

EE Capstone Design: EE400 (Fall) and EE401 (Winter)

Academic Year: 2011-2012

The University policy regarding course outlines can be found in §23.4(2) of the University Calendar.

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Contact information for further course personnel, including the course technician and the Graduate Teaching Assistants may be found on the course web page.

www.ece.ualberta.ca/~ee401

EE400

Lecture X01: ETLC E1-017, Tuesdays 17:00 – 17:50

Lab: ETLC E3-001, M (X02), T (X03), W (X04), R (X05) 14:00-16:50

EE401

Lecture B1: TBA, Wednesdays 12:00-12:50

Lab: ETLC E3-001, M (H1), T(H2), W(H3), R (H4), 14:00-16:50

Document Organization

This syllabus presents information relevant to the Electrical Engineering Capstone Design Project, including both EE400 (Engineering Design Project I) in the Fall Term, and EE401 (Engineering Design Project II) in the subsequent Winter Term. Please note, however, that the *details of EE401 provided here are preliminary only and are subject to change prior to the commencement of the Winter Term*. Revisions will be communicated at the start of the Winter Term.

This document is organized in a top-down sequence: administrative items are addressed first, followed by a general description of the courses and followed by specifics.

The course website is used to provide additional resources and information:

www.ece.ualberta.ca/~ee401

Recording of Lectures

Recording is permitted only with the prior written consent of the professor or if recording is part of an approved accommodation plan.

Plagiarism

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.ualberta.ca/secretariat/appeals.htm) 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. Further, as students in a professional degree program, you are bound by the code of ethics established by the governing body, in this case APEGGA. This code of ethics can be found at www.apegga.org/pdf/Guidelines/GuidelineEthical.pdf.

The Capstone Design Courses are potentially volatile ground for what may be considered plagiarism. Since a healthy design process involves an extensive literature and product review, it is important to ensure that you appropriately attribute all sources of knowledge that is not considered common. These attributions are to be in an IEEE form, described below, and *must* be included *even in draft work*: since attribution is so important, it should be included even during the first stages of drafting documents. *Submitting unattributed (or otherwise plagiarized) work to your group is unacceptable and is considered an infraction under the Code of Student Behaviour*. Be aware that work submitted by a group is attributable to the entire group, and if plagiarism is suspected, all group members are held to account.

According to University and Faculty Policy, if instructional staff *suspects* plagiarism has occurred, they are *required* to report the suspicion to the Dean's office.

Citations, References, and Sources

The Capstone Design Courses require the use of the IEEE citation style. There are many online sources of information and examples of this format, including

www.ucalgary.ca/lib-old/subjects/ENGG/IEEE_Citation_Style_Guide.pdf

library.rit.edu/userservices/pubschol/IEEEGuidelines.pdf

Please note that a full, correct citation involves both the description of the reference itself (the bibliography entry) and a citation number.

Note that when you access a paper publication through the Internet, it is considered a “Print Document”. For example, if you access a conference paper via the Internet, the bibliographic entry should adhere to that of a conference paper rather than as an electronic document. The citation number is allocated according to citation order, and the bibliographic entry appears in a “References” section found at the end of the document. Throughout these courses, this reference section is included in page count limitations, if such a limitation is communicated.

The number of sources used by a document depends on things such as writing style, research depth, and the nature of the project itself. Too few citations indicates a lack of appropriate research, and too many can indicate a problem such as citing knowledge which is common (to your peers) or not selecting the best source.

Since most papers have a top-down organization wherein Background Information to orient the reader is located close to the start of the paper, most citation numbers are usually located relatively early in the document. Although this may seem awkward the first few times you create a document of this nature, review of most literature indicates this is normal practice.

Extreme caution must be used when dealing with the Internet – corporate and institutional web sites are usually quite reliable sources of information; however, other sites can be significant sources of misinformation. The project should use Internet sources only to supplement other sources. (Basing your project solely upon a schematic and program from a mysterious source on the Internet is both poor engineering and very risky - many have done this and most have met with unpleasant surprises!)

Policies for Late or Missed Work

Work submitted late is subject to a 20% deduction per business day or portion thereof late, unless otherwise noted as the term progresses (certain deliverables are more time-sensitive than others due to the time of year or the purpose of the submission).

Your instructor is not in a position to determine the validity of reasons for missing or late work. As a result, missed work will receive a mark of 0%, and late work will receive the described penalty, unless directed otherwise as part of 23.4(3) of the Academic Regulations, provided in the calendar: “Any student who is incapacitated because of illness, is suffering from severe domestic affliction or has other compelling reasons (including religious conviction) may apply for an excused absence for missed term work. Students should consult their Faculty for detailed information on requirements.” However, please keep in mind that since much of the work is completed in a group, it is expected that the rest of the group will make effort to accommodate the delayed work by individuals in the group.

Students are responsible for the material covered in lectures. If you plan on missing (or do miss) a lecture, please communicate with one of your classmates to determine what was covered.

Policy for Readdressing Marked Items

If you have concerns regarding the mark assigned to submitted work, please follow these steps as soon as possible after receiving the marked item:

1. Describe, in a signed and dated note, what your concerns with the evaluation of the item are, and what you believe is a reasonable solution to this concern.
2. Prepend the note to the work in question and the mark sheet or rubric used to communicate the original grade.
3. Submit the package to the course submission box outside of the ECE General Office. If the submission box is not available (after the term is completed, for instance), please deliver to the administrative assistant in the ECE General Office and ask to have it placed in the instructor's mailbox.

