



ECE 492 Computer Engineering Design Project

Winter 2018 - January 08 to April 13

Class time: Tuesday, Thursday 08:00-09:20

Location: ETLC E1008

Instructor:

Duncan Elliott, PhD, PENG
(780)492-5357
duncan.elliott@ualberta.ca
Donadeo Innovation Centre For Engineering 11-281
Office Hours: multiple: ualberta.ca/~delliott/#officehours

Course Description:

*4 (fi 8) (either term, 3/3-0-6) Design of microprocessor systems, input/output systems, programmable timers, address decoding and interrupt circuitry. This course has a major laboratory component and requires the design and implementation of a microprocessor-based system.

Prerequisites: ECE 315 or CMPE 401, and ECE 410 or CMPE 480. Credit may be obtained in only one of CMPE 450, 490, or ECE 492.

TA Information:

Questions to <https://eclass.srv.ualberta.ca/mod/forum/view.php?id=2450764>

Nancy Minderman, lab instructor, 780-492-7309, ETLC 3-012
Wing Hoy, co- lab instructor, 780-492-6217, ETLC E4-010
Raza Bhatti, co- lab instructor, 780-492-6217, ETLC E4-010
Michael Wong, TA
Brendan Bruner, TA
Rick McGregor, ECE Stores Technician, 780-492-2075, ETLC_3-012

Lab Sections:

Section	Day	Time	Location
LAB H11	Monday	14:00 - 16:50	ETLC E3011
LAB H51	Friday	14:00 - 16:50	ETLC E3011

Course Objectives & General Content:

In this senior capstone design project course, working in teams, students further develop their design skills by creating a project of their choosing, involving programming, interfacing, and digital or analog electronics. Five reports and two oral presentation are delivered. The final presentation includes live demonstrations of prototypes to industry representatives, public and peers.

Marking Scheme:

Activity	Due/Scheduled	Weight
Labs	Due weeks 2,3,4	8%
Meeting minutes	Due weekly	5%
Proposal	2018-1-22	7%
Specification	2018-2-5	10%
CDR Presentation	2018-2-13,15	10%
Progress Report	2018-3-5	10%
Final Presentation	2018-4-12	20%
Final Report	2018-4-13	20%
Application Notes	2018-4-13	10%

The Faculty recommended grade point average for a 400 level course is 3.1. Instructors have the leeway to deviate from this average and can assign grades based on their own scheme. All grades are approved by the department chair (or delegate). The office of the Dean has final oversight on all grades.

Term Work

All term work solutions will be posted no later than the last day of classes. All term work will be returned to students by the final day of classes, with the exception of major term work due in the last week of classes. The latter will be returned by the day of the final examination or the last day of the examination period if there is no final examination in the course as per university policy; instructors will make accommodations to return these term work. It is the responsibility of the student to pick up all their term work at the specified time and place. Any unreturned term work, shall be retained and then shredded six months after the deadline for reappraisal and grade appeals. Final examinations will be kept for one year as required by university guidelines and the Government of Alberta's Freedom of Information and Protection of Privacy Act.

Calculator Policy

Approved programmable or approved non-programmable calculators are permitted in examinations. Any calculator taken into an examination must have a sticker identifying it as an acceptable programmable calculator (green sticker) or non-programmable calculator (gold sticker). Students can purchase calculators at the University Bookstore with the stickers already affixed. Calculators purchased elsewhere can be brought to the Dean's Office where the appropriate sticker will be affixed to the calculator.

Text and References (Mandatory):

none

Text and References (Recommended):

none

Website:

eClass

Previous Examples of Evaluative Materials:

There are no examinations.

University Policies:

Policy about course outlines can be found in Course Requirements, Evaluation Procedures and Grading of the University Calendar.

The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Code of Student Behaviour (online at www.governance.ualberta.ca) and avoid any behaviour which could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

Audio or video recording, digital or otherwise, of lectures, labs, seminars or any other teaching environment by students is allowed only with the prior written consent of the instructor or as a part of an approved accommodation plan. Student or instructor content, digital or otherwise, created and/or used within the context of the course is to be used solely for personal study, and is not to be used or distributed for any other purpose without prior written consent from the content author(s).

Only those items specifically authorized by the instructor may be brought into the exam facility. The use of unauthorized personal listening, communication, recording, photographic and/or computational devices is strictly prohibited. Students should refrain from bringing any unauthorized electronic device into an examination room, including cell phones, high tech watches, high tech glasses or other such devices.

Learning Outcomes:

By the end of this course, students should be able to:

1. Manage project schedules
2. Manage project budgets
3. Qualitatively and quantitatively assess the feasibility of a proposed design prior to implementation
4. Manage and integrate components of a complex project through multiple revisions
5. Prototype software and hardware systems
6. Document a design
7. Perform testing at multiple levels and characterize
8. Design

Did you know that the University of Alberta has various low-to-no-cost services to help students succeed? Visit <http://www.deanofstudents.ualberta.ca/> for information about the academic, wellness, and various other support services available to U of A students. It's never too early or too late to seek help!