## 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
  - **CHEM 322bL**: Organic Chemistry
  - **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
- **ENGR ELECTIVE**
- **EMPHASIS ELECTIVE**

## BIOLOGY (4 UNITS)
- **BISC 320**: Molecular Biology
- **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).