

# Chemical and Biomolecular Engineering Course Planning Guide (37 CUs)

Entered 2020 or Later

## Mathematics/Natural Sciences (12 CU)

- MATH 104 / 1400
- MATH 114 / 1410
- MATH 240 / 2400
- MATH 241 / 2410
- CHEM 101 / 1012
- CHEM 053 / 1101
- CHEM 102 / 1022
- CHEM 054 / 1102
- PHYS 140 / 150 / 170 / 0140 / 0150 / 0170 *or* MEAM 110 / 1100\*
- PHYS 141 / 151 / 171 / 0140 / 0150 / 0170 *or* ESE 112 / 1120\*
- CHEM 221 / 2210 *or* MSE 221 / 2210
- CHEM 241 / 2410
- CHEM 242 / 2420 *or* 243 / 2425 *or* 251 / 2510

## Technical Electives (5 CUs)

- CBE Elective\*\* \_\_\_\_\_
- Engineering Elective \_\_\_\_\_
- CHEM 223 / 2230 *or* 244 / 249 *or* 2411 / 2421 *or* CBE 480 / 4800
- Math/Nat Sci/Eng Elective\*\*\* \_\_\_\_\_
- Math/Nat Sci/Eng Elective\*\*\* \_\_\_\_\_

## CBE Core Curriculum (13 CUs)

- ENGR 105 / 1050 *Intro to Scientific Computing*
- CBE 160 / 1600 *Intro to Chemical Engineering*
- CBE 230 / 2300 *Material and Energy Balances*
- CBE 231 / 2310 *Thermodynamics of Fluids*
- CBE 350 / 3500 *Fluid Mechanics*
- CBE 351 / 3510 *Heat and Mass Transport*
- CBE 353 / 3530 *Molec. Thermo. & Chem. Kin.*
- CBE 360 / 3600 *Chemical Process Control*
- CBE 371 / 3710 *Separation Processes*
- CBE 400 / 4000 *Intro to Product & Process Design*
- CBE 410 / 4100 *Chemical Engineering Laboratory*
- CBE 451 / 4510 *Chemical Reactor Design*
- CBE 459 / 4590 *Product & Process Design Projects*

## General Electives (7 CUs)

- EAS 203/2030
- WRIT \_\_\_\_\_
- SS/H \_\_\_\_\_
- SS/H \_\_\_\_\_
- SS/H \_\_\_\_\_
- SS/H/TBS \_\_\_\_\_
- SS/H/TBS \_\_\_\_\_

### UNDERGRADUATE FACULTY ADVISOR SIGN-OFF

**Student Name:** \_\_\_\_\_ **Faculty Advisor:** \_\_\_\_\_

- I have met with the above student; please clear this student to register for next semester.

**Faculty Advisor Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

\*One Tech Elective waived if PHYS 150 / 151 / 0150 / 0151 or 170 / 171 / 0170 / 0171 taken

\*\*CBE 300 / 3000 level or above

\*\*\*Independent Study (CBE 099 / 0099) can be used

# Typical Four-Year Plan

## Freshman Year

Fall Semester (4.5 CUs)	Spring Semester (5.5 CUs)
CHEM 101 / 053 or 1012 / 1101 (1.5 CUs)	CHEM 102 / 054 or 1022 / 1102(1.5 CUs)
MATH 104 / 1400	MATH 114 / 1410
PHYS 140 / 0140	PHYS 141 / 0141
CBE 160 / 1600	General Elective*
	WRIT Requirement

## Sophomore Year

Fall Semester (4 CUs)	Spring Semester (4 CUs)
CHEM 241 / 2410	Advanced Chemistry Elective
MATH 240 / 2400	MATH 241 / 2410
CBE 230 / 2300	CBE 231 / 2310
ENGR 105 / 1050	General Elective*

## Junior Year

Fall Semester (5 CUs)	Spring Semester (5 CUs)
CHEM 221 / 2210 / MSE 221 / 2210	CBE 351 / 3510
CBE 350 / 3500	CBE 353 / 3530
CBE 360 / 3600	CBE 371 / 3710
General Elective*	Technical Elective (Laboratory)
Technical Elective	General Elective*

## Senior Year

Fall Semester (5 CUs)	Spring Semester (4 CUs)
CBE 400 / 4000	CBE 459 / 4590
CBE 410 / 4100	Technical Elective
CBE 451 / 4510	Technical Elective
Technical Elective	General Elective*
General Elective*	

\*One Tech Elective waived if PHYS 150 / 151 / 0150 / 0151 or 170 / 171 / 0170 / 0171 taken

\*\*CBE 300 / 3000 level or above

\*\*\*Independent Study (CBE 099 / 0099) can be used