

Chemical Engineering Curriculum

Name _____

Class _____

Semester Grade

Chem 121 -- General Chemistry
Math 161 -- Calculus I
ES 101 -- Introduction to Engineering
FYS -- First Year Seminar

Chem 122 -- General Chemistry
Math 162 -- Calculus II
Phys 131 -- Newtonian Dynamics
Engl 110 -- English Composition

Chem 221-- Organic Chemistry I
Math 263 -- Calculus III
SS/Hum Elective¹
ES Elective²
ChE 211 -- Material and Energy Balances

Chemistry Elective³
Math 264 -- Differential Equations
SS/Hum Elective¹
ES 225 -- Professionalism and Ethics
ChE 222 -- Thermodynamics

ChE 311-- Transport Phenomena
ChE 312 -- Experimental Design I
ChE 314 -- Chemical Engineering Computing
Chemistry Elective³
SS/Hum Elective¹

ChE 321-- Applied Fluid Mechanics & Heat Transfer
ChE 322 -- Experimental Design II
ChE 323 --Fluid Phase and Reaction Equilibria
ChE 324 -- Process Control
Free Elective

ChE 411 -- Mass Transfer, Separations & Bioseparations
ChE 413 --Reaction Kinetics and Reactor Design
ChE 412 -- Integrated Chemical Engineering
ChE 415 -- Design Analysis
Technical Elective⁴

ChE 422 -- Design Synthesis
Chem 324 -- Physical Chemistry II
Free Elective
Technical Elective⁴
SS/Hum Elective¹

¹Social Science Humanities Electives

Courses selected from an approved posted list

At least one course in the social sciences and one course in the humanities; at least two courses in the same department with one at the upper level.

Humanities Departments:

Art History
English
Foreign Languages
Music
Philosophy
Religion
Comparative Literature

Social Science Departments:

African Studies
American Studies
Anthropology and Sociology
Economics and Business
Government and Law
History
International Affairs
Psychology
Women's Study

²Engineering Science Electives

Basic Electric Circuit Analysis -- ES 241

Engineering Science 226 -- Statics

³Chemistry Electives

Course:

Chemistry 212 --Inorganic Chemistry I: Structure and Bonding

Chemistry 213 -- Inorganic Chemistry I: Structure and Bonding (with laboratory)

Chemistry 222 -- Organic Chemistry II

Chemistry 231 -- Analytical Chemistry I

Chemistry 252 -- Environmental Chemistry

Chemistry 342 -- Advanced Organic Chemistry

Chemistry 351 -- Biochemistry Survey

Chemistry 352 -- Experimental Biochemistry

Chemistry 462 -- Advanced Physical Chemistry

*ES 231 -- Nature of Engineering Materials

*ChE 331 -- Polymers

*ChE 344 -- Intro to Colloid and Surface Science

*Biol 101 -- General Biology

Prerequisites:

Chemistry 122

Chemistry 122

Chemistry 221

Chemistry 122

Chemistry 121

Chemistry 222

Chemistry 222

Chemistry 351

Chemistry 323

*Only one Chemistry Elective may be chosen outside of the Chemistry Department

⁴Technical Electives

Any upper level Engineering, 3xx Science, or 3xx Mathematics courses. At least one must be taken within the Chemical Engineering Department.