

Minnesota Articulated College Credit (ACC) Agreement

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Agreement Name: **Basic Milling**

Agreement Last Reviewed: **Fall 2023**

Next Review Date: **Fall 2025**

College Courses				
Class	Title	School	Credits	
MACH 1440	Vertical Milling I	Minnesota West Community & Technical College	1.0	of 2.0
MACT 1840	Manual Mill Operations	Ridgewater College	1.0	of 3.0
MTT 1110	CNC Milling Level I	South Central College	2.0	of 5.0

Curriculum Content Objectives

To receive credit, 100% of the following content objectives will be covered:

1. Demonstrate milling safety
2. Identify milling nomenclature
3. Demonstrate cleaning and lubrication of a milling machine
4. Identify different types of mills
5. Calculate milling speeds
6. Calculate milling feeds
7. Identify milling cutting tools
8. Use milling spindle tooling
9. Indicate a milling vise
10. Indicate a head square
11. Identify edge finding techniques
12. Use edge finding techniques
13. Locate and drill holes on the mill
14. Ream holes on the mill
15. Square a workpiece on the mill
16. Use test indicators for setups
17. Shift machine from low to high range
18. Use R-8 collets
19. Use drill chucks
20. Machine bolt hole pattern
21. Find edge with test indicator
22. Use offset boring head
23. Identify milling machine axis X, Y & Z
24. Counterbore drilled holes
25. Identify types and applications of form cutters
26. Explain angular indexing (i.e., dividing head, 5C collet indexer)

27. Debur, measure and inspect milling projects
28. Hand tapping on a mill
29. Power tapping on a mill
30. Mill keyway-keyseat
31. Identify work holding devices
32. Apply backlash principles
33. Differentiate between climb milling and conventional milling

Assessments

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

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 requiring the course in a specific program.