## UNIVERSITY OF ST. THOMAS
### FACULTY ADVISOR PROGRAM GUIDE

**CHEMISTRY - B.S. with Materials Science and Engineering MINOR**

### REQUIREMENTS FOR DEGREE

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

**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.

Please direct questions about Chemistry to Dr. Gary Mabbott at (651)962-5583 and MSE to Dr. Brittany Nelson-Cheeseman at (651)962-5773.