A POLYTECHNIC INSTITUTION

School of Computing & Academic Studies
Program: Part-time Studies

Course Outline
COMP 2825
Computer Architecture

Start Date:	2008-04-16				**End Date:**	2008-07-02			
Total Hours:	48	**Total Weeks:**	12		**Term/Level:**		**Course Credits:**	4.0	
Hours/Week:	4	**Lecture:**	3.5	**Lab:** n/a	**Online:**	0.5			

Prerequisites

Course No.	Course Name
COMP 1409	Introduction to OO Programming
COMP 1451	Understanding Programming

COMP 2825 is a Prerequisite for:

Course No.	Course Name
	(n/a)

Course Description:

This updated course replaces COMP 2720 in Part-time Studies. Developers and IT professionals are shown how to evaluate competing computer system architectures and build performance into their systems and software applications. The features of modern microarchitectures such as pipelining, cache memory, branch prediction, and out-of-order execution are discussed. Students will also compare and evaluate hardware architectures from the Intel Pentium and Sun UltraSPARC CPU families. Topics include: switching technologies, error correction, I/O devices, digital logic, arithmetic and memory circuits, and instruction sets. Successful participants in this course will develop skills to help them understand, evaluate and recommend appropriate computer system architecture for a specific application.

Evaluation

Assignments (2)	20%	Comments:
Quizzes (6)	20%	
Midterm	30%	
Final Exam	30%	
TOTAL	100%	

■ Course Learning Outcomes/Competencies

Upon successful completion, the student will be able to:

- Explain the basic concepts and terminology related to Computer Architecture and Organization.
- Discuss and compare modern machine architectures.
- Understand computer hardware.
- Explain and describe the characteristics of CPU architectures currently in use.
- Understand and explain each level of computer organization: digital logic level, microarchitecture level, instruction set architecture level and assembly language level.
- Solve problems related to the design of each level.
- Evaluate modern computers from the point of view of performance

■ Verification

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

Sean Nelson	2008-02-18
Authoring Instructor	Date

I verify that this course outline has been reviewed.

Kevin Cudihee	
Program Head/Chief Instructor	Date

I verify that this course outline complies with BCIT policy.

Kim Dotto	
Dean/Associate Dean	Date

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

■ Instructor(s)

E-mail Address: sean.2005@shaw.ca Phone number: (604) 438-2543

■ Learning Resources

Required:

Structured Computer Organization, 5th Edition, A.S. Tanenbaum, Prentice Hall, 2005

■ Assignment Details

Assignments, exercises and presentation material will be available in the BCIT “Share Out” folder.

From on-campus systems at: **J:\COMP\2825**

Via the Internet at: **ftp://share.bcit.ca/out/COMP/28**25

■ Information for Students

By attending this course and receiving this course outline, you have been made aware of the following policies. Please follow the links provided as each student is responsible for reading and complying with these policies.

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/files/pdf/policies/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.

The School of Computing and Academic Studies expects the highest level of professional conduct and ethical behaviour from all students enrolled in part time studies courses and programs. All students are reminded of the BCIT policy related to the *Responsible Use of Information Technology*. Read the full policy here: http://www.bcit.ca/files/pdf/policies/3501.pdf.

The Computing and IT knowledge and skills acquired by students in the course of their studies confers upon them, as with all professionals, a special responsibility to use their knowledge in a responsible, professional and ethical manner. Further, given that misuse of computer facilities at BCIT can have significant legal and/or economic impacts, upon evidence of any such misconduct, the School may recommend immediate suspension, even for first offences.

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.

Accommodation:
Any student who may require accommodation from BCIT because of a physical or mental disability should refer to BCIT's Policy on Accommodation for Students with Disabilities (http://www.bcit.ca/files/pdf/policies/4501.pdf), and contact BCIT's Disability Resource Centre (SW1-2300, 604-451-6963, http://www.bcit.ca/drc/) at the earliest possible time. Requests for accommodation must be made to the Disability Resource Centre, and should not be made to a course instructor or Program area.

Any student who needs special assistance in the event of a medical emergency or building evacuation (either because of a disability or for any other reason) should also promptly inform their course instructor(s) and the Disability Resource Centre of their personal circumstances