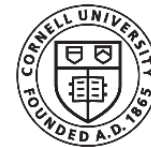


The Department of
Chemistry & Chemical Biology
Elective List for Chemistry Major



Chemistry Electives:

Laboratory courses

CHEM 3010 (synthetic chemistry lab) **4 cr/ 4 lab cr**
CHEM 3020 (instrumental analysis) **4 cr/ 4 lab cr**

Analytical chemistry

CHEM 6250 (advanced analytical chemistry)
CHEM 6280 (trace element and isotopic analysis)
CHEM 6290 (electrochemistry)

Chemical biology

CHEM 4500 (principles of chemical biology)
CHEM 4510 (structural chemical biology)
CHEM 6860 (physical chemistry of proteins)
CHEM 7880 (macromolecular crystallography)

Organic & polymer chemistry

CHEM 6650 (advanced organic chemistry)
CHEM 6660 (synthetic organic chemistry)
CHEM 6690 (transition metal catalysts in organic & polymer synthesis)
CHEM 6700 (fundamental principles of polymer chemistry)
CHEM 6710 (synthetic polymer chemistry)

Inorganic chemistry

CHEM 4300 (structure and bonding)
CHEM 6050 (advanced inorganic chemistry)
CHEM 6060 (advanced inorganic chemistry)
CHEM 6080 (organometallic chemistry)

Physical chemistry

CHEM 2880 (introductory to physical chemistry)
CHEM 5810 (computational methods in chemistry)
CHEM 6070 (nanomaterials: chemistry and physics)
CHEM 7870 (mathematical methods of physical chemistry)
CHEM 7910 (spectroscopy)
CHEM 7930 (quantum mechanics I)
CHEM 7940 (quantum mechanics II)
CHEM 7960 (statistical mechanics)

Electives from Other Departments:

Biology and Biochemistry

BIOMG 3310-3320 or BIOMG 3300 or BIOMG 3350 or NS 3200 (introductory biochemistry)
BIOMG 4380 (ribonucleic acids)
BIOMG 4400 (biochemistry laboratory) **4 cr/ 4 lab cr**
BIOMG 6310 (protein structure and function)
BIOMG 7300 (protein NMR spectroscopy)
BIONB 3920 (drugs and the brain)
BIOPL 4620 (plant biochemistry)
BIOPL 4832 (proteomics)
CHEME 4010 (BME 3010) (molecular biomedical eng) **4 cr/ 4 lab cr**
EAS 3030 (biogeochemistry) **4 cr/ 1 lab cr**
NS 3310 (biochemistry and nutrition)
NS 3320 (metabolism laboratory) **3 cr/ 3 lab cr**
VETMM 7050 (chemistry of signal transduction)

Mathematics

MATH 1920 or 2130 or 2220 (multivariable calculus)
MATH 2210 or 2230 or 2310 or 2940 (linear algebra)
MATH 2930 or 3230 (differential equations)

Statistics

MATH 1710 or PSYCH 3500 or SOC 3010 (introductory statistics)
STSCI 2100 (introductory statistics)
AEM 2100 (introductory statistics)
BTRY 3010 (biological statistics I)
BTRY 6010 (statistical methods I)
ENGRD 2700 (basic engineering probability and statistics)
ILRST 2100 (introductory statistics)
ILRST 6100 (statistical methods I)
STSCI 2100 (introductory statistics)
STSCI 2150 (introductory statistics for biology)
STSCI 2200 (biological statistics I)
MATH 4710 or ECON 3130 (intermediate probability and statistics)
ECON 3140 or ECON 3125 (applied statistics)

Physics

PHYS 2214 or 2218 (waves and optics) **4 cr/ 1 lab cr**
PHYS 3314 or AEP 3330 (mechanics)
PHYS 3323 or AEP 3550 (electricity and magnetism)
PHYS 3360 or AEP 3630 (circuits) **4 cr/ 2 lab cr**

Computer Science

CS 1110 or 1112 or 1114 or 1115 (introductory programming)
CS 2110 or 2112 (intermediate programming)

Materials Science and Engineering

MSE 2610 (mechanical properties of materials)
MSE 2620 (electronic materials)
MSE 3010 (materials chemistry)

Environmental Science

ENTOM 3070 or 4900 (pesticides, insecticides, and the environment)
BEE 2220 or BEE 4800 or BIOEE 6680 (bioengineering, atmospheric sciences, biogeochemistry)
CEE 6530 – (water chemistry, environmental engineering)

Education

EDUC 2410 (the art of teaching)
EDUC 2710 (America's promise: social and political context of American education)
EDUC 3110 (educational psychology)
EDUC 3405 (multicultural issues in education)
EDUC 4040 (engaging youth in learning)

Science and Society

HIST 1941 or 1942 (history of science)
PHIL 3810 or STS 3811 or STS 4811 or STS 6311 (philosophy of science; scientific methods)
STS 3020 or STS 4661 or STS 6661 (science communication)
STS 3911 or STS 4071 or STS 4111 (science and the law; public policy)