

Minnesota Articulated College Credit (ACC) Agreement

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Agreement Name: **Precision Machining**

Agreement Last Reviewed: **Fall 2022**
Next Review Date: **October 2023**

Class	Title	College	Credits
MACH 1601	Introduction to Precision Machining	Minnesota State College Southeast	4 of 4 Credit

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. Safety considerations
2. Setup for manual machines
3. Operation of manual machines
4. Calculate machining data
5. Metallurgy Concepts
6. Measure parts and compare to specifications
7. Demonstrate professionalism
8. Explain machine shop safety
9. Wear safety glasses & proper attire
10. Explain lathe operations
11. Explain grinding operations
12. Explain milling operations
13. Explain drilling operations
14. Explain sawing operations
15. Explain machine shop tooling
16. Explain blueprint document
17. Explain machine shop surface finishes
18. Explain metal materials
19. Understand metal types
20. Use reference books
21. Understand machine shop formulas
22. Calculate measurements
23. Calculate speeds and feeds
24. Calculate depth of cut
25. Identify steels
26. Saw parts
27. Set up tooling for machining

28. Set up job in machine tool
29. Use hand tools
30. Sharpen tools
31. Machine parts on engine lathe
32. Machine parts on milling machine
33. Machine parts on surface grinder
34. Machine hole types
35. Calculate measurements
36. Prepare measuring equipment
37. Demonstrate measuring tools
38. Use measuring tools
39. Measure parts to print
40. Keep tools clean
41. Maintain work area
42. Clean work area

Assessments:

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

1. Turn in all assignments
2. Complete all assigned tasks or jobs
3. Complete final exam

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.