



# Bridges Career Academy Applied Chemistry

*Pillager High School*

Introduction to organic and inorganic compounds and their chemical and physical makeup while explaining the production and evaluation of many kinds of chemicals for industrial or personal use. Explore the use of chemistry when evaluating crime scene evidence using applied scientific procedures such as observation, objective analysis, and scientific inquiry.

## Academic Courses

- Biotechnology
- Environmental Biology
- Chemistry
- Food Chemistry
- Forensics I

## Career Experiences

- Tour local businesses
- Listen to industry speakers
- Work with medical careers and complete a crime scene evaluation
- Attend the Bridges Career Exploration Day or other regional career fairs

## Completion Standards

### COMPLETE

- Biotechnology OR Environmental Biology**
- Chemistry OR Food Chemistry**
- Forensics I**

GRADES **B** ↑

Earn a **certificate** and **green cord** at graduation



**MINNESOTA STATE**  
CAREERwise Education

*Log in* to learn more

### Explore types of careers

[www.careerwise.minnstate.edu/careers](http://www.careerwise.minnstate.edu/careers)

### Review the local job outlook

[www.careerwise.minnstate.edu/jobs](http://www.careerwise.minnstate.edu/jobs)

### Find postsecondary programs

[www.careerwise.minnstate.edu/education](http://www.careerwise.minnstate.edu/education)

9/2019

## Job Skills

In addition to having technical skills, employers expect workers in this industry to have these skills:

- Critical thinking
- Problem solving and analytical evaluation skills
- Oral and written communications skills
- Team work in lab settings



[www.BridgesConnection.org/Pillager](http://www.BridgesConnection.org/Pillager)

# Applied Chemistry Career Academy

## Pillager High School

The Applied Chemistry Academy offers an introduction to organic and inorganic compounds and their chemical and physical makeup while explaining the production and evaluation of many kinds of chemicals for industrial or personal use. Students explore the use of chemistry when evaluating crime scene evidence using applied scientific procedures such as observation, objective analysis, and scientific inquiry. Chemical careers vary from chemical engineers in manufacturing and medical research to forensic methods used in law enforcement. If you like to use scientific processes and research methods to develop new products or improve existing ones, this academy is for you. When completing the Academy, students will have basic skills to determine what aspect of the applied chemistry industries they are interested in and will be able to continue their education.

### ACADEMY COURSES

#### **Biotechnology** —1 High School Credit

Emphasis is placed on fundamental cell biology, microbiology and genetic principles. Students will have extensive lab work that utilizes the science and application behind the biotechnology revolution such as protein isolation, DNA fingerprinting, genetic engineering and gene transfer. Topics such as stem cell research, animal cloning, cancer and aging will also be included.

#### **Environmental Biology** — 1 High School Credit and/or 3 College Credits

This course focuses on the components of our surroundings, living and nonliving, the interactions of these components and the impact of human activity on these natural resources. Students will develop skills in observation, objective analysis, scientific inquiry and written and oral communication.

#### **Chemistry** — 1 High School Credit and/or 3 College Credits

This course is the study of general laws of chemistry periodicity, atomic and molecular structures, physical and chemical changes. Students will develop an understanding of correlating chemical principles with practical applications using lab techniques.

#### **Food Chemistry** —1 High School Credit

This course is the study of food and the chemistry related to the physical and chemical elements that make up different foods. Students will gain and understand of the types of food groups and the benefits each group has related to human health and fitness. Students will use practical applications and lab techniques as it related to the chemical structures of various foods.

#### **Forensics I**— 1 High School Credit

Students will be introduced to the basics of Forensic Science and application within the legal system. Items covered will include simulated crime scenes, evidence collection, crime scene management and evaluation of evidence. Students will use a variety of science procedures within the course.

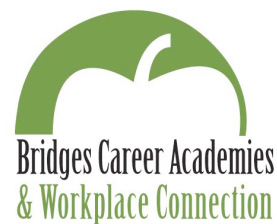
### COMPLETION STANDARD

Students wishing to receive a certification for this academy must complete either Biotechnology or Environmental Biology, Chemistry OR Food Chemistry AND Forensics I. In addition, students must earn a “B” or better average in each course.

### CAREER EXPERIENCES

Students will listen to guest speakers, tour local businesses, attend the Bridges Career Exploration Day event and other regional career fairs and listen to a variety of news related articles. Working with medical careers, completing crime scene evaluations, and a potential job shadow will be included.

- MORE-



# Applied Chemistry Career Academy

## Pillager High School

### **JOB SKILLS**

In addition to having technical skills, employers expect their workers to have other skills such as:

- Critical thinking
- Problem solving and analytical evaluation skills
- Oral and written communications skills
- Team work in lab settings

**CAREER OPTIONS:** [www.careerwise.minnstate.edu/careers](http://www.careerwise.minnstate.edu/careers)

**JOB OUTLOOK:** [www.careerwise.minnstate.edu/jobs](http://www.careerwise.minnstate.edu/jobs)

**POSTSECONDARY PROGRAMS:** [www.careerwise.minnstate.edu/education](http://www.careerwise.minnstate.edu/education)

