

# Chemical Engineering

FIRST YEAR		SECOND YEAR		THIRD YEAR		FOURTH YEAR	
FALL	SPRING	FALL	SPRING	FALL	SPRING	FALL	SPRING
WRIT 150 4	CHE 120 (MATH 125, CHEM 105AL) or GE A 4	CHE 330 (MATH 226g) 4	PHYS 152L PHYS 151L, (MATH 226) 4	GE C 4	GE B 4	GE D* 4	GE C 4
CHE 120 (MATH 125, CHEM 105a) or GE A 4	MATH 126 or MATH 129* MATH 125 4	MATH 226 or MATH 229 MATH 126 or 129 4	CHEM 322aL CHEM 105bL 4	CHE ELECTIVE 4	CHE 444cL CHE 330, 444bL (CHE 447) 2	CHE 460L CHE 120, (MATH 245) 4	CHE 480 CHE 485 4
MATH 125 (GE F)* 4	CHEM 105bL CHEM 105aL 4	PHYS 151L (GE E) MATH 125 or 126 or 226 4	MATH 245 MATH 226 or 229 4	CHEM 430 CHEM 300L or 322aL, MATH 226, PHYS 151L 4	CHE ELECTIVE 4	CHE 485 CHE 442, CHE 443 4	CHEMISTRY ELECTIVE 4
CHEM 105aL (GE E)* 4	GESM (GE B)# 4	CHE 305 MATH 125 or 126 or 226 4	CHE 444aL CHE 120, (CHE 330, CHE 350) 2	CHE 443 (CHE 350 or MATH 245) 4	CHE 442 MATH 245, CHE 443 4	WRIT 340 WRIT 150 4	EMPHASIS ELECTIVE 4
ENGR 102 2	OPTIONAL ELECTIVE 2	OPTIONAL ELECTIVE 2	CHE 350 CHEM 105bL or 115bL and CHE 330 4	CHE 444bL CHE 330, (CHE 443) 2	CHE 447 MATH 245, CHE 443 4	ENGR ELECTIVE 4	OPTIONAL ELECTIVE 2

## MATHEMATICS (16 UNITS)

**MATH 125:** Calculus I\*  
**MATH 126 or 129:** Calculus II\*  
**MATH 226 or 229:** Calculus III  
**MATH 245:** Mathematics of Phys. and Engr.

## PHYSICS (8 UNITS)

**PHYS 151L:** Mechanics and Thermodynamics  
**PHYS 152L:** Electricity and Magnetism

## CHEMISTRY (20 UNITS)

**CHEM 105aL:** General Chemistry\*  
**CHEM 105bL:** General Chemistry  
**CHEM 322aL:** Organic Chemistry  
**CHEM 430:** Physical Chemistry: Thermodynamics & Kinetics  
 CHEMISTRY ELECTIVE:  
**CHEM 300L:** Analytical Chemistry  
**or CHEM 322bL:** Organic Chemistry  
**or CHEM 431:** Physical Chemistry: Quantum Mechanics

## GENERAL EDUCATION (32 UNITS)

**GE A** The Arts (1 Course)\*  
**GE B** Humanistic Inquiry (2 Courses)  
**GE C** Social Analysis (2 Courses)  
**GE D** Life Sciences (1 Course)\*  
**GE E** Physical Sciences (1 Course)\*  
**GE F** Quantitative Reasoning (1 Course)\*  
**GE G,H** Global Perspectives (2 Courses)\*  
**GESM** General Education Seminar (1 Course)

## WRITING (8 UNITS)

**WRIT 150:** Writing and Critical Reasoning  
**WRIT 340:** Advanced Writing

## ENGINEERING (58 UNITS)

**CHE 120:** Intro. to Chemical Engineering  
**CHE 305:** Numerical & Statistical Analysis for Chemical Engineers  
**CHE 330:** Chemical Engr. Thermodynamics  
**CHE 350:** Intro. to Separation Processes  
**CHE 430:** Principles & Applications of Systems Biology  
**CHE 442:** Chemical Reactor Design  
**CHE 443:** Viscous Flow  
**CHE 444aL:** Chemical Engineering Lab  
**CHE 444bL:** Chemical Engineering Lab  
**CHE 444cL:** Chemical Engineering Lab  
**CHE 447:** Heat and Mass Transfer in Chemical Engineering Processes  
**CHE 460L:** Chem. Proc. Dynamics & Control  
**CHE 480:** Chem. Process and Plant Design  
**CHE 485:** Computer Aided Chemical Process Design  
**ENGR 102:** Engineering Freshman Academy  
**CHE ELECTIVE**  
**ENGR ELECTIVE**  
**EMPHASIS ELECTIVE**  
**BIOLOGY (4 UNITS)**  
**BISC 320:** Molecular Biology  
**or BISC 330:** Biochemistry

## PETROLEUM (15 UNITS)

**PTE 461:** Formation Data Sensing - Well Logs  
**PTE 463L:** Intro Transport Processes  
**PTE 464L:** Modeling and Simulation of Subsurface Flow Systems  
**PTE 465L:** Drilling Technology and Subsurface Methods

## SPECIAL NOTES

*Courses with the \* symbol may be satisfied with AP, IB or A-Level exams. See page 18 for more information.*

**GESM#:** GESM can be taken from GE categories: A, B, C, or D. Courses listed in the guide are options for a four-year course plan.

**GE:** Engineering students are encouraged to satisfy GE G and GE H with a course that also satisfies a Core Literacy. GE H may be satisfied by AP/IB. Additionally, your GESM course should be taken in categories A, B, or C only. See page 17 for more information and consult your advisor for detailed assistance.

**CHE ELECTIVE:** An upper-division chemical engineering course.

**ENGR ELECTIVE:** An upper-division engineering course (subject to advisor approval).

**EMPHASIS ELECTIVE:** An upper-division elective course in math, science, or engineering (subject to advisor approval).