



DEPARTMENT OF SCIENCE

COURSE OUTLINE – FALL 2012

CS2290 – COMPUTER ORGANIZATION AND ARCHITECTURE I – 3 (3-0-3) 90 HOURS

INSTRUCTOR: Libero Ficocelli

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OFFICE HOURS: TBA

PREREQUISITE(S)/COREQUISITE: CS1150

REQUIRED TEXT/RESOURCE MATERIALS:

Assembly Language for x86 Processors, 6th Edition
By Kip R. Irvine, Pearson Publishing,
ISBN 0-13-602212-X

CALENDAR DESCRIPTION:

General introduction to number representation, architecture and organization concepts of von Neumann machines, assemble level programming, exception handling, peripheral programming, floating point computations and memory management.

CREDIT/CONTACT HOURS: 3 (3-0-3) 90 Hours

DELIVERY MODE(S): In class lecture

OBJECTIVES (OPTIONAL):

TRANSFERABILITY: University of Alberta, University of Calgary, University of Lethbridge, Athabasca University, Augustana Faculty (University of Alberta), Grant MacEwan University

GRADING CRITERIA:

** Grade of D or D+ may not be acceptable for transfer to other post-secondary institutions.

GRANDE PRAIRIE REGIONAL COLLEGE			
GRADING CONVERSION CHART			
Alpha Grade	4-point Equivalent	Percentage Guidelines	Designation
A⁺	4.0	90 – 100	EXCELLENT
A	4.0	85 – 89	
A⁻	3.7	80 – 84	FIRST CLASS STANDING
B⁺	3.3	77 – 79	
B	3.0	73 – 76	GOOD
B⁻	2.7	70 – 72	
C⁺	2.3	67 – 69	SATISFACTORY
C	2.0	63 – 66	
C⁻	1.7	60 – 62	
D⁺	1.3	55 – 59	MINIMAL PASS
D	1.0	50 – 54	
F	0.0	0 – 49	FAIL
WF	0.0	0	FAIL, withdrawal after the deadline

Students are cautioned that it is their responsibility to contact the receiving institutions to ensure transferability

EVALUATIONS:

Lab/Homework	
Assignments	30%
Class Quizzes	10%
Midterm	25%
Final Exam	35%

STUDENT RESPONSIBILITIES:

- The Student must pass the theory/concepts portion of the course in order to obtain a passing grade for the term. In other words a student must obtain 50% out of a possible 70 points - which includes all components except the lab assignments.
- No late project assignments will be accepted. The student is responsible for adhering to all requirements as specified for each project assignment.
- When necessary lab time may be utilized for lecturing on specific Java features. The remainder of the lab time will generally be used as "hands-on" programming time.

STATEMENT ON PLAGIARISM AND CHEATING:

Refer to the Student Conduct section of the College Admission Guide at <http://www.gprc.ab.ca/programs/calendar/> or the College Policy on Student Misconduct: Plagiarism and Cheating at www.gprc.ab.ca/about/administration/policies/**

**Note: all Academic and Administrative policies are available on the same page.

COURSE SCHEDULE/TENTATIVE TIMELINE:

Introduction to Computer Architecture:

- Microprocessor and computer architecture
- Operations and operands of computer hardware
- Representing instructions

Number systems and Arithmetic

- Signed and Unsigned Numbers
- Addition and Subtraction
- Logical Operations
- Constructing an Arithmetic Logic Unit
- Multiplication and Division
- Floating Point numbers

80x86 Assembly

- Overview of 80x86 assembler (segments, registers and organization)
- Program structure
- I/O operations
- Data movement instructions
- Conditionals and Branching instructions
- Arrays
- Macros and Procedures
- Interrupts
- String processing
- Video operations (text and graphics)
- Parameter passing and stack operations