

FACULTY ADVISOR PROGRAM GUIDE
CHEMISTRY - B.S. with Materials Science and Engineering MINOR

First Year	Sophomore	Junior	Senior
<u>Semester 1</u> MATH 113	<u>Semester 1</u> CHEM 201	<u>Semester 1</u> CHEM 300 (if not already complete)	<u>Semester 1</u> CHEM 483
CHEM 111 or 115	PHYS 111 ENGR 361	CHEM 331 (Fall only) CHEM 481 ENGR 361 (if not already complete)	CHEM 440 CHEM elective (if not complete)
<u>Semester 2</u> MATH 114 CHEM 112 (if CHEM 115 was taken in fall, take CHEM 300)	<u>Semester 2</u> CHEM 202 (Spring only) PHYS 112 CHEM 220	<u>Semester 2</u> CHEM 320 (Spring only) CHEM 332 (Spring only) CHEM 482 CHEM elective (if not already complete)	<u>Semester 2</u> CHEM 484 CHEM 491 CHEM Elective (If not complete) MSE elective (if not complete)

Please direct questions about Chemistry to Dr. Eric Fort at (651) 962-5588 and MSE to Dr. Brittany Nelson-Cheeseman at (651) 962-5773.

REQUIREMENTS FOR DEGREE

CHEM 111 General Chemistry I } or CHEM 115
CHEM 112 General Chemistry II }
CHEM 201 Organic Chemistry I
CHEM 202 Organic Chemistry II
CHEM 220 Foundations in Inorganic Chemistry
CHEM 300 Quantitative Analysis
CHEM 320 Instrumental Analysis
CHEM 331 Chemical Thermodynamics and Reaction Dynamics
CHEM 332 Quantum Chemistry and Molecular Spectroscopy
CHEM 440 Biochemistry I
CHEM 481-484 Seminar (2 credits total)
CHEM 491 Research (2 credits, or a summer chemistry research project)

Allied Requirements:

MATH 113-114 Calculus I and II*
PHYS 111-112 Introductory Physics I-II
ENGR 361 Engineering Materials

*Students not placing into MATH 113 must take MATH 108 + 109, then Math 114.
Additional Math courses (particularly MATH 200 and 240) are highly recommended.

MSE Practicum: At least 1 summer or 2 semesters of research in a materials field.

Plus 6 credits from:

CHEM 250 Organometallic Chemistry (2 credits)
CHEM 295, 296 Topics (2 credits)
CHEM 298 Topics (4 credits)
CHEM 340 Organic Spectroscopy (2 credits)
CHEM 400 Advanced Inorganic Chemistry (2 credits)
CHEM 404 Advanced Organic Chemistry (2 credits)
CHEM 420 Bioanalytical and Forensic Chemistry (2 credits)
CHEM 430 Polymer Chemistry (2 credits)
CHEM 442 Biochemistry II
CHEM 444 Advanced Metabolism (2 credits)
CHEM 450 Metals in Biology (2 credits)
CHEM 487, 488 Topics (2 credits)
CHEM 491 Research (2 or 4 credits)

Plus 4 credits from:

CHEM 250 Organometallic Chemistry (2 credits)**
CHEM 340 Organic Spectroscopy (2 credits)**
CHEM 400 Advanced Inorganic Chemistry (2 credits)**
CHEM 430 Polymer Chemistry (2 credits)**
CHEM 487 Biomaterials (2 credits)**
BIOL 328 Environmental Toxicology (4 credits)
BIOL 361 Medical Geology (4 credits)
ETLS 775 Polymers in Design (3 credits)
PHYS 225 Applications of Modern Physics (4 credits)
PHYS 347 Optics (4 credits)
PHYS 410 Statistical Mechanics and Thermodynamics (4 credits)
GEOL 211 Earth Materials (4 credits)

**These courses only if not already included in 6 Chemistry elective credits