A POLYTECHNIC INSTITUTION

Course Outline

School of Manufacturing & Industrial Mechanical
Program: Mechanical Engineering Technology
Option:

Course Number: ***ROBT 1270***
Course Name: ***Programming for Robotics***

Start Date:	January 2006				**End Date:**	May 2006			
Total Hours:	100	**Total Weeks:**	20		**Term/Level:**	2	**Course Credits:**	6.5	
Hours/Week:	5	**Lecture:**	3	**Lab:** 2	**Shop:**		**Seminar:**		**Other:**

Prerequisites

Course No.	**Course Name**

ROBT 1270 **is a Prerequisite for:**

Course No.	**Course Name**
ROBT 3341	Robot Applications
ROBT 3356	Micro Controllers

Course Description

This is a course in structured program development using the C language. Low level features of the language, including bit manipulation and integer and floating point storage schemes will be presented. Algorithm development is an essential component of the course, and will be applied to problems from mathematics and machine vision.

Evaluation

Assignments	15%
Labs	15%
Quizzes	10%
Midterm Exam	20%
Final Exam	40%
TOTAL	100%

Comments:

Exams are closed book and closed notes, and formula sheets are **not** allowed.

Course Learning Outcomes/Competencies

Upon successful completion, the student will be able to:

- Develop modular C programs with professional and consistent style
- Develop Algorithms
- Understand and use arrays, pointers, dynamic memory allocation, file I/O
- Understand the fundamentals of data storage
- Use the bit manipulation features of C
- Write C code for robotics and technical applications

Verification

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

John Jenness, PhD. PEng	January 2006
Authoring Instructor	Date

I verify that this course outline has been reviewed.

[signature]	JAN 5, 2006
Program Head/Chief Instructor	Date

I verify that this course outline complies with BCIT policy.

[signature]	2006/01/05
Dean/Associate Dean	Date

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

Instructor(s)

John Jenness	Office Location:	SW9 -201A	Office Phone:	(604) 431-4906
	Office Hrs.:	TBA	E-mail Address:	John_jenness@bcit.ca

Learning Resources

Required: A First Book on ANSI C, 3rd ed.,Gary J. Bronson, Nelson ITP, c.2001

Recommended: none

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.

Tentative Schedule

Week of/ Number	Outcome/Material Covered	Reference Reading	Assignment Lab	Due
Jan 2, #1	Introduction	Chapter 1.1	None	n/a
Jan 9, #2	Problem Solution and Flowcharts	Chapter 1	Assign #1	n/a
Jan 16, #3	Data Types, Variables, Arithmetic Operators	Chapter 2	Lab #1	Assign #1
Jan 23, #4	Assignment Operators, I/O	Chapter 3	Assign #2	Lab #1
Jan 30, #5	Selection Statements	Chapter 4	Lab #2	Assign #2
Feb 6, #6	Repetition Statements	Chapter 5	Assign #3	Lab #2
Feb 13, #7	Functions	Chapter 6	Lab #3	Assign #3
Feb 20, #8	Arrays	Chapter 7	Assign #4	Lab #3
Feb 27, #9	Midterm Exam		Lab #4	Assign #4
Mar 6, #10	Searching and Sorting	Chapter 7	Lab #4 contd.	n/a
Mar 13	Spring Break	n/a	n/a	n/a
Mar 20, #11	Pointers	Chapter 8	Assign #5	Lab #4
Mar 27, #12	Character Strings	Chapter 9	Lab #5	Assign #5
Apr 3, #13	Structures	Chapter 10	Assign #6	Lab #5
Apr 10, #14	Queues and Linked Lists	Chapter 10	Lab #7	Assign #6
Apr 17, #15	Data Files	Chapter 11	Assign #8	Lab #7
Apr 24, #16	Bitwise Operations	Chapter 12	Lab #8	Assign #8
May 1, #17	Memory Allocation	Chapter 10	Assign #9	Lab #8
May 8, #18	Applications	n/a	Lab #9	Assign #9
May 15, #19	Review	n/a	n/a	Lab #9
May 22, #20	Final Exam			