

UNIVERSITY OF ST. THOMAS  
 FACULTY ADVISOR PROGRAM GUIDE  
**CHEMISTRY - B.S. with Materials Science and Engineering MINOR**

2014-2016 Catalog

First Year	Sophomore	Junior	Senior
<u>Semester 1</u>	<u>Semester 1</u>	<u>Semester 1</u>	<u>Semester 1</u>
MATH 113 CHEM 111 or 115	CHEM 201 PHYS 111 ENGR 361	CHEM 300 (if not already complete) CHEM 331 (Fall only) CHEM 481 (481-484 seminar sequence must be taken for 4 semesters)	CHEM 483 CHEM 400 (Fall only) CHEM 440 MSE elective
<u>Semester 2</u>	<u>Semester 2</u>	<u>Semester 2</u>	<u>Semester 2</u>
MATH 114 CHEM 112 (if CHEM 115 was taken in fall, take CHEM 300)	CHEM 202 (Spring only) PHYS 112 ENGR 361 (if not already complete)	CHEM 320 (Spring only) CHEM 332 (Spring only) CHEM 482 CHEM elective (if not already complete)	CHEM 484 CHEM 491 CHEM 340 (Spring only) MSE elective (if not already complete)

Please direct questions about Chemistry to Dr. Gary Mabbott at (651)962-5583 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 300 Quantitative Analysis
- CHEM 320 Instrumental Analysis
- CHEM 331 Chemical Thermodynamics and Reaction Dynamics
- CHEM 332 Quantum Chemistry and Molecular Spectroscopy
- CHEM 340 Organic Spectroscopy (2 credits)
- CHEM 400 Advanced Inorganic Chemistry (332 is prerequisite)
- CHEM 440 Biochemistry I
- CHEM 481-484 Seminar (2 credits total)
- CHEM 491 Research (2 credits)(or a summer research project sponsored by the department)

**Allied Requirements:**

- MATH 113-114 Calculus I and II\*
- PHYS 111-112 Introductory Physics I-II
- \*Students not placing into MATH 113 must take MATH 108 and 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 4 credits from:*

- CHEM 250 Organometallic Chemistry (2 credits)
- CHEM 295, 296 Topics (2 credits)
- CHEM 298 Topics (4 credits)
- CHEM 391, 392 Research (1 credit)
- CHEM 420 Bioanalytical and Forensic Chemistry (2 credits)
- CHEM 442 Biochemistry II
- CHEM 487, 488 Topics, not Biomaterials (2 credits)
- CHEM 491 Research (2 or 4 credits)

*Plus 4 credits from:*

- CHEM 430 Polymer Chemistry (2 credits)
- CHEM 487 Biomaterials (2 credits)
- BIOL 328 Environmental Toxicology (4 credits)
- BIOL 353 Microscopic Anatomy (4 credits)
- BIOL 361 Medical Geology (4 credits)
- BIOL 371 Cell Biology (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)

