

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

COURSE TITLE: Machine Shop, Workshop Technology

CODE NO: MCH 109, MCH 214

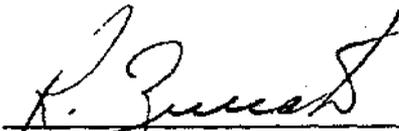
SEMESTER: One , Two

PROGRAM: Mechanical Engineering Technician, Mechanical
Engineering Technician - machining

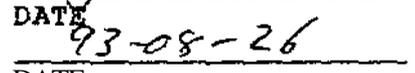
AUTHOR: Greg White

DATE: August 1992 Previous Outline Dated : August 1986

APPROVED:


PROGRAM COORDINATOR

DEAN ^


DATE

DATE

Machine Shop

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TOTAL CRED HOURS : Five (5), delivered with 5 shop hours and
1 theory hour per week * 15 weeks per semester
Note: theory classes will also be delivered
during the lab portion and the students should
come prepared for such.

I . PREREQUISITE(S) :

The only prerequisite for this course is general acceptance in the common first year mechanical program. It must be stressed though that the student will be expected to have and wear the required safety equipment at all times during shop. The industrial shop simulates an actual work place and therefore the inherent hazards. All students with a disability should identify these to their instructor so that a judgement may be made as to their personal safety while in the shop

II . PHILOSOPHY/GOALS

When the student has successfully completed both semesters of this course of study he/she should have an understanding of the basic workings within a machine shop environment. The intention is to provide the students with sufficient background to understand the principle operations of machining and machine tools and appreciate the skills and limitations of a machine shop.

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STUDENT PERFORMANCE OBJECTIVES

Upon successful completion of this course the student will be able to :

Demonstrate the ability to work safely in an industrial setting and recognize causes of accidents and how to prevent them. The student will know their responsibility, that of the employer and the government to ensure a safe and productive workplace.

Recognize and apply various precision and semi-precision measuring tools found in the metal removal and inspection industries. Apply these tools with consistent accuracy, care of such, as well describe their variations and limitations.

Recognize and apply various precision and semi-precision layout tools found in the metal removal and inspection industries. Apply these tools with consistent accuracy, care-of such, as well describe their variations and limitations.

Interpret various mechanical drawings to determine various machining operations to manufacture the product. Demonstrate the ability to select the proper stock, determine the job sequencing, utilize various machining operations, holding and chucking requirements to complete lab projects within time restraints and specification.

Demonstrate the ability to utilize various machine tools (lathes, mills, saws, grinders, drills, shapers, others). Use the various sizes and models of the various machine tool groups to complete assigned projects. Relate the theoretical calculations and operations to actual practise within specified time and accuracy requirements. To identify the parts, functions, operations, variations safety precautions and limitations of the various machine tools.

Recognize and apply various hand tools found in the metal removal and inspection industries. Apply these tools with consistent proper use, care of such, as well describe their variations and limitations.

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COURSE DELIVERY METHODOLOGY

It should be noted that the various topics to be covered to meet the specific objectives can be found In the LEARNING GUIDE machine shop module Units 1 thru Units 12, required for the course and available at the Campus Shop. In order for the student to derive the most out of the course and meet the objectives the course. Some topics are taught concurrently via lectures, demonstrations and hands on experience. The student will be assigned work out of the module on a regular schedule in order to complete the module in it's entirety by years end. However In order to meet the requirement of the lab practise the instructors will augment a regular completion schedule with individual topic areas of timely relevance.

This independent learning style is often difficult for some students, and it must be stressed that the onus is on the individual to supplement his learning and knowlege base thru independent study. The student however should at all times communicate with his/her instructor and problems that they are having with the material.

One advantage to this method of teaching -is that student given guidance can go beyond the specific course requirements and learn the invaluable lesson of self learning to use in his/her future endeavours.

Your instuctors are available not only for the required course material but to also help and guide you in your quest for further knowledge in this particular field.

As a guide only it is suggested that a MINIMUM of THREE hours per week should be timetabled individually in order to fullfill the requirements of the course. The student will be responsible to complete specific assignments on time. Write written tests to show proficiency in the various topic areas. Complete lab assignments as assigned. The text books chosen for the course also have a number of supplementary questions and it is suggested that these also be completed for thorough knowlege of a particular topic area. At any time supplementary reading: and assignments are available from your instructor if requested or required.

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METHODS OF EVALUATION

A final grade will be derived from the following:

1. 50% of the grade will be determined from theory tests and assignment work. The student should expect a theory test every third week covering assigned material. There will be assigned various projects with specific due dates accounting for approximately 20% of the theoretical mark. There will be no final exam as such/ and the make-up test for individual topics or complete course will take place at semesters *ar*<5..
2. 50% of the grade will be determined by shop practise and project work. These will include assigned projects, practical tests and individual project assignments. The criteria used will include but not restricted to the following; accuracy, job planning and sequencing, set-up and time to completion.

Notes:

A portion of both the theory and practical"mark is based on cooperation and initiative. Regardless of a persons background or ability in order to work in *an* industrial atmosphere requires the ability to work in harmony and with respect for your peers and supervisors. This attitude is measured and reflected either positively or negatively in your overall grade.

Attendance is a measure not only of physical presence at an appointed hour but also a measure of your cooperation and attitude. Attendance is expected and will therefore be penalized by 1/2 % for every hour missed or late without a valid and acceptable excuse. This 1/2 % will be deducted from your overall grade.

GRADING SYSTEM '.

A+	95 - 100 %	Consistently Outstanding
A	85 - 94 %	Outstanding Achievement
B	75 - 84 %	Consistently Above Average Achievement
C	55 - 74 %	Satisfactory or Acceptable Achievement
R	repeat	Objectives of the course not achieved and the course must be repeated.

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REQUIRED STUDENT RESOURCES :

Technology of Machine Tools, Third Edition available from the bookstore, along with Machine Shop learning guide will be your principle tools for the theoretical portion of the course.

It must be noted that an extensive collection of resource material is available in the school library (resource center), a machine shop specific collection of periodicals, reference material is also available in B109 as well upstairs in B1Q7.

Your instructors also have available materials upon request.

You are expected to bring to the lab portion of the class your text and note book (three ring binder) as a portion of the lab classes may be used to augment theory and will also consist of handouts from your instructor.

For lab classes:

Safety Glasses

S " steel scale

Hair net (if required) Note: Entrance to the lab will be restricted if proper hair covering is not available at the instructors discession

SPECIAL NOTES :

Students with special needs (eg. physical limitations, visual impairments or any learning disabilities) are encouraged to discuss required accomodations confidentially with the instructor.

Your instructor reserves the right to modify the course as he/she deems necessary to meet the needs of the students.