Minnesota
Articulated College Credit (ACC) Agreement
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Articulated College Credit Agreement

Through Articulated College Credit (ACC), specific college curriculum learning outcomes and assessments are embedded in participating high school career and technical education (CTE) programs as specified in this agreement. Relevant knowledge, skills, and standards are taught by qualified CTE high school instructor(s) in one or more course. ACC is awarded if the student meets the college equivalency standards and later enrolls in the college(s) listed below requiring the course in a specific program. In some cases, credit toward electives is also an option.

Agreement Name: Introduction to Engineering - Mechanical
Agreement Reviewed/Revised: 2022 – 2023

These credits are valid for 2 years upon high school graduation.

College(s)	College Course(s)	College Programs	Articulated College Credit
Minnesota State University, Mankato – College of Science and Engineering – Mechanical Engineering Department	ME 101 – Intro. To Engineering - Mechanical	Mechanical Engineering (B.S. – 128 cr.)	2 credits of 2 credits (48 hrs.)

Course Description

To prepare students for a career in engineering with emphasis on mechanical; introduce the engineering fundamentals and the skills necessary to have a successful learning experience; and to prepare students for engineering education and profession through interactions with upper-class engineering students and practitioners.

The goal of the course is the application of the tools to address unique problems allowing the students to rapidly create and analyze proposed solutions. Siemens curriculum and resources provide tools frequently used by industry and understanding how these tools are used in problem solving is critical.

Curriculum Learning Outcomes

100% of the curriculum learning outcomes will be covered in the high school course(s) by qualified CTE and/or relevant STEM high school instructor(s).

Outline of Major Learning Outcomes:

Upon completion of the course, the student will be able to:

- explain what engineering is and what engineers do
- use a variety of problem-solving skills and strategies
- use CAD and other engineering software
- perform engineering and engineering design activities
- present results of engineering design activities
- Develop awareness/basic knowledge of engineering ethics.

Students should work in teams to solve complex design problems through course assignments and projects. They will also understand how to work in teams and have the skills necessary to have a successful engineering learning experience.

Core College Competencies: Communication, Problem Solving, Interact

Course requires students demonstrate competency in one or more of the Core College Competencies: Communicate effectively, Problem Solve, Interact in complex, dynamic environments.

Recommended Curriculum for Course:

- **Siemen's Engineering Design – Course 1**
  Go to: http://www.siemensdesign.tomwhitestem.com/ or other engineering project based curriculum for further information.

Assessments

1. Written and performance tests with an **80% or better.**
2. Successful completion of the course with an **80% or better.**
3. Written **500-word** independent study submitted and reviewed for approval from ME faculty/advisor. This study should show a general knowledge of engineering ethics, how it is applied, and why it is important, utilizing Siemens or an engineering project/problem-based curriculum experience as the reference material.