



DEPARTMENT OF SCIENCE

COURSE OUTLINE – FALL 2014

EG1050 – ENGINEERING DESIGN – 3.8(3-0-2)UT

INSTRUCTOR: Tanvir Sadiq, Ph.D., P.Eng. **PHONE:** 780.539.2865
OFFICE: J 209 **E-MAIL:** TSadiq at gprc dot ab dot ca

OFFICE HOURS: TBD or By Appointment

PREREQUISITE(S)/COREQUISITE: None

RECOMMENDED TEXT/RESOURCE MATERIAL: (i) *MATLAB: An Introduction with Applications* by A. Gilat, 5th Edition, Publisher: Wiley. Available in traditional and e-book format. Rental option available as well.
(ii) MATLAB[®] Student Version. Cost around \$100.
Available from http://www.mathworks.com/academia/student_version/ or through GPRC bookstore.

CALENDAR DESCRIPTION: This is computer programming for solving engineering problems. Structured programming in MATLAB is included.

CREDIT/CONTACT HOURS: 3.8(3-0-2) UT

DELIVERY MODE(S): Lectures/Seminars, Labs

OBJECTIVES (OPTIONAL): This course is designed to teach engineering students basic computer concepts and terminologies as well as to develop proficiency in MATLAB programming to solve engineering problems. Each student is expected to design and develop several well-structured programs as solution to given assignments.

TRANSFERABILITY: UA, UL, AU, Augustana, CUC, KUC

** Grade of D or D+ may not be acceptable for transfer to other post-secondary institutions. Students are cautioned that it is their responsibility to contact the receiving institutions to ensure transferability

GRADING CRITERIA:

GRADING CONVERSION CHART – This is a general guideline only.			
Alpha Grade	4-point Equivalent	Percentage Guidelines (General)	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

EVALUATIONS:

Midterm	30%	(Tuesday October 28, 2014, 5:00 p.m.)
Final Exam	35%	(Time & Location TBA by Registrar’s office)
Assignments/Quizzes*	10%	
Labs – assignments, exam/project**	25%	(Attendance Required)

Your final course grades will be announced by the Student Services. Grades/Marks will NOT be disclosed by email or telephone.

*There will be a quiz based on assignment material on the assignment due date. Some quizzes may not be announced in advance. Missed quizzes cannot be made up. Minor (up to 10%) adjustments may be made to the weights of assignments and quizzes at the discretion of instructor.

**There is 10% penalty for each day an assignment or project is late. Late work will not be accepted after the submissions have been graded and returned to the class.

NOTE: MIDTERM EXAMINATION MISSED FOR ANY REASON WILL NOT BE RESCHEDULED. Students not writing the midterm exam, with a valid excuse (as defined by College policy) will have the midterm weight added to the final exam. This is not automatic, and if you miss the midterm, you should follow all College guidelines and contact your instructor as soon as possible.

STUDENT RESPONSIBILITIES: Students are expected to attend all classes. If you miss a class, make arrangements to copy the notes from your class fellows. If you are using older edition of the textbook, you are responsible for matching page numbers, topics, figures, and problems with the editions being used in the class. You are encouraged to ask questions, but do not monopolize the class 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.

SYLLABUS AND COURSE SCHEDULE:

This schedule is subject to change without notice at the discretion of the instructor.

Week	Subject	Assignment
1	Course outline -Introduction to course goals. Introduction - History of computers Using MATLAB, MATLAB Environment, Simple programs	No lab
2, 3	MATLAB Fundamentals –variables, workspace, operators, repetition, conditional programming, input/output	Assignment 1
4	Program Architecture, Design, Development. Built-in Functions	Assignment 2
5, 6	Logicals. Matrices & Arrays, Matrix Operations, Linear Equations. M-Files, Debugging M-files	Assignment 3
6	MIDTERM EXAM	
7	Loops. Errors	Assignment 4
8	Graphics 2D, Graphics 3D	Assignment 5
9	Arrays & Structures, Cell Arrays, Sorting, Classes and Objects.	Assignment 6
10	Applications – Dynamical Systems	Assignment 7
11, 12	Simulation Numerical Methods: Equations, Integration, Differentiation, ODE, PDE	
13	Syntheses of all we have learned. Review and preparation for the Cumulative Final Exam	No Lab