A POLYTECHNIC INSTITUTION

Course Outline

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

Course Number TTED 4060
Course Name Teaching Electronics 1

Start Date:	September, 2006				**End Date:**	November, 2006			
Total Hours:	110	**Total Weeks:**	11		**Term/Level:**	3	**Course Credits:**	9.0	
Hours/Week:	12	**Lecture:**	4	**Lab:** 8	**Shop:**	SW9-123	**Seminar:** -	**Other:**	

Prerequisites

Course No.	Course Name
TTED 3060	Electronic Foundations
TTED 4000	Design, Drawing & CAD 1 for TTED
TTED 4010	Computer Applications for TTED
TTED 4025	Product Manufacturing for TTED
TTED 4035	Computer Control 1 for TTED
TTED 4040	Material Science for TTED

Course Number TTED 4060 is a Prerequisite for:

Course No.	Course Name
TTED 5060	Teaching Electronics 2

v Course Description

This course will investigate aspects of electronic components, power supplies, digital and linear electronic systems which are essential to teaching electronics in schools. It will begin at an introductory level and will take students to an intermediate level. Students will be involved in project design, theory and testing, circuit board and project construction. Appropriate safety and presentation of electronics information in school programs will be emphasized.

v Evaluation

Labs, shop work & maintenance	15 %	Comments:
Sectional Quizes	25 %	
Projects	40 %	
Final Exam	20 %	
TOTAL	100%	

v Course Learning Outcomes/Competencies

Upon successful completion, the student will be able to:

- establish a standard of safety fitting for a high school electronics shop
- be aware of the activities associated with electronics in the BC Curriculum Guide
- analyze simple electronic systems and explain how functional units relate to each other
- read and develop drawings used in high school electronics
- use the tools and fabrication equipment required in the construction of typical electronics projects
- work with the units of measurement required in a high school electronics shop
- use the test equipment found in a high school electronics labs.
- troubleshoot student lab and project work by troubleshooting student projects.

v Verification

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

Authoring Instructor — Aug 30, 2006 Date

I verify that this course outline has been reviewed.

Program Head/Chief Instructor — Aug 28/06 Date

I verify that this course outline complies with BCIT policy.

Dean/Associate Dean — 2006/08/30 Date

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

v Instructor(s)

Office Location: SW9 - 123 Office Phone: 604 451-6722
Office Hrs.: posted on shop door E-mail Address: paul_wytenbroek@bcit.ca

v Learning Resources

Required:

Basic Electronics - by the Radio Telegraph and Short Wave Radio Association
Component Board: such as Global Instruments or Circuit Test MB-102.
Parts and project container (try Canadian Tire for cheap tool boxes with sectioned tops)

Recommended:

* all normal supplies, tools and parts will be supplied.

v Information for Students

Assignments: Late assignments, lab reports or projects will be devalued 10% per day late. Assignments, lab reports or projects must be done on an individual basis unless otherwise specified by the instructor.

Makeup Tests, Exams or Quizzes: There will be **no** makeup tests, exams or quizzes. If you miss a test, exam or quiz, you will receive zero marks. Exceptions may be made for **documented** medical reasons or extenuating circumstances. In such a case, it is the responsibility of the student to inform the instructor **immediately**.

Ethics: BCIT assumes that all students attending the Institute will follow a high standard of ethics. Incidents of cheating or plagiarism may, therefore, result in a grade of zero for the assignment, quiz, test, exam, or project for all parties involved and/or expulsion from the course.

Attendance: The attendance policy as outlined in the current BCIT Calendar will be enforced. Attendance will be taken at the beginning of each session. Students not present at that time will be recorded as absent.

Illness: A doctor's note is required for any illness causing you to miss assignments, quizzes, tests, projects, or exam. At the discretion of the instructor, you may complete the work missed or have the work prorated.

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 the appropriate program.

Course Outline Changes: The material or schedule specified in this course outline may be changed by the instructor. If changes are required, they will be announced in class.

