### CHEMICAL (NANOTECHNOLOGY)

**MATHEMATICS (16 UNITS)**
- MATH 125: Calculus I
- MATH 126 OR MATH 129: Calculus II
- MATH 226 OR MATH 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
- CHEM 453: Advanced Inorganic Chemistry

**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)

**WRITING (7 UNITS)**
- WRIT 150: Writing and Critical Reasoning
- WRIT 340: Advanced Writing

**ENGINEERING (60 UNITS)**
- CHE 120: Intro. to Chemical Engineering
- CHE 305: Numerical & Statistical Analysis for Chemical Engineering
- CHE 330: Chemical Engr. Thermodynamics
- CHE 350: Intro. to Separation Processes
- CHE 391: Intro. to Nanotechnology Research
- CHE 442: Chemical Reactor Design
- CHE 443: Viscous Flows
- CHE 444AL: Chem. Engineering Laboratory
- CHE 444BL: Chem. Engineering Laboratory
- CHE 444cL: Chem. Engineering Laboratory
- CHE 447: Heat and Mass Transfer in Chemical Engineering Processes
- CHE 460L: Chemical Process Dynamics & Control
- CHE 480: Chem. Process and Plant Design
- CHE 485: Comp. Aided Chemical Process Design
- CHE 487: Nanotech & Nanoscale Engineering through Chemical Processes
- CHE 491: Nanotech Research for Undergrads

**GE F:** General Education Seminar (1 Course)

**SPECIAL NOTES**
- Courses with the AP/IB symbol may be satisfied with AP, IB or A-Level exams. See page 17 for more information.
- 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 exam. Additionally, your GESM course should be taken in categories A, B, C, or D only. See page 21 for more information and consult your advisor for detailed assistance.
- CHE 391, 491: Technical electives may be taken in place of these courses. Contact the department for approved courses.