



Philosophy/Goals: When the student has successfully completed this semester he/she will have a basic knowledge and practical experience in a conventional machine shop environment. He/she will have an understanding of the complexity of a machine shop and manufacturing procedures.

This knowledge will be an aid for the student to further research and understand other material as it relates to the Metal Removal Industry.

The student will appreciate the need for a punctual and safe work ethic and attitude requirements in an industrial setting.

#### Method of Assessment (Grading Method)

Students will be assessed in areas of attendance, initiative, co-operation and ability. Good attendance is of vital importance on any job and for this reason we stress attendance in this program. Generally good attendance is directly related to a students' other qualities and abilities.

Theory Tests	- 50%
Lab Assignments	- 20%
Attendance/Attitude	- 30%

#### Textbooks:

Reference (from 1st year)  
Machine Shop Training by: Krar-Oswald  
McGraw - Hill Ryerson

Technology of Machine Tools by Krar-Oswald  
McGraw - Hill Ryerson

SPECIAL NOTES: In keeping with our theme of punctuality and attendance the student generally will be deducted marks for late or missed classes with few excuses acceptable.

The student will generally work through the theory portion with guidance from his/her instructor thru a study guide and with consultation and frequent testing to ensure the material is covered. As outlined below.

TOPIC	<u>TOPIC &amp; REFERENCE</u> CODE	CURRICULUM
	Safety in a Shop Setting MS01	<ul style="list-style-type: none"> <li>-safe working conditions and corrections</li> <li>-causes of accidents</li> <li>-personal grooming</li> <li>-housekeeping</li> <li>-safe work practices</li> <li>-reporting of hazards and accidents</li> <li>-machine shop safety rules</li> </ul>
	Types and Applications of Measuring Tools MS02	<ul style="list-style-type: none"> <li>-basic tools -rules</li> <li>-systems of measurement</li> <li>-combination square, precision square protractor and straight edges</li> <li>-micrometer calipers</li> <li>-inside and depth micrometers</li> <li>-vernier calipers and scales</li> <li>-dial indicators, telescoping and small hole gauges</li> <li>-gauges, surface plates and layout tables</li> <li>-levels, dividers, trammels scribes calipers &amp; surface gauges</li> </ul>
	Layout Methodology and Tools	<ul style="list-style-type: none"> <li>-purpose and accuracy</li> <li>-basic precision tools and their application</li> <li>-layout of shapes</li> <li>-procedure and methods</li> </ul>
	Job Planning and Sequencing MS06	<ul style="list-style-type: none"> <li>-interpreting mech. drawings</li> <li>-various machine operations</li> <li>-machining terminology</li> <li>-stock allowances</li> <li>-chucking and holding requirements</li> <li>-simple job planning</li> </ul>

TOPIC	TOPIC & REFERENCE CODE	CURRICULUM
5.	Grinders and Grinding MS08	<ul style="list-style-type: none"> <li>•safe work practices</li> <li>•disc and belt sanders types and application</li> <li>•bench and pedestal grinders- types and application</li> <li>•dressing and truing</li> <li>•grinding tool bits</li> <li>•surface grinders</li> <li>•care and selection of wheels</li> <li>•components of wheels</li> <li>•cylindrical grinding</li> <li>•introduction to center less grinding</li> </ul>
	Drills and Drilling Machines MS09	<ul style="list-style-type: none"> <li>•drilling machine safety</li> <li>•drill presses: parts, functions &amp; operations</li> <li>•drilling tools</li> <li>•understanding drills</li> <li>•work set-ups</li> <li>•speeds and feeds</li> <li>•types of operations performed</li> </ul>
	Mills and Milling MS12	<ul style="list-style-type: none"> <li>•milling machine safety</li> <li>•parts and function of various types</li> <li>•various operations performed</li> <li>•work holding devices and set ups</li> <li>indexing problems and calculations</li> <li>machine size and capacity</li> <li>tool holding devices</li> <li>cutter types and applications</li> <li>speed and feed calculations and consideration</li> <li>milling operations and set ups</li> <li>gear ratios and terminology</li> <li>gear types and application</li> </ul>
	Lathes and Lathe Operations MS11	<ul style="list-style-type: none"> <li>lathe types and application</li> <li>lathe parts and functions</li> <li>lathe accessories and application</li> <li>cutting speeds and feeds</li> <li>-calculations and consideration</li> <li>toolbit types and nomenclature</li> <li>tapers and taper turning</li> <li>lathe operations</li> <li>threads and threading</li> <li>lathe safety and precautions</li> </ul>