



A POLYTECHNIC INSTITUTION

School of Computing and Academic Studies

Program: CIT/CST

Options: n/a

**ACIT/COMP2910
Projects**

Start Date: April 21, 2008

End Date: May 23, 2008

Total Hours: 90 **Total Weeks:** 5

Term/Level: 2 **Course Credits:** 6

Hours/Week: 18 **Lecture:** **Lab:**

Shop: **Seminar:** **Other:** 18

Prerequisites

Course No. **Course Name**

COMP1510 Programming Methods

COMM1116 Business Communications 1

COMP1730 Relational Database Systems

or

ACIT1515 Object Oriented Programming

ACIT1620 Fundamental Web Technologies

ACIT1630 Relational Database Systems

COMP2910 is a Prerequisite for:

Course No. **Course Name**

COMP3900 Computer Projects Practicum 1

ACIT3900 Computer Projects Practicum 1

Course Description (required)

The primary objective of this course is to train students to work in teams during the planning and execution of a technology related project.

Students work in teams of 5, supervised by an assigned faculty member, to plan and execute a complex technology project. Students will gather requirements for the project and prepare a detailed project plan governing their work towards the stated project objectives. Project implementation will require students to understand a new project domain and independently learn a new software development environment.

Instructional components covering teamwork, project planning, and management are a significant part of this course.

Detailed Course Description (optional)

Course Learning Outcomes/Competencies

Upon successful completion, the student will be able to:

- 1) Plan a project, including:
 - identify work tasks as needed to complete an unclear, possibly ambiguous project
 - reduce the scope of work on a project such that the project will meet fixed time constraints
 - select a project lifecycle for use on a project
 - plan and schedule project work tasks
- 2) Manage a project, including:
 - work proactively to find and use external resources
 - formally track and report on the progress of a project
 - deal with issues and crisis that emerge during project execution
- 3) Identify and analyze system requirements:
 - identify and document system requirements
 - clarify ambiguous requirements
 - devise solutions that meet documented requirements
 - document solutions to enable further design and implementation
- 4) Apply teamwork based strategies to meet stated tasks and objective, including:
 - collaborate with other members a team to share information and work
 - trust and rely on the work of others
 - build on the strengths of others
 - allocate work so that all team members are equal participants in the project
 - manage conflicts including clashes of personalities and differences of opinions
- 5) Embrace a new technology, including:
 - independently research and learn a new technology
 - independently research and understand a problem domain
 - proactively establish a development environment that will support a project
 - be creative in the application and use of technology to solve problems
- 6) Apply previously learned skills to a new problem, including:
 - apply software design principles and techniques in the development of a project
 - adopt and use consistent coding and documentation standards on a project
 - iteratively debug, test, and revise the implementation of a solution
- 7) Deploy a working system, including:
 - document the design and implementation of a solution so that it can be evolved in the future
 - install and run a tested solution in a production environment

Evaluation

Students are graded individually, and are given a numeric (percentage) grade.

There are four major components make up the grade for each student. Each component includes a number of assessments. Some of these assessments are individual assessments, others are team based assessments.

Quizzes: 20% - individual - there are 2 quizzes in total
Management: 25% - team - assesses how well the team executed the project
Deliverables: 25% - team - project planning and robot design documentation is required
Challenges: 30% - team - there are 3 major challenges during the course

Specific Gradeable Items

Component	Item	Weight
Quizzes	Quiz 1: requirements and teamwork	10%
	Quiz 2: project planning	10%
Management	Status Reporting	5%
	Project Execution	10%
	Teamwork	10%
Deliverables	Concept Document	5%
	Project Plan	15%
	Robot Design	5%
Challenges	Mission 1 Challenge	5%
	Surprise Challenge	10%
	Final Competition	15%

The course involves demonstration of skills through the use of missions and challenges.

At the end of the course there is a final competition, which is where teams can showcase their final projects.

The grading at this final competition is to a standard, which is based on the number of missions achieved.

Note: teams must successfully complete a minimum of four (4) missions to pass the course.

Peer Evaluation

At the end of the course all students will participate in peer reviews/evaluations. This is a formal process in which students rate their own performance as well as the other members of their team. The results of this peer evaluation will be used to adjust each students grade +/- 15%.

Details on the peer evaluation process will be posted in WebCT.

Student Expectations

Attendance:

- the BCIT attendance policy will be enforced
- students are required to attend all scheduled lectures and labs; attendance will be taken
- students are required to attend all meetings with supervisors
- this is a full time course; students are expected to work on campus during regular full-time school hours

Contribution:

- all members are expected to contribute to the teamwork to the best of their abilities

Verification

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

Rob Neilson

Authoring Instructor

April 2008

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)

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Learning Resources

Required:

1. "Project Management: the Team Approach" Participant Guide with "Standard Edition SDI".

- Notes:
- this workbook is available only at the BCIT bookstore. It is required.
 - you must purchase an original copy of this book. Copied, scanned, or unlicensed copies of the book are not allowed.
 - students who do not have a licensed copy of the book will be asked to leave class, and the BCIT attendance policy will be enforced.
 - students must provide proof of purchase to the instructor upon request.

2. Course website: Comp 2910 WebCT Site

Recommended:

None

■ 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:

The BCIT Attendance Policy will be enforced.

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.

Computer Use Policy:

BCIT has an Institute-wide policy (#3501) pertaining to information technology and services and to the resources available in support of the Institute mission. Computer Systems Technology students are expected to exercise the highest degree of professionalism and ethical behaviour related to information technology. Violations of BCIT Policy #3501 will result in disciplinary action which may include suspension or expulsion of students. Also refer to the Computer Systems Technology Student Conduct Guidelines.

Schedule

Week 1 (Apr 21): Team Building / Understand the Problem

The goal of the first week is to jumpstart the project activity. Students will self-organize into teams on the first day. The next couple days will involve significant time researching and understanding the problem (challenges). Team building workshops will be held for each group to get them started, and impress upon them the importance of (a) thinking creatively, and (b) working as a team.

Teams will work to understand the problem(s), to document these, and to brainstorm possible solutions.

Week 2 (Apr 28): Project Planning and Technology Introduction

In the second week, teams attend project planning workshops where they will learn how to construct a detailed project plan for a large project. In addition, students will continue to familiarize themselves with the technology, and they will prepare a project plan for their actual project.

By the end of week two all teams should have a complete understanding of the problem, have a rudimentary understanding of the technology, as well as a plan that details the work tasks, deliverables, responsibilities, and critical path for the project.

Week 3 (May 5): Initial Prototype Development

Week three is the first week where that teams have to design and build a robot to solve a mission. Essentially, teams will start executing their project plan by working towards completion of a single mission by end of week.

Week 4 (May 12): Implementation: Code-Integrate-Build-Test Cycles

The fourth week will be the primary development week, marked by the development and integration of a larger number of challenge solutions. The team will be executing their project plan, coding, building, and testing their project.

Week 5 (May 19): Final Competition

The main event of the last week is a major competition, in which all teams compete to earn points that go towards their final mark. At the start of the week they will work to perfect and finalize their projects.