

Minnesota

Articulated College Credit (ACC) Agreement

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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: Computer Assisted Drafting - Regional
Agreement Reviewed/Revised: 2023 – 2024

These credits are valid for students in grades 10-12 for 5 years from the completion of this course.

Colleges	College Courses	College Programs	Articulated College Credit
Anoka Technical College	MECH 1200 – Mechanical CAD I	Mechanical Drafting & Design (A.A.S. – 69 cr.; Diploma – 58 cr.)	4 credits of 4 total credits (2 lecture – 32 hrs./ 4 lab – 96 hrs.)
Hennepin Technical College	ENG 1100 – AutoCAD	Engineering CAD Technology (A.A.S. – 72 cr.; Diploma – 64 cr.)	4 credits of 4 total credits (4 lecture – 64 hrs.)
St. Cloud Technical & Community College	CADD 1502 – Auto CAD Foundations	Computer-Aided Mechanical Design (A.A.S. – 68 cr; Diploma – 59 cr.); CAD Operator (Cert. -18 cr.) OR	3 credits of 3 total credits (1 lecture – 16 hrs./ 2 lab – 64 hrs.)
	TECH 1550 – Basic CADD	CNC & Advanced Manufacturing (A.A.S. – 60 cr; Diploma – 54 cr.)	2 credits of 2 total credit (1 lecture – 16 hrs./ 1 lab – 32 hrs.)

Course Description

The course is an introductory CAD course covering the current version of AutoCAD as a technical drafting tool, the workstation configuration upon which the software is used, and operational techniques related to its use. The course will concentrate on drawing set-up, fundamental construction techniques, fundamental dimensioning and plotting.

Course Learning Outcomes

To complete these requirements, students will:

1. Identify CAD workstation
2. Perform drawing startup
3. Perform drawing save functions
4. Perform CAD drawing commands
5. Perform CAD edit commands
6. Utilize CAD layering commands
7. Utilize CAD text styles
8. Utilize CAD dimensions styles
9. Construct and utilize CAD blocks
10. Plot CAD drawing

Assessments

Mastery of 80% or higher of the course learning outcomes will meet the college credit requirement.

Students will be assessed in four different ways.

- ☐ The first is through Instructor Observation.
- ☐ The second method of assessment is a drawing production test.
- ☐ The third assessment method is a written test.
- ☐ The fourth assessment requirement is that each student must submit a portfolio of work that demonstrates mastery of the following content areas:
 1. Use absolute, relative, and polar coordinates
 2. Construct basic CAD entities
 3. Apply object selection commands
 4. Apply entity modification commands
 5. Use drawing inquiry commands
 6. Examine filtered object selection command
 7. Describe AutoCAD display control commands
 8. Utilize grid, snap, and o-snap aids
 9. Describe mode settings and drawing aid features
 10. Determine plotting scale factors
 11. Evaluate layer concepts
 12. Explain CAD dimensioning techniques
 13. Create multiple dimensioning styles

Assessments (Cont.)

14. Apply text construction procedures
15. Create multiple text styles
16. Apply fundamental dimensioning techniques
17. Describe drawing merge concept
18. Use printing and plotting procedures
19. Create layer scheme
20. Use prototype drawing procedures
21. Use drawing merge commands
22. Use layering techniques
23. Evaluate named view concepts
24. Create multiple named views
25. Create prototype template(s)
26. Utilize display control commands
27. Examine 'grips' editing capabilities
28. Produce assorted CAD drawings in hard copy and electronic form
29. Create basic symbol library
30. Utilize 'grips' editing capabilities

The portfolio should also contain a CD Rom or jump drive with at least one drawing for review electronically.

Following is an Instructor Check-off Sheet to address those content goals to be assessed through observation. Drawing Production Test and Written Test are available at www.techprepmn.com. Students must receive a score of 80 percent or higher on all four assessments (observation, production, written, and portfolio) in order to receive articulated college credit.

Text for reference:

Check with college bookstore for current textbook

Recommended Industry-Recognized Certifications or Comprehensive Assessments – High School & College

Certifications/ Assessments	Vendors	Other Information
CAD Mechanical Design II (662)	Precision Exams	www.precisionexams.com
Introduction to Engineering	Project Lead the Way (PLTW)	www.pltw.org
AutoCAD Certified User	AutoDesk	www.autodesk.com
AutoCAD Certified Professional	AutoDesk	