Minnesota
Articulated College Credit (ACC) Agreement
www.CTEcreditMn.com

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: MN Basic 2D Drafting (CAD)
Agreement Reviewed/Revised: Fall 2024

These credits are valid for students in grades 9-12 for 5 years from the completion of this course.

College	College Course	College Programs	Articulated College Credit
Hennepin Technical College	ENGC 1100 – AutoCAD	Engineering CAD Technology (A.A.S. – 72 cr.; Diploma – 64 cr.)	2 credits (2 lecture – 32 hrs.) of 4 total credits (4 lecture)
South Central College	CTLS 1110 Basic AutoCAD Or BDET 1150 Basic AutoCAD	*Civil Engineering Technology (A.A.S. – 60 cr.) Or *Architectural Drafting & Design (Diploma – 32 cr.)	2 credits of 3 total credits Or 1 credit of 2 total credits
Rochester Community & Technical College	CAD 2500 CAD Software & Standards		1 credit of 2 total credits

Course Description:

This course consists of setting up a drawing environment, creating geometric shapes, creating text, dimensioning drawings, manipulating and editing displays, plotting drawings, and retrieving entity data. Aspects of file management are also covered. The student will get 'hands-on' instruction using the latest release of AutoCAD.

Course Learning Outcomes

To complete these requirements, students will:

1. Identify the components of a CAD system
2. Draw basic shapes
3. Set up a drawing environment
4. Organize drawings with layers
5. Manipulate the display of drawings
6. Use plotting options to obtain a scaled print
7. Apply object snaps to drawing elements
8. Create geometric constructions
9. Contrast text creation methods
10. Prepare drawing tables
11. Modify existing drawing geometry
12. Obtain drawing information
13. Compare polylines, multi-lines and splines
14. Create dimensions on a drawing
15. Modify dimension styles
16. Apply cross-hatching to drawings
17. Create drawing symbols (blocks)

Curriculum Content Objectives

To receive credit, students will meet 80% of the following content objectives:

1. Describe graphic screen components
2. Make geometrical objects
3. Make POLYLINES
4. Change system variables *
5. Format/Use/Save text styles **
6. Format drawing setup
7. Make layer settings
8. Use key command shortcuts ***
9. Use all selection sets
10. Create Dimension Styles
11. Use coordinates: absolute, relative, polar
12. Use direct distance entry
13. Use OBJECT SNAP commands
14. Use GRID
15. Use SNAP
16. Use GRIPS
17. Use ZOOM/PAN commands
18. Use DESIGN CENTER
19. Use POLAR TRACK
20. Use OTRACK
21. Use HELP command
22. Use INQUIRY commands
23. Use ARRAY command
24. Use BREAK command
25. Use OFFSET command
26. Use TRIM/EXTEND commands
27. Use STRETCH command
28. Use SCALE command
29. Use MOVE command
30. Use MTEXT and DTEXT commands
31. Use MIRROR command
32. Use COPY command
33. Use INSERT command
34. Use layers
35. Use paper space/model tabs
36. Use Windows Management files
37. Use Options Dialogue Box
38. Use Spell Check
39. Create ATTRIBUTES
40. Create BLOCKS, WBLOCKS
41. Create and Edit VIEWPORTS
42. Creating and Editing Layout Spaces
43. Modify object properties
44. Modify Dimensions styles
45. Place and edit dimensions
46. Edit ATTRIBUTES
47. Edit POLYLINES
48. Edit CAD objects
49. Draft multi-view drawing(s)
50. PLOT/print to scale

Version of Software Used:

Software Package that meets these learning outcomes.

Please complete/fill in the blank as to which software package is utilized in your classroom:

_____

Definitions *(For Instructor Use):*

***Change System Variables:** Control the operation of AutoCAD by changing system variables such as UCSICON, LTSCALE, MIRRTEXT, etc.

****Create/Use/Save text styles:** Use the STYLE command to create text style settings and use them in making drawing text.

*****Use Key command shortcuts:** Use the two and three-letter command aliases (at least the commonly used commands) in preference to using toolbar icons, typing whole command names, or using pull-down menus. Use = Demonstrating ability

Assessments

Mastery of **80% or higher of at least 50% of the course learning outcomes listed above** will meet the college credit requirement.

Text for Reference:
Check with the college bookstore for current textbooks.

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	www.autodesk.com