Advancement: Students who fail three or more courses in a term cannot advance to the next term and may be asked to discontinue from the program.

v Assignment Details

□ Written assignments, lab reports and homework should be placed in the instructors letter box.
□ All assignments, lab reports, homework and projects must be individual work and will be screened for cooperative effort and evaluated accordingly.
□ Attendance is required throughout the entire lab time. Breaks, once negotiated will be adhered to by all.

Schedule

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

Week of	Lecture Outcome / Theory Covered	Lab Outcome / Lab Work Covered	Reference / Reading	Assignment	Assignment Due
*Sep 4 –8	Lecture 1 **Labour day** Lecture 2 Orientation & review of 3060 theory & Elx. vs Elec.	Lab 1c Circuit Wiring 1 – 5 Lab 2c Catch-up Day Lab 1d **Opening Day** Lab 2d Circuit Wiring 1 – 5	Understanding Basic Electronics (UBE) 7-1 to 12-2 & Resource Manual (RM) unit 1– 3 & 9 - 11	Circuit Worksheet	
Sep 11 – 15	Lecture 3 Seri's & Par// Circ's & Ohm's Law Lecture 4 **CW & CM Quiz** Solid State Devices	Lab 3cd Circuit Measurement Labs 1 – 7 (Gr. 10) Lab 4cd Circuit Measurement Labs 1 – 5 (Gr. 11)	UBE 12-3 to 14-6 UBE 27-1 to 28-6 RM units 16 & 17	Voltage Divider Problems	Ohm's Law Quiz Sept. 13
Sep 18–22	Lecture 5 Solid State Devices Lecture 6 Solid State Devices	Lab 5cd SSD Exercises Lab 6cd SSD Lecture - Exercises & Project	UBE 25-1 to 25-6 & 26-1 to 26-8	SSD design problems	
*Sep25 – 29	Lecture 7 **SSD Quiz** Power Supply Theory Lecture 8 **Shinerama**	Lab 7cd PS Experiments Lab 8cd PS Project - Stage 1	UBE 19-1 to 19-10 & 22-1 to 22-8 & RM units 18 & 19		SSD Quiz Sept. 27
Oct 2 – 6	Lecture 9 PS Theory Lecture 10 PS Theory & Case Details	Lab 9cd PS Project – Stage 2 Lab 10cd PS Project - Wiring	UBE 26-9 to 26-14		
*Oct 9 – 13	Lecture 11 **Thanksgiving** Lecture 12 **PS Quiz** & Audio / Linear	Lab 11cd PS Project - Case Lab 12cd Audio Test Circuits	RM Module Library – Unit 2		PS Quiz 13 P/S Project Due Oct. 13
*Oct 16 – 20	Lecture 13 Audio / Linear Lecture 14 Audio / Linear	Lab 13cd Audio Project Lab 14d Catch-up Lab 14c **BCTEA Conference**	RM units 14 & 15 & RM unit 16 RM Mod-Lib pg. 48		Audio Project Due Oct. 20
Oct 23 – 27	Lecture 15 Digital Basics Lecture 16 Digital Basics	Lab 15cd Clocks & Invrtrs –1&2 Lab 16cd Digital Games - 3	RM Module Mod-Lib pgs 43-50 & Adventure Series UBE 29-5 to 29-8	Logic Worksheet	
Oct30–Nov3	Lecture 17 Digital Basics Lecture 18 Digital Basics	Lab 17cd Binary Counters – 4 Lab 18cd 0-99 Digital Cnter - 5	RM Mod-Lib pgs 50-51		
*Nov 6 – 10	Lecture 19 Digital Projects Lecture 20 Prj.Thry.& Fin.Prep	Lab 19cd Digital Project Lab 20cd Digital Project	UBE 29-1 to 29-4		Project due Nov 10

- Weeks marked with a star indicate a schedule disruption
- This schedule may change with consultation.

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