Science and Engineering Technology AS DEGREE

Program Overview
The Science and Engineering Technology degree is designed for students who are seeking employment in a science laboratory and/or who are seeking to transfer to a four-year program.

Career Opportunities
Science technicians can work in many aspects of the laboratory process industry from basic research to clean room facility skills. Technicians operate many kinds of equipment and instrumentation, prepare samples for processing, monitor commercial production, test for product quality and collect and analyze samples. Technicians will conduct a variety of laboratory procedures, from routine process of laboratory procedures to complex research projects. A solid background in science and math along with the skills in using advanced equipment is vital for success.

Program Outcomes
1. Design and conduct experiments as well as analyze and interpret the results.
2. Identify, formulate, and solve science technology problems.
3. Understand professional and ethical responsibility.
4. Apply knowledge of mathematics, science, and technology in the solution of chemical technology problems.
5. Solve science technology problems within realistic constraints such as economic, environmental, social, political, ethical, and health and safety, manufacturability, and sustainability.

Transfer Opportunities
Saint Paul College has a transfer articulation agreement between the following program and post-secondary institution for the baccalaureate degree program listed below.

For more information please go to saintpaul.edu/Transfer.

Science and Engineering Technology AS
BA Individualized Studies
Metropolitan State University

Program Faculty
Travis Mills
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Penny Starkey
penny.starkey@saintpaul.edu

Program Requirements
☐ Check off when completed
Science and Engineering Core: Required

<table>
<thead>
<tr>
<th>Course</th>
<th>Cr</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ CHEM 1712 Principles of Chemistry 2</td>
<td>4</td>
</tr>
<tr>
<td>□ CHEM 2730 Instrumental Analysis</td>
<td>4</td>
</tr>
<tr>
<td>□ CHEM 2790 Research Project for Science and Engineering Technology</td>
<td>1-4</td>
</tr>
<tr>
<td>□ ENGR 1706 Principles of Engineering</td>
<td>2</td>
</tr>
</tbody>
</table>

Subtotal: 17

Science and Engineering Focus (Select one focus area)

Chemistry
☐ CHEM 2721 Organic Chemistry 2 5
☐ Science or Engineering Electives 8

Biochemistry
☐ BIOC 2700 Biochemistry 4
☐ Science or Engineering Electives 9

Physics
☐ PHYS 2710 General Physics 2 5
☐ Science or Engineering Electives 8

Engineering
☐ ENGR 2700 Intro to Problem Solving and Engineering Design 2
☐ Science or Engineering Electives 11

Focus Subtotal: 13

Note: Science/engineering electives must be taken from: BIOC, BIOL, CHEM, CSCI, ENGR, NSCI, PHYS. Consult with your advisor for information about 2, 3, and 4 credit course options.

General Education/MnTC Requirements

<table>
<thead>
<tr>
<th>Cr</th>
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<tbody>
<tr>
<td>Refer to the Minnesota Transfer Curriculum Course List for each Goal Area</td>
</tr>
<tr>
<td>□ Goal 1: Communication 7</td>
</tr>
<tr>
<td>ENGL 1711 Composition 1 – 4 cr</td>
</tr>
<tr>
<td>COMM 17XX – 3 cr</td>
</tr>
<tr>
<td>□ Goal 3: Natural Science 4</td>
</tr>
<tr>
<td>CHEM 1711 Principles of Chemistry 1 – 4 cr</td>
</tr>
<tr>
<td>□ Goal 4: Mathematical/Logical Reasoning 8</td>
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<tr>
<td>MATH 2749 Calculus 1 – 4 cr</td>
</tr>
<tr>
<td>MATH 2750 Calculus 2 – 4 cr</td>
</tr>
<tr>
<td>□ Goal 5: History, Social Science and Behavioral Sciences 3</td>
</tr>
<tr>
<td>□ Goal 6: Humanities and Fine Arts. 3</td>
</tr>
<tr>
<td>□ Goals 1-10 of the Minnesota Transfer Curriculum 5</td>
</tr>
<tr>
<td>Students must select a minimum of 5 additional credits such that courses from at least six (6) goal areas of the Minnesota Transfer Curriculum are met.</td>
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<tr>
<td>General Education Requirements 30</td>
</tr>
</tbody>
</table>

Total Program Credits 60

Program Start Dates
Fall, Spring, Summer

Course Sequence
This course sequence is recommended for a full-time student; however, this sequence is not required. Not all courses are offered each semester; a selection of courses is offered summer term. Students should consult with the Program Faculty each semester.

First Semester
ENGR 1706 Principles of Engineering 2
Goal 1: ENGL 1711 Composition 1 4
Goal 3: CHEM 1711 Principles of Chemistry 1 4
Goal 5: History, Social Science and Behavioral Sciences 3
Goal 6: Humanities and Fine Arts 3
Total Semester Credits 16

Second Semester
Goal 1: COMM 17XX 3
Goal 3: CHEM 1712 Principles of Chemistry 2 4
Goal 4: MATH 2749 Calculus 1 4
Total Semester Credits 15

Third Semester
Goal 3: CHEM 2730 Instrumental Analysis 4
Goal 4: MATH 2750 Calculus 2 4
MnTC Elective 3
Focus Area Course(s) 5
Total Semester Credits 16

Fourth Semester
Goal 3: CHEM 2790 Research Project for Science and Engineering Technology 1-4
MnTC Elective: ENGL 1712 Composition 2 4
Recommended 2
Focus Area Course(s) 8
Total Semester Credits 13
Total Program Credits 60

Minimum Program Entry Requirements
Students entering this program must meet the following minimum program entry requirements:

Reading: Score of 250+ or grade of “C” or better in READ 0722
Writing: Score of 250+ on Reading Comprehension or grade of “C” or better in ENGL 0922
Adv. Algebra & Functions: Score of 250+ or grade of “C” or better in MATH 0920

Assessment Results and Prerequisites:
Students admitted into Saint Paul College programs may need to complete additional courses based on assessment results and course prerequisite requirements. Certain MATH, READ, and ENGL courses have additional prerequisites.

Information is subject to change.
This Program Requirements Guide is not a contract.