

# Chemistry Transfer Pathway AS DEGREE

## Program Overview

The Chemistry Transfer Pathway AS degree is awarded for successful completion of 60 credits in science and liberal arts. It is designed to constitute the first two years of a bachelor's degree in Chemistry.

## Career Opportunities

Chemistry majors are curious, analytical and self-starting leaders. Upon completion of the Chemistry AS degree, students will have developed strong communication skills and grown in their scientific and mathematical reasoning skills as well as developed their ability to perform experiments in a hands-on environment. As graduates in Chemistry, students can choose a number of career options from technical scientific laboratory careers to education. Salaries will vary based on the chosen career path.

## Transfer Opportunities

### Chemistry Transfer Pathway AS

BS	Chemistry
BA	Individualized Studies
	Metropolitan State University
BS	Chemistry
	Minnesota State University, Mankato (ACS Approved)
BA	Chemistry
	Southwest Minnesota State University
BS	Chemistry
	St. Cloud State University (ACS Approved)
BS	Chemistry
	Minnesota State University, Moorhead
BS	Chemistry
	Winona State University

## Program Faculty

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## Program Outcomes

### 1. Apply fundamentals of experimental chemistry in the laboratory environment

#### CRITERIA

- Carefully follow written procedures
- Make accurate and precise measurements, perform calculations
- Operate instrumentation safely and properly
- Keep scientific records
- Design and execute experiments using scientific method
- Follow safety protocols and waste management procedures

#### ASSESSMENTS

- Formal lab project rubric

### 2. Apply fundamentals of theoretical chemistry in the classroom and laboratory environment

#### CRITERIA

- Build portfolio through projects
- Analyze data and derive a conclusion from collected data
- Present results of lab projects

#### ASSESSMENTS

- Portfolio rubric

### 3. Solve chemistry related problems.

#### CRITERIA

- Identify and analyze a chemistry problem using critical thinking
- Propose a problem-solving strategy and utilize it

#### ASSESSMENTS

- Portfolio rubric

### 4. Communicate scientific results effectively in oral and written formats.

#### CRITERIA

- Write clearly and concisely
- Speak clearly, loudly, and to the appropriate level of the audience
- Address or answer audience questions

#### ASSESSMENT TOOLS

- Formal lab project rubric

### 5. Evaluate chemistry related issues in society using scientific literature.

#### CRITERIA

- Perform literature search relevant to issue(s)
- Write a review of the issue(s)
- Follow lab safety and waste management protocols

#### ASSESSMENT TOOLS

- Project in CHEM 1711 rubric

## Program Requirements

Check off when completed

Course	Cr
<input type="checkbox"/> CHEM 1711 Principles of Chemistry 1 . . . . .	4
<input type="checkbox"/> CHEM 1712 Principles of Chemistry 2 . . . . .	4
<input type="checkbox"/> CHEM 2720 Organic Chemistry 1. . . . .	5
<input type="checkbox"/> CHEM 2721 Organic Chemistry 2. . . . .	5
<input type="checkbox"/> PHYS 2700 General Physics 1 (w/Calc) . . . . .	5
<input type="checkbox"/> PHYS 2710 General Physics 2 (w/Calc) . . . . .	5
<b>Subtotal. . . . .</b>	<b>28</b>

### General Education/MnTC Requirements Cr

Refer to the Minnesota Transfer Curriculum Course List for each Goal Area

<input type="checkbox"/> Goal 1: Communication . . . . .	9
ENGL 1711 Composition 1 – 4 cr	
ENGL 1712 Composition 2 – 2 cr	
COMM 17XX – 3 cr	
<input type="checkbox"/> Goal 3: Natural Science . . . . .	0
Met with courses from above.	
<input type="checkbox"/> Goal 4: Mathematical/Logical Reasoning . . . . .	8
MATH 2749 Calculus 1 – 4 cr	
MATH 2750 Calculus 2 – 4 cr	
<input type="checkbox"/> Goal 5: History, Social Science, and Behavioral Sciences . . . . .	3
<input type="checkbox"/> Goal 6: Humanities & Fine Arts. . . . .	3
<input type="checkbox"/> Goals 1-10 of the MnTC . . . . .	9

Students must select a minimum of 9 additional credits such that courses from at least six (6) goal areas of the Minnesota Transfer Curriculum are met.

<b>General Education Requirements . . . . .</b>	<b>32</b>
<b>Total Program Credits . . . . .</b>	<b>.60</b>

See back of this guide for Program Start Dates & Course Sequence

### 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 or READ 0724 or EAPP 0900

**Writing:** Score of 250+ on Reading Comprehension or grade of "C" or better in ENGL 0922 or EAPP 0900

**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.

TPCH

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

## Chemistry Transfer Pathway AS DEGREE *(continued)*

### 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

Goal 1: ENGL 1711 Composition . . . . .	4
Goal 1: COMM 17XX . . . . .	3
Goal 3: CHEM 1711 Principles of Chemistry 1 . . . . .	4
Goal 4: MATH 2749 Calculus 1 . . . . .	4
<b>Total Semester Credits . . . . .</b>	<b>15</b>

#### Second Semester

Goal 3: CHEM 1712 Principles of Chemistry 2 . . . . .	4
Goal 3: PHYS 2700 General Physics 1 . . . . .	5
Goal 5: History, Social Science, and Behavioral Sciences . . . . .	3
MnTC elective . . . . .	3
<b>Total Semester Credits . . . . .</b>	<b>15</b>

#### Third Semester

Goal 1: ENGL 1712 Composition 2 . . . . .	2
Goal 3: PHYS 2710 General Physics 2 . . . . .	5
Goal 3: CHEM 2720 Organic Chemistry 1 . . . . .	5
Goal 6: Humanities & Fine Arts . . . . .	3
<b>Total Semester Credits . . . . .</b>	<b>15</b>

#### Fourth Semester

Goal 3: CHEM 2721 Organic Chemistry 2 . . . . .	5
Goal 4: MATH 2750 Calculus 2 . . . . .	4
MnTC elective . . . . .	6
<b>Total Semester Credits . . . . .</b>	<b>15</b>

**Total Program Credits . . . . .60**