



A POLYTECHNIC INSTITUTION

School of Manufacturing Electronics & Industrial Processes
Program: Technology Teacher Education
Option: Diploma

TTED 3021
Power Tool Basics Metal/Mechanical

Start Date:	October 2006	End Date:	December 2006
Total Hours:	30	Total Weeks:	10
Hours/Week:	3	Lecture:	1
		Lab:	
		Term/Level:	1
		Course Credits:	2
		Shop:	2
		Seminar:	
		Other:	

Prerequisites

Course No.	Course Name
TTED 3020	Hand Tool Basics Metal/Mechanical

is a Prerequisite for:

Course No.	Course Name
TTED 4025	Product Manufacturing for TTED
TTED 4035	Computer Control for TTED

■ Course Description

As a continuation from TTED 3020 this course introduces students to the basic operation and use of metal lathes and milling machines. Students will learn how to select appropriate procedures for specific operations and to develop logical sequences for the production of a project. Safe work practices will be emphasized and lecture content will support hands on practical work.

■ Detailed Course Description**Course Goals:**

To generate enthusiasm for working with metal and to facilitate the building of student confidence in metalwork by providing extensive in-shop skill building experience supported with meaningful theoretical knowledge instruction. Graduates will have gained fundamental proficiency in tool bit preparation and the use of conventional metalworking lathes and milling machines.

Practical work	70%
Theory final exam	30%
TOTAL	100%

Comments:

Practical work will be graded on precision, finish and design where appropriate. A satisfactory practical submission must be made for each assigned project activity in order to obtain a passing grade in TTED 3021. Practical activities will be apportioned individual mark weighting in accordance with the percentage of course time allotted/budgeted by the instructor for each assignment. Students must achieve a passing grade in both the theory and practical aspects of TTED 3021 to pass this course.

■ Course Learning Outcomes/Competencies

Upon successful completion, the student will be able to:

- Understand and work to the standard of safety expected in school shops.
- Properly use metalworking lathes and milling machines to produce project solutions.
- Work to a reasonable standard of fit and finish in making projects.
- Identify metalworking machine tools using correct terminology.
- Make basic calculations required to correctly perform machining operations.
- Understand the essential angles required on a metal cutting tool bit.
- Properly grind a tool bit for machining aluminium.
- Understand and perform simple hardening and tempering operations

■ Verification

I verify that the content of this course outline is current.

Authoring Instructor

Date

I verify that this course outline has been reviewed.

Program Head/Chief Instructor

Date

I verify that this course outline complies with BCIT policy.

Dean/Associate Dean

Date

Note: Should changes be required to the content of this course outline, students will be given reasonable notice.

■ Instructor(s)

Peter A. Trant

Office Location: SW9 201F

Office Phone: 604 432-8280

Office Hrs.: By Appointment

E-mail Address: peter_trant@bcit.ca

■ Learning Resources**Required:**

Caspersen, BASIC METALWORKING PROCEDURES, Pacific Educational Press

6" (150mm) Vernier calliper, 6" (150mm) steel rule

HSS lathe toolbits (1/4" & 3/8") and pocket honing stone

Fractional drill bits 1/16 to 1/4 and #3 or #4 centre drill

Safety footwear and eyewear as per BCIT regulations.

Recommended:

Small toolbox
Magnifying glass

■ Information for Students

The following statements are in accordance with the BCIT Student Regulations Policy 5002. To review the full policy, please refer to: <http://www.bcit.ca/~presoff/5002.pdf>.

Attendance/Illness:

In case of illness or other unavoidable cause of absence, the student must communicate as soon as possible with his/her instructor or Program Head or Chief Instructor, indicating the reason for the absence. Prolonged illness of three or more consecutive days must have a BCIT medical certificate sent to the department. Excessive absence may result in failure or immediate withdrawal from the course or program.

Academic Misconduct:

Violations of academic integrity, including dishonesty in assignments, examinations, or other academic performances are prohibited and will be handled in accordance with the 'Violations of Standards of Conduct' section of Policy 5002.

Attempts:

Students must successfully complete a course within a maximum of three attempts at the course. Students with two attempts in a single course will be allowed to repeat the course only upon special written permission from the Associate Dean. Students who have not successfully completed a course within three attempts will not be eligible to graduate from their respective program.

■ Assignment Details

- students are personally responsible for accessing any course material or information missed due to absence
- Students will actively share in the routine care, end of class clean-up, as needed set-up and adjustment of equipment and a final term end clean-up.

Schedule

Week of/ Number	Outcome/Material Covered	Reference/ Reading	Assignment	Due Date