

Minnesota Articulated College Credit (ACC) Agreement

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Agreement Name: **Introduction to CAD/CAM**

Agreement Last Reviewed: **Fall 2023**

Next Review Date: **Fall 2025**

College Courses				
Class	Title	School	Credits	
MACH 1661	Introduction to CAD/CAM	Minnesota State College Southeast	2.0	of 2.0
MACT 2826	Computer Assisted Machining I	Ridgewater College	1.0	of 3.0
MTT 2120	CNC Programming II	South Central College	2.0	of 4.0

These credits are valid for students 2 years after high school graduation from the completion of this course.

Curriculum Content Objectives

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

1. Apply all safety standards to machining applications and selections
2. Draw 2-D geometry features using a CAD drafting software
3. Create 3-D features for part design using the Extrude tools of the CAD system
4. Create 2-dimensional drawing prints on Title Block format
5. Apply current drafting principles to views and dimensions
6. Select appropriate tooling for a machining application
7. Calculate tool speeds & feeds for a specific machining application
8. Use the Windows file management system to save geometry files
9. Use the CAM software to generate tool path files
10. Use the CAM software programming system to write an NC file
11. Use the Windows file management system to save NC program files
12. Select proper cutter compensation for a machining application
13. Generate the graphic verification of tool path files in the CAM software
14. Understand "post processor" selection for machining
15. Complete all assigned drawings, tutorials, tests, and other tasks

Assessments

Students must achieve no less than 80% or B for a final grade in the high school course to receive ACC.

1. Drafting principles using a CAD system
2. File folder management in a CAD system
3. 2-D & 3-D model design
4. Application of Computer Aided Machining (CAM)
5. Communication systems between CAD/CAM and Machine Tool

ACC Concept

Through Articulated College Credit (ACC), specific college curriculum content goals 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 high school 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.