CNC MACHINING TECHNOLOGY AAS

This program provides training that prepares students to set up and operate machining equipment, handle inspection devices, analyze production problems, and move into supervision of machining. Students obtain a strong background in machining, engineering graphics, computers (CAD/CAM/CNC), quality control/quality assurance, material handling and processing, and leadership skills. The program provides a balance between practical training in manufacturing processes and technical education in manufacturing analysis, planning, and control with supporting emphasis in communications, mathematics, science, and business.

To prepare for entry into the program courses in metal or wood shop, mechanical drawing, English, mathematics, physics, and computers are strongly recommended. Activity in clubs or organizations which emphasize leadership skills is also recommended. There is an opportunity for students to work in industry for a specified time and receive college credit, or to convert work and life experience into college credit for this program. Those interested in such an opportunity are encouraged to contact their advisor for further details at the time of registration.

Entrance requirements for degree seeking students in the CNC Machining Technology program include:

- Aleks score in Math of 30 or higher, Writing Placement Exam of 2 or higher, or qualify for MTHPT-137 and ENGL-101.
- Enrollment priority will be given to students on the basis of student's advising date.

Upon completion of the CNC Machining Technology A.A.S. Degree, the student will be able to demonstrate ability to:

- Knowledge of safety in work place and use of tools safely
- Material knowledge of metals and synthetics to relate to the machining process
- Machine cutting tools and their designed use including speeds and feeds
- Knowledge of work holding as it relates to machine shop equipment which include jigs and fixturing and correct machining order
- Ability to program, edit, setup, and operate CNC lathes and milling machines. Students will be able to produce a variety of parts from 2-D CAD files
- Able to create swept surfaces, ruled surfaces, projected surfaces, surfaces of revolution, and Coons surfaces
- Application of proper utilization of tool length libraries and tool step-over distances to produce 3-D parts within specified surface finish requirements
- Analysis and planning of manufacturing procedures in the development of a project plan, schedule and control of the project

General Education Requirements

Code	Title	Credits
Written Communication		
ENGL-101	WRITING AND RHETORIC I	3.00
Oral Communication		
Select one of the following:		3.00
COMM-101	FUNDAMENTALS OF ORAL COMMUNICATION	
COMM-203	SMALL GROUP COMMUNICATION	
COMM-204	PUBLIC SPEAKING	
Mathematical Ways of Knowing		
MTHPT-137	MATH FOR TECHNOLOGY	4.00
Social & Behavioral Ways of Knowing		
Select one of the following:		3.00
ANTH-102	CULTURAL ANTHROPOLOGY	
ANTH-120	WORLD PREHISTORY	
ANTH-170	INTRODUCTION TO NATIVE AMERICAN STUDIES	
ECON-201	PRINCIPLES OF MACROECONOMICS	
ECON-202	PRINCIPLES OF MICROECONOMICS	
GEOG-102	INTRODUCTION TO GEOGRAPHY	
HIST-101	WORLD HISTORY I	
HIST-102	WORLD HISTORY II	
HIST-111	UNITED STATES HISTORY I	
HIST-112	UNITED STATES HISTORY II	
HRPT-184	DIVERSITY IN ORGANIZATIONS	
HRPT-185	HUMAN RELATIONS IN ORGANIZATIONS	
POLS-101	AMERICAN NATIONAL GOVERNMENT	

POLS-237	INTERNATIONAL POLITICS	
POLS-285	COMPARATIVE GOVERNMENT	
PSYC-101	INTRODUCTION TO GENERAL PSYCHOLOGY	
PSYC-205	LIFESPAN DEVELOPMENTAL PSYCHOLOGY	
SOC-101	INTRODUCTION TO SOCIOLOGY	
SOC-102	SOCIAL PROBLEMS	
SS-184	DIVERSITY IN ORGANIZATIONS	
SS-185	HUMAN RELATIONS IN ORGANIZATIONS	
Additional General Education Core		
Select one of the following:		3.00-5.00
ANTH-360	RACE AND ETHNICITY	
ART-100	INTRODUCTION TO ART	
BIOF-100	INTRODUCTION TO BIOINFORMATICS	
BIOL-100	CONCEPTS OF BIOLOGY	
BIOL-120	PLANTS AND PEOPLE	
BIOL-123	BIOLOGY IN FILM	
BIOL-175	HUMAN BIOLOGY	
BIOL-227	HUMAN ANATOMY AND PHYSIOLOGY I	
CHEM-100	CONCEPTS OF CHEMISTRY	
CHEM-105	GENERAL, ORGANIC AND BIOCHEMISTRY	
CHEM-111	PRINCIPLES OF CHEMISTRY I	
CITPT-108	INTRODUCTION TO COMPUTER SCIENCE	
COMM-345	INTERCULTURAL COMMUNICATION	
CS-108	INTRODUCTION TO COMPUTER SCIENCE	
ENGL-175	LITERATURE AND IDEAS	
ENGL-257	WORLD CLASSICS	
ENGL-258	INTERNATIONAL LITERATURE	
ENGL-260	NATIVE AMERICAN LITERATURE	
ENGL-261	MYTHOLOGIES	
ENGL-474	NATIVE AMERICAN WRITTEN LITERATURE	
FSCI-101	INTRODUCTION TO FORENSIC SCIENCE	
GEOL-101	PHYSICAL GEOLOGY	
GEOL-120	INTRODUCTION TO EARTH SYSTEMS	
GIS-271	GEOGRAPHIC INFORMATION SYSTEMS	
HUM-101	THE ART AND HISTORY OF THE MOTION PICTURE	
HUM-150	INTRODUCTION TO THE ARTS	
ID-240	INTEGRATED SCIENCE II	
ID-300C	ETHICS AND IDENTITY	
ID-301A	HELLS CANYON INSTITUTE	
KIN-220	SOCIAL-CULTURAL ASPECTS OF SPORTS	
MUS-101	SURVEY OF MUSIC	
MUS-102	MUSIC IN AMERICA	
MUS-150	WORLD MUSIC	
MUS-151	HISTORY OF MUSICAL THEATER	
MUS-152	HISTORY OF JAZZ AND POPULAR MUSIC STYLES	
NP-101	NEZ PERCE LANGUAGE AND CULTURE	
NP-102	NEZ PERCE LANGUAGE AND HISTORY	
NS-140	INTEGRATED SCIENCE I	
NS-150	INTRODUCTION TO NATURAL SCIENCES	
NS-174	NATURAL SCIENCE FOR ELEMENTARY EDUCATOR	
PHYS-111	GENERAL PHYSICS I	
or PHYS-112	GENERAL PHYSICS II	

