

**To:** The Faculty of the College of Engineering

**From:** The Faculty of the School of Chemical Engineering

**Re:** Curriculum Change for the B.S. degree in Chemical Engineering

The Faculty of the School of Chemical Engineering has approved the following changes to the BSChE curriculum effective for students who entered the School of Chemical Engineering fall 2011 and after. This action is now submitted to the Engineering Faculty with a recommendation for approval.

**New Requirements:** In place of the current requirements of MA 26200 and 30300, students will be provided the opportunity to choose between two separate math tracks, thereby selecting two other possible math courses to replace the degree requirements of MA 26200 and MA 30300. These two math courses will be chosen from among two lists of pre-approved courses, provided below, with only 7 credits from each track applying toward total graduation hours:

Math track 1

- (3) MA 26500 Linear Algebra  
+  
(4) MA 36600 Ordinary Diff Eq

or

Math track 2

- (4) MA 26200 Linear Algebra and Diff Eq  
+ one of the following  
(3) MA 30300 Differential Equations and Partial Differential Equations for Engineering and the Sciences  
(3) MA 30400 Differential Eq And Analysis of Nonlinear Systems For Engineering And The Sciences  
(4) MA 36600 Ordinary Differential Equations  
(3) MA 51400 Numerical Analysis  
(3) ME 58100 Numerical Methods In Mechanical Engineering

APPROVED FOR THE FACULTY  
OF THE SCHOOLS OF ENGINEERING  
BY THE ENGINEERING  
CURRICULUM COMMITTEE

ECC Minutes 11/12/12

Date 11/29/12

Chairman ECC [Signature]

In place of the current requirement of BIOL 23000, students will be provided with the opportunity to choose one course from a list of pre-approved courses to meet this degree requirement:

Biology Selective

Choose one of the following

BIOL 23000: Biology of the Living Cell

BIOL 23100: Biology III: Cell Structure and Function

CHM 53300: Introductory Biochemistry  
BCHM 30700: Biochemistry  
BCHM 56100: General Biochemistry I

In place of 3 current credits of CHE elective, students will be required to complete a 3 credit course titled "Process Safety Management." This course is currently taught under the temporary number, CHE 49700. A permanent course number will be requested this fall as this will be the third semester it is offered.

**Reason:** As student feedback over the last several semesters has indicated, the above changes to Math and Biology selectives should provide students with scheduling flexibility as well as the ability to better tailor their plans of study to their interests, while exposing our undergraduates to the same required math topics and those bio-related topics equally relevant to chemical engineers. The inclusion of the "Process Safety Management" course is in line with the newly adopted ABET chemical engineering program accreditation criteria that requires the full integration of process safety and hazard prevention into the core engineering curriculum as well as feedback from industrial representatives and recent graduates that ChE students need more and consistent exposure to this essential area.

A. Varma, Head  
School of Chemical Engineering  
7/1/12

**Supporting Documentation – Curriculum Change for the B.S. degree in Chemical Engineering**

**Current Proposed**  
**FRESHMAN YEAR (First Year Engineering)**

<u>First Semester</u>		
(4)	CHM 12300 or 11500	Gen. Chemistry
(4)	ENGL 10600 or 10800	(3) English Comp
(2)	ENGR 13100	Transforming Ideas To Innovation I
(4)	MA 16500 or 16100	Geom & Calc I
14		

No Change

<u>Second Semester</u>		
(4)	CHM 12400 or 11600	Gen. Chemistry
(3)	COM 11400	Fund. of Communication
(4)	MA 16600 or 16200	Geom & Calc II
(2)	ENGR 13200	Transforming Ideas To Innovation II
(4)	PHYS 17200	Mechanics
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No Change

**SOPHOMORE YEAR**

<u>Third Semester</u>		
(0)	CHE 20000	Chem Engr Seminar
(4)	CHE 20500	Chemical Engr Calc
(3)	CHM 26100	Organic Chemistry I
(1)	CHM 26300	Organic Chem Lab I
(4)	MA 26100	Multivar Calculus
(3)	PHYS 24100	Electricity & Optics
(3)	Gen-Ed Elective	
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No Change

<u>Fourth Semester</u>			<u>Fourth Semester</u>		
(4)	CHE 21100	Chem Engr Thermo	(4)	CHE 21100	Chem Engr Thermo
(3)	CHE 32000	Statistical Modeling	(3)	CHE 32000	Statistical Modeling
(3)	CHM 26200	Organic Chemistry II	(3)	CHM 26200	Organic Chemistry II
(1)	CHM 26400	Organic Chm Lab II	(1)	CHM 26400	Organic Chm Lab II
(4)	MA 26200	Liner Algebra & Diff Eq.	(4/3)	<b>Math Selective 1</b>	
15			15/14		

**JUNIOR YEAR**

<u>Fifth Semester</u>			<u>Fifth Semester</u>		
(3)	CHE 30600	Staged Separations	(3)	CHE 30600	Staged Separations
(4)	CHE 37700	Momentum Transfer	(4)	CHE 37700	Momentum Transfer
(3)	CHM 37000	Physical Chemistry	(3)	CHM 37000	Physical Chemistry
(3)	BIOL 23000	Biology of the Living Cell	(3)	<b>Biology Selective</b>	
(3)	MA 30300	Diff Eqs for Engr	(3/4)	<b>Math Selective 2</b>	
16			16/17		

Sixth Semester

- (0) CHE 30000 Chem Engr Seminar
- (3) CHE 33000 Prin of Molec Engr
- (4) CHE 34800 Chem Reaction Engr
- (4) CHE 37800 Heat & Mass Transfr
- (3) Gen-Ed Elective
- (3) Engineering Elective

No Change

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**SENIOR YEAR**

Seventh Semester

- (1) CHE 40000 Professional Guidance
- (4) CHE 43500 Chem Engr Lab
- (3) CHE 45600 Process Dyn & C'trol
- (3) Gen-Ed Elective
- (3) Gen-Ed Elective
- (3) CHE Elective

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Seventh Semester

- (1) CHE 40000 Professional Guidance
- (4) CHE 43500 Chem Engr Lab
- (3) CHE 45600 Process Dyn & C'trol
- (3) **CHE 49700 Process Safety Mgmt**
- (3) Gen-Ed Elective
- (3) Gen-Ed Elective

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Eighth Semester

- (4) CHE 45000 Design...Process Sys
- (3) CHE Elective
- (3) Technical Elective
- (3) Gen-Ed Elective
- (3) Gen-Ed Elective

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No Change