

KALAMAZOO VALLEY COMMUNITY COLLEGE

RELATED TRADE INSTRUCTION

MACHINIST

<u>COURSES</u>	<u>DESCRIPTION</u>	<u>CONTACT HOURS</u>	<u>CREDIT HOURS</u>
MATH 092	BASIC TECH MATH	48	3
MATH 106	TECH MATH 1	64	4
MSM 102	BASICS OF MECH TECH	32	2
DRFT 105	BLUEPRINT READING	32	2
MACH 103	FUND OF MACH TOOL OP	128	4
MACH 105	ADV MACH TOOL OP 1	112	3
MACH 220	NUMERICAL CON CONCEPTS	96	4
	TOTAL HOURS	512	22

OPTIONAL:

DRFT 100	FUND OF DRAFTING	112	3
MACH 201	TOOL CONSTRUCTION	112	3
WELD 120	INTRO TO WELDING	112	3
MACH 205	PLASTICS TOOLING CON	112	3
MACH 221	ADV NUMERICAL CONTROL	80	3
MACH 230	COMPUTER AIDED MFG	96	4

Kalamazoo Valley Community College
Apprenticeship Department

SUGGESTED SCHEDULE OF WORK EXPERIENCE
For

MACHINIST APPRENTICES

APPROXIMATE HOURS

1. SURFACE GRINDING	_____
2. CYLINDRICAL GRINDING	_____
3. FORM GRINDING & FORM MILLING	_____
4. DRILLING (MINIATURE COOLANT HOLES)	_____
5. EDM (SET-UP)	_____
6. EDM (MACHINE OPERATION)	_____
7. INSPECTION	_____
8. BENCHING (HAND WORK)	_____
9. 3-DIMENSIONAL DUPLICATING	_____
10. MACHINE MAINTENANCE & REPAIR	_____
11. GENERAL SHOP & UTILITY	_____
12. CNC MILLING	_____
13. CNC PROGRAMMING	_____
14. TRAVELING WIRE EDM	_____
	Total _____

DESCRIPTION MACHINIST

Sets up and operates conventional, special-purpose, and numerical control (NC) machines and machining centers to fabricate metallic and nonmetallic parts, and fits and assembles machined parts into complete units, applying knowledge of machine shop theory and procedures, shop mathematics, machinability of materials, and layout techniques: Studies blueprints, sketches, drawings, manuals, specifications, or sample part to determine dimensions and tolerances of finished workpiece, sequence of operations, and setup requirements. Measures, marks, and scribes dimensions and reference points on material or workpiece as guides for subsequent machining. Selects, aligns, and secures holding fixtures, cutting tools, attachments, accessories, and materials on machines, such as mills, lathes, jig borers, grinders, and shapers. Calculates and sets controls to regulate machining factors, such as speed, feed, coolant flow, and depth and angle of cut, or enters commands to retrieve, input, or edit computerized machine control media. Starts and observes machine operation to detect malfunctions or out-of-tolerance machining, and adjusts machine controls or control media as required. Verifies conformance of finished workpiece to specifications, using precision measuring instruments. Sets up and operates machine on trial run to verify accuracy of machine settings or programmed control data. Fits and assembles parts into complete assembly, using jigs, fixtures, surface plate, surface table, hand tools, and power tools. Verifies dimensions and alignment of assembly, using measuring instruments, such as micrometers, height gauges, and gauge blocks. May install machined replacement parts in mechanisms, machines, and equipment, and test operation of unit to ensure functionality and performance. May operate welding equipment to cut or weld parts. May develop specifications from general description and draw sketch of part or product to be fabricated. May confer with engineers, production personnel, programmers, or others to resolve machining or assembly problems.