PHYS-171	PHYS SCIENCES FOR ELEMENTARY EDUCATORS	
PHYS-205	DESCRIPTIVE ASTRONOMY	
PHYS-211	PHYSICS FOR SCIENTISTS AND ENGINEERS I	
SPAN-101	ELEMENTARY SPANISH I	
SPAN-102	ELEMENTARY SPANISH II	
SPAN-201	INTERMEDIATE SPANISH I	
SPAN-202	INTERMEDIATE SPANISH II	
SS-184	DIVERSITY IN ORGANIZATIONS	
SS-185	HUMAN RELATIONS IN ORGANIZATIONS	
THEA-101	SURVEY OF THE THEATER	
Total Credits		**16.00-18.00**

Program Requirements

Technical Core

Code	Title	Credits
AMFTI-110	MACHINING THEORY I	2.00
AMFTI-112	MACHINING THEORY II	2.00
AMFTI-122	ENGINEERING GRAPHICS WITH AUTOCAD	4.00
AMFTI-141	MACHINING LAB I	3.00
AMFTI-143	MACHINING LAB II	3.00
AMFTI-161	QUALITY CONTROL 1 METROLOGY	3.00
AMFTI-232	GD&T APPLICATION & INTERPRETATION	3.00
AMFTI-241	INTRODUCTORY CAD AND CAM	3.00
AMFTI-243	ADVANCED CAD AND CAM	3.00
AMFTI-245	CNC MACHINING PROCESSES	3.00
AMFTI-263	PROJECT PLANNING	3.00
AMFTI-265	MANUFACTURING PROJECT	6.00
ENGTE-106	DRAFTING FUNDAMENTALS	6.00
ENGTE-135	APPLIED PHYSICS	4.00
Total Credits		**48.00**

Sequential Plan of Study

Course	Title	Credits
First Year		
Fall		
AMFTI-110	MACHINING THEORY I	2.00
AMFTI-112	MACHINING THEORY II	2.00
AMFTI-122	ENGINEERING GRAPHICS WITH AUTOCAD	4.00
ENGTE-106	DRAFTING FUNDAMENTALS	6.00
MTHPT-137	MATH FOR TECHNOLOGY	4.00
	Credits	**18.00**
Spring		
AMFTI-141	MACHINING LAB I	3.00
AMFTI-143	MACHINING LAB II	3.00
AMFTI-161	QUALITY CONTROL 1 METROLOGY	3.00
CORE	Oral Communication	3.00
ENGTE-135	APPLIED PHYSICS	4.00
ENGL-101	WRITING AND RHETORIC I	3.00
	Credits	**19.00**

Second Year		
Fall		
AMFTI-232	GD&T APPLICATION & INTERPRETATION	3.00
AMFTI-241	INTRODUCTORY CAD AND CAM	3.00
AMFTI-243	ADVANCED CAD AND CAM	3.00
AMFTI-245	CNC MACHINING PROCESSES	3.00
CORE	Additional General Education Course	3.00
CORE	Social & Behavioral Ways of Knowing	3.00
	Credits	**18.00**
Spring		
AMFTI-263	PROJECT PLANNING	3.00
AMFTI-265	MANUFACTURING PROJECT	6.00
	Credits	**9.00**
	Total Credits	**64.00**

Graduates from CNC Machining Technology (https://www.careeronestop.org/toolkit/careers/occupations/Occupation-profile.aspx?keyword=Computer%20Numerically%20Controlled%20Machine%20Tool%20Programmers,%20Metal%20and%20Plastic&onetcode=51401200&ES=Y&EST=cnc+machining) programs go on to obtain careers in a variety of fields:

- Manufacturing
- Millwright Positions
- Machining Center Positions
- Fluid Power Industry Positions
- CNC Programmer
- Process Engineer
- Machinist