



A POLYTECHNIC INSTITUTION

School of Manufacturing, Electronics & Industrial Processes

Program: Robotics & Automation Technology

Option:

ROBT 3351**Automation Equipment****Start Date:** September 2006**End Date:** December 2006**Total Hours:****75****Total Weeks:****15****Term/Level:****3****Course Credits:****5****Hours/Week:****5****Lecture:****3****Lab:****2****Shop:****Seminar:****Other:****Prerequisites****Course No.****Course Name**

ELEX 2220 Electronic Circuits 1

ELEX 2205 Circuit Analysis 2

PHYS 2164 Applied Physics for Robotics Technology

MATH 2342 Calculus for Robotics

ROBT 3351 is a Prerequisite for:**Course No.****Course Name**

ROBT 4451 Sensor Interfacing

ROBT 4491 Robotics Project

ELEX 4336 Feedback Systems

• Course Description

Covers transformers, rectifiers, voltage regulators, power supplies, dc motors, electric drives, speed torque characteristics of dc motors, braking conditions of dc motors, speed control of electric drives and selection criteria for choosing a servomotor.

• Evaluation

Lab Exercises/Lab quizzes:	20%	Comments:
Quizzes	20%	
Assignments:	0%	
Midterm Exam(s):	20%	
Final Exam:	40%	
TOTAL	100%	

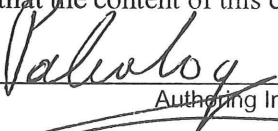
- **Course Learning Outcomes/Competencies**

Upon successful completion, the student will be able to:

1. Describe the dangers of electrical energy and use safe practices for handling electrical circuitry.
2. Describe the operation of transformers, autotransformers, rectifiers, and voltage regulators.
3. Design dc regulated power supplies
4. Test a transformer, and determine its polarity, equivalent circuit, voltage regulation and efficiency under different load conditions.
5. Construct the speed torque characteristics of a dc motor under different loading conditions and control methods.
6. Describe motor control methods.
7. Design and build motor control circuits.
8. Evaluate and select a servomotor under loading conditions.
9. Develop software for controlling a dc motor system.

- **Verification**

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

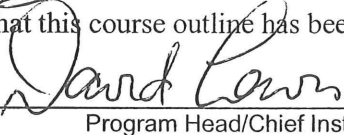


Authoring Instructor




Date

I verify that this course outline has been reviewed.

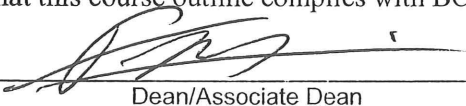


Program Head/Chief Instructor




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)**

Pavlos Paleologou

Office Location: SW3-2930

Office Hrs.:

Office Phone: 604-432-8926

E-mail Address: ppaleolo@bcit.ca

- **Learning Resources**

Required: Handout notes will be given as required

- *Recommended:*

Direct and Alternating Current Machinery. Rosenblantt and Friedman, Merrill.

- Electric Machines. Charles I. Hubert, Merrill.

- Electrical Power Technology. Theodore Wildi, Wiley.

- **Information for Students**

Labs: No late lab reports or projects will be accepted. Lab reports or projects must be done on an individual basis unless otherwise specified by the instructor. Lab attendance is mandatory.

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, quizzes, tests, projects, or exams. At the discretion of the instructor, you may complete the work missed.

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.

Completion of labs: Satisfactory completion of both the laboratory component and the theory component of this course is a requirement for a passing grade. The Lab portion of the course must be passed in order to pass the course.
