Program Description
The Machine Tool Technology program provides students with entry-level skills and theoretical knowledge to program and operate all of the latest machine tools utilized in modern manufacturing facilities. Graduates from this program are prepared to enter the industry as machine operators, production machinists, CAD/CAM technicians, CNC programmers, and tool designers.

The course of study includes: manual milling and turning; measurement and materials; job planning and layout; CAD/CAM software; CNC milling and turning; mold and die making; and EDM technology. The program’s curriculum is closely aligned with standards set forth by National Institute of Metalworking Skills (NIMS).

Due to high demand, most machine tool students can find full-time employment in the field long before graduation and many will be working in a shop within just the first year of the program. Arts & Sciences curriculum supports the technical coursework by enhancing the students’ communication, mathematics, and critical thinking skills.

Dunwoody College of Technology: a non-profit, private technical college since 1914.

Credential Earned | AAS Degree
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Classes Offered | Day
Length of Program | 2 years (4 semesters)
Available Starts | Fall Semester only; for Fall only starts, students can take Arts & Sciences courses in Spring
Accreditation | NIMS (National Institute for Metalworking Skills)
Further Study | Bachelor’s Completion Degree in Industrial Engineering Technology

Degree Requirements
- MACH110 Machine Tool Fundamentals Lab
- MACH1120 Machine Tool Fundamentals Theory
- MDES1110 Engineering Drawings with SolidWorks
- MACH1210 Advanced Machining Lab
- MACH1220 Advanced Machining Theory
- MDES1230 Geometric Dimensioning & Tolerances
- MACH2210 CNC Mill, EDM & Die Making Lab
- MACH2220 CNC Mill & EDM Theory
- MACH2230 Die Design Theory
- MACH2140 MasterCAM I
- MACH2110 CNC Lathe, Mill & Mold Making Lab
- MACH2120 CNC Lathe & Mill Theory
- MACH2130 Mold Design Theory
- MACH2240 MasterCAM II
- MATH1050 Algebra, Trigonometry & Geometry
- MATH1200 Machine Math
- Communications Elective
- Social Sciences Elective
- Humanities Elective
- Natural Sciences Elective
- Diversity Elective

Common Job Titles
- Machinist
- CNC Programmer
- Tool Maker
- Machine Operator
- Manufacturing Technician

Recent Employers
- MTS Systems Corporation
- Kurt Manufacturing
- Graco
- BTD Manufacturing, Inc.
- Mendell

Salary Data
- $53,230* Annual Average Salary

Placement Rate
- 96% **

**Data reflects placement for AY2015-16 graduates indicating employment in their field of study within 6 months following graduation. Full data calculations are available for review during College open hours Monday through Friday 8 a.m. to 4 p.m. CT at Career Services or contact careerservices@dunwoody.edu.

AY2017-18 Revised: 4.4.17

How to Apply
- dunwoody.edu
- 612.374.5800
- info@dunwoody.edu
Course Descriptions

MACH1110 Machine Tool Fundamentals Lab, 5 cr.
Manufacturing of parts through layout and bench work, includes the use of band saws, drill presses, surface grinders, manual lathes and vertical mills. Basic principles in metal-cutting technology includes threading, tapers, knurling, boring, radii cutting and milling procedures such as squaring stock, the use of rotary table and the many other milling and turning operations.

MACH1120 Machine Tool Fundamentals Theory, 4 cr.
Identification, recognition and calculations associated with basic principles in metal-cutting technology including machine feeds and speeds, threading, tapers, knurling, boring, radii cutting and milling and turning procedures.

MDES1110 Engineering Drawings with SolidWorks, 4 cr.
Creation of 3D solid models, assemblies and related engineering documentation using SolidWorks. Blueprint reading and application of ASME/ANSI standards to CAD drawings.

MACH1210 Advanced Machining Lab, 5 cr.
Advanced manufacturing of parts through layout, bench work and job planning. Advanced manual turning and milling and an introduction to CNC M & G codes. CNC portion includes manual programming via machine control and software simulation.

MACH1220 Advanced Machining Theory, 4 cr.
Identification, recognition and calculations associated with advanced milling and turning operations, inspection of finished parts and an introduction to the G & M codes used in CNC programming. CNC portion includes manual programming in notepad and Immersive software simulation.

MDES1230 Geometric Dimensioning & Tolerances, 4 cr.
Principles of geometric dimensioning and tolerancing in the context of engineering and manufacturing. Application of principles using coordinate measurement machines.

MACH2110 CNC Lathe, Mill & Mold Making Lab, 5 cr.
Advanced manufacturing processes using CNC lathes, CNC mill and EDM, design and build of an injection mold, along with hand and inspection tool techniques.

MACH2120 CNC Lathe & Mill Theory, 2 cr.
Advanced CNC mill programming and introduction to CNC lathe programming. G & M codes, canned cycles, jigs, fixtures and work holding methods.

MACH2130 Mold Design Theory, 2 cr.
Mold making methods and industry standard practices, history and uses. Design of one injection mold from concept to finished prints. Includes mold steels, press operation, molding cycle and inspection of finished parts.

MACH2140 MasterCAM I, 4 cr.
2D and 3D geometry and surface model creation using MasterCAM software, an associative computer-aided manufacturing system for milling and turning. M and G code programs will be created, debugged and simulated cutter paths run for simple part geometries.

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MATH1050 Algebra, Trigonometry & Geometry, 3 cr.
Principles of algebra, geometry and trigonometry used in the context of a technical setting. Problem-solving strategies are developed and applied to technology.

MATH1200 Machine Math, 3 cr.
Translation of engineering drawing dimensions to machine working dimensions. Integration of algebra, geometry and trigonometry to solve machine applications. Applications of compound angles.