Central Lakes College, Brainerd Campus 2025-2026

Chemistry Transfer Pathway

Associate of Science Degree (TPCH)

Required Discipline 40
MnTC*** ..... as needed to complete 60
Total Credits 60

Required Courses

Required Discipline Courses (40 credits)

CHEM 1424*	Chemical Principles I (Goal 3)	5 cr
CHEM 1425*	Chemical Principles II (Goal 3)	5 cr
CHEM 2472*	Organic Chemistry I (Goal 3)	5 cr
CHEM 2473*	Organic Chemistry II (Goal 3)	5 cr
MATH 1477*	Calculus I (Goal 4) **OR**	
MATH 1480*	Honors Calculus I (Goal 4)	5 cr
MATH 1478*	Calculus II (Goal 4)	5 cr
PHYS 1411*	Classical Physics I (Goal 3)	5 cr
PHYS 1412*	Classical Physics II (Goal 3)	5 cr

Required MnTC Courses

***An A.S. degree requires a minimum of 30 credits selected from at least six of the ten goal areas of the Minnesota Transfer Curriculum (MnTC).

ENGL 1410	Composition I (Goal 1) **OR**	
ENGL 1420*	Honors Composition I (Goal 1)	4 cr
Goal 1		1 COMM course
Goal 5 course		1 course
Goal 6 course		1 course
Goal 7-10**		1 course
Additional MnTC courses	**.....** as needed to total 60 credits	

**Denotes Prerequisites*
***Many courses from Goals 1 – 6 also meet Goals 7 – 10. Credits count only once. Students are advised to select MnTC courses with multiple goal assignments whenever possible.*

GRADUATION REQUIREMENT - 60 CREDITS

Description

Chemistry is the study of matter, or the substance of physical objects, with a focus on composition, structure, properties and change. Chemists are particularly interested in the properties of chemical bonds involved in the creation of chemical compounds. Upon completion of the Chemistry Transfer Pathway A.S. Degree, students will have developed strong communication skills and grown in scientific and mathematical reasoning skills, as well as the ability to perform experiments in a hands-on environment. Chemistry majors have career opportunities in research labs, industry labs, teaching positions, environmental fields, pharmaceuticals or entrance into pharmacy or medical school.

Outcomes

By completing this program, students will achieve the following learning outcomes:

- Demonstrate basic knowledge and understanding of the fundamentals of experimental and theoretical chemistry;
- Explain and apply skills in analytical thinking and problem solving, and apply scientific methods to experimental data;
- Demonstrate skills in laboratory operations including making accurate and precise measurements, preparing solutions, operating instrumentation, experimental design, and the interpretation and reporting of quantitative and qualitative data and results;
- Communicate their own data and analysis in oral and written communications that uses tables and graphs, describes detailed experimental procedures, and clearly explains conclusions, in order to create clear and compelling papers, posters, or presentations;
- Work both independently and collaboratively in the classroom and in the laboratory; and
- Apply learned concepts to everyday situations and experiences and critically evaluate contributions to science reported in the media; identify valid approaches to scientific problem solving and reporting.

CLC CENTRAL LAKES COLLEGE

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Pre-Program Requirements

Some courses may require students to meet College Placement Levels in reading, writing, and/or math. See an advisor for more information.

Graduation Requirements

In addition to the program requirements, students must meet the following conditions in order to graduate:

- College Cumulative GPA Requirement: cumulative grade point average (GPA) of credits attempted and completed at CLC must be at least 2.0;
- Residency Requirement: students must complete 25% of their credits at Central Lakes College.

Career & Transfer

The Chemistry Transfer Pathway A.S. Degree offers students a powerful option: the opportunity to complete an Associate of Science degree with course credits that directly transfer to designated Chemistry bachelor's degree programs at Minnesota State universities. The curriculum has been specifically designed so students completing this pathway degree and transferring to a Minnesota State university may enter with junior-year status. Courses in the Chemistry Transfer Pathway associates degree will directly transfer and apply to the designated bachelor's degree programs. Students should consult with an advisor for guidance regarding how to best meet the requirements of their intended baccalaureate program. Universities within the Minnesota State system participating in the Chemistry Transfer Pathway include:

- Bemidji State University – BA, BS
- Metropolitan State University - BS
- Minnesota State University, Mankato – BS
- Minnesota State University, Moorhead – BA, BS
- Southwest Minnesota State University, BA
- St. Cloud State University - BS
- Winona State University - BS

Academic Plan

This is a sample full-time student pathway.

Semester One (14 credits)

CHEM 1424* Chemical Principles I (Goal 3) ..... 5 cr
ENGL 1410 Composition I (Goal 1) **OR**
ENGL 1420* Honors Composition I (Goal 1) ..... 4 cr
MATH 1477* Calculus I (Goal 4) **OR**
MATH 1480* Honors Calculus I (Goal 4) ..... 5 cr

Semester Two (16 credits)

CHEM 1425* Chemical Principles II (Goal 3) ..... 5 cr
MATH 1478* Calculus II (Goal 4) ..... 5 cr
Goal 1** COMM course ..... 3 cr
Goal 6** course ..... 3 cr

Semester Three (16 credits)

CHEM 2472* Organic Chemistry I (Goal 3) ..... 5 cr
PHYS 1411* Classical Physics I (Goal 3) ..... 5 cr
Goal 5** course ..... 3 cr
Goal 7-10** course ..... 3 cr

Semester Four (14 credits)

CHEM 2473* Organic Chemistry II (Goal 3) ..... 5 cr
PHYS 1412* Classical Physics II (Goal 3) ..... 5 cr
Electives ..... 4 cr

**Denotes Prerequisites*
***Many courses from Goals 1 – 6 also meet Goal 7 – 10. Credits count only once. Students are advised to select MnTC courses with multiple goal assignments whenever possible.*

GRADUATION REQUIREMENT - 60 CREDITS