Languages Lab	3(4)	Choose 1
		LIBS 150	Life Sciences	3(3)	
<b>General Elective (Designated in a relation to Business School Course)</b>		EGRN 111	Management of Technology and Business Strategy	6	Choose 2
		EGRN 200	Economic Investment Decision Analysis		
		IMEN 204	General Accounting and Cost Accounting		
		BUSS 205	Marketing Management		
		BUSS 207	Financial Management		
		BUSS 211	Introduction to Operations Management		
		BUSS 246	Management Science		
		BUSS259	New Venture Creation and Management		
		BUSS 311	Organizational Behavior		
		BUSS 313	International Business		
		BUSS 152	Principles of Accounting		
		BUSS 215	Introduction to Management Information Systems		
		BUSS 402	Management Strategy		
		BUSS 333	International Production, Purchasing and R&D Management		
		BUSS 407	New Product Development and Marketing		
		SPGE 207	Innovation Trend & Business Model Design		
<b>General Elective (others)</b>		This remaining 8 credits can be fulfilled from any courses regardless of whether it is General Education or Major.		8	
<b>Subtotal</b>				<b>58</b>	

		Course Code	Course Title	Credits (Hour)	Prerequisite Course
<b>Major Required (31 credits)</b>		CHBE222	Introduction to Chemical and Biological Engineering	2(3)	
		CHBE223	Organic Chemistry I	3(3)	
		CHBE224	Chemical Engineering Thermodynamics	3(3)	
		CHBE205	Biotechnology	3(3)	
		CHBE210	Fluid Mechanics	3(3)	
		CHBE207	Physical Chemistry	3(3)	
		CHBE209	Engineering Mathematics I	3(3)	
		CHBE301	Heat & Mass Transfer	3(4)	
		CHBE327	Reaction Engineering	3(3)	
		CHBE372	Chemical and Biological Engineering Laboratory I	2(4)	
		CHBE471	Chemical and Biological Engineering Laboratory II	2(4)	
		CHBE345	Methodology and Trends in Chemical and Biological Engineering	1(2)	
<b>Major Elective (Intensive Advanced) (12 credits)</b>		CHBE310	Separation Process	3(3)	Chemical Engineering Thermodynamics
		CHBE320	Process Control	3(3)	Chemical Engineering Thermodynamics
		CHBE321	Bioprocess Engineering	3(3)	Biotechnology
		CHBE417	Process and Product Design	3(3)	

### ● Credits Required in Major

Courses		First Major	Intensive Major	Double Major	Dual Major	Minor	General Transfer	Undergraduate Transfer
Basic Course	Required	31	31	31	31	31	Assigned Required Credits	31
	Advanced Course	Intensive Advanced	11	12	11	12		12
		Elective		29		14		—
<b>Total Credits in CHBE</b>		<b>42</b>	<b>72</b>	<b>42</b>	<b>57</b>	<b>43</b>		<b>72</b>

● Students must earn at least 1 credit form "Department Seminar I,II"

● Students must take "Human Rights and Gender Equality" 4 times

● Minimum Total Credits : 130

● Completion of 5 Courses lectured in English (Undergraduate Transfer : 3 Courses)

### ● Acquirement of Public English Proficiency Test Score

TOEIC	TOEFL			TOSEL	TEPS	IELTS
	PBT	CBT	IBT			
650	530	193	70	498	556	5.5

● Acquirement of Public Korean Proficiency Test Score (TOPIC level 4 or above) : International Students only

● Students pursuing Intensive Major must submit Graduation Thesis