Please note that the instruction team reserves the right to re-evaluate (or coordinate re-evaluation of) all aspects of the entire evaluation item. Further information (and further steps in an appeal procedure) can be found in Section 23.4.3(4) of the University Calendar.

Policy for Email Communications

Email communication from course personnel will originate from- and be sent to only University of Alberta (@ualberta.ca) or Electrical and Computer Engineering (@ece.ualberta.ca) email addresses. These email services are relatively reliable, their use is consistent with the [20.3 Electronic Communication Policy](#).

Your name, as attached to the above account(s) must be full and correct, otherwise you risk having messages rejected or ignored.

Please be aware of the details of the user agreements under which third-party email systems operate: these details may make you reconsider their use for work- and school-related communication.

Text

There is no text for these courses due to the varied nature of the projects. The course website, however, is referred to in the lectures and is a reasonable starting-point for many tasks. Further, the library has several books that cover a generalized Engineering Design approach.

Lab Books

A hard-covered lab notebook with non-perforated pages is required for you to keep design notes, meeting minutes, and an overall record of your project activities. These books are to be submitted at the end of the terms. Lab book entries are to be written in pen on numbered pages (numbering the pages yourself in pen is acceptable). Leave no pages blank when recording information in sequence. Using a lab book that has material from other courses is acceptable, as long as the Design Course receives a dedicated section wherein all the information is kept together. (Please be aware, too, that you will be without your lab books for approximately 2 weeks toward the end of the academic terms.) On submission, please flag the location of the relevant material in the book.

Lab books form an important medium for the recording of design decisions, meeting minutes, and research. Although these notes are primarily for your use, they can be used as part of legal

proceedings, and so should be kept well-organized and maintained. Verbose discussions are welcome in the Lab Books, where some other submissions emphasize conciseness.

Course Grades

As of September, 2003, the University of Alberta uses a (4-point) letter-grading scheme. Grades for both EE400 and EE401 are assigned under this system and are guided by the Faculty of Engineering's suggested distribution for a fourth-year course.

Correction of Feedback from Multiple Evaluators:

In situations where an evaluator marks an item for a (statistically significant) portion of the class, the mark is corrected using the approach outlined, below. An example where the need for correction arises is when multiple GTAs are asked to grade lab books, each responsible for a subset of the class, or when presentation judges/evaluators provide feedback for only, say, a quarter of the presenting groups.

The correction algorithm is a linear transformation of an individual evaluator's marks to a class-wide average and standard deviation:

1. the individual evaluator's average mark and standard deviation are calculated;
2. the 'distance' (in number of standard deviations) of a specific mark from the evaluator's average is determined;
3. this 'distance', along with a class-wide (predetermined) average and standard deviation, is used to calculate the 'corrected' mark.

As an example, suppose that you have received a grade of 65% from an individual evaluator who, across all items that she marked, had an average of 55% and a standard deviation of 5%. The 'distance' of this mark from the evaluator's average is $(65-55)/5 = +2.0$ standard deviations. Based upon an analysis of the class's performance in other items, the instructor chooses the class-wide average and standard deviation of this item to be 75% and 10%, respectively. The corrected mark you receive for this item has the same 'distance' as before, +2.0 standard deviations, although with the class-wide average applied: $75\% + 2.0 * 10\% = 95\%$.

By using this form of correction, differences in the magnitude of marks assigned by different evaluators are addressed; relative marks are emphasized, and class-wide calculations can proceed without you being rewarded or penalized for being evaluated by a specific person.

Documentation

Projects are marked primarily on execution and documentation of the various steps involved. Through documentation the details of planning and implementation will be apparent and is therefore a critical component of these projects. If a project fails to attain its objectives, but was planned, implemented, and documented well, it could be deemed a success - progress will have been made. Conversely, a project that meets objectives but is not well planned, implemented or documented could be deemed a failure. Please refer to the mark allocation and grading schemes for the specific courses for more information.

Ensure that your reports are readable and make sense to others.

Please make reports concise. Marks will be reduced for reports over the specified lengths. Conciseness is a skill that is well-received in industry.

Overall Capstone Course Description

These two courses (EE400 and EE401) form the Capstone Design Project for Electrical Engineers. Students are required to take these two courses in consecutive Fall/Winter terms in one academic year. In the courses, student groups design and build projects representative of those commonly encountered in industry. Application of practical and theoretical knowledge from prior courses is required. In the laboratory environment, these skills are confirmed and extended.

A project will typically be directed to solve a specific problem and is expected to involve:

- problem identification and description, including interaction with a client;
- analysis of existing methods and solutions;
- description of possible approaches to solving the problem;
- evaluation of the different approaches;
- selection of the approach, specification of goals, and determination of milestones;
- implementation of this plan with adaptations as required;
- documenting the evolution of the project; and
- testing, demonstrating, and presenting.

Nature of Projects

All projects require a client: someone who has a vested interest in having a project seen through to completion, and who is willing to interact with students as they develop requirements specifications and define scope. To help maintain a professional relationship, *family members or friends* of group members are not allowed to serve in the role as a client.

Projects may be in *any field of electrical engineering*, and must include a substantial design component. It is recommended that projects have an achievable implementation phase, insofar as budget, time, and manpower is concerned.

Project suggestions are provided by the instruction team close to the start of the term, but you are encouraged to arrange your own client and project – discussions with the instruction team will likely be warranted. In the event that a project is not within the realm of experience of the instruction team, it will also be necessary for you to also arrange a technical advisor. The responsibility of this individual, likely an academic, will be to provide you with feedback (perhaps including grading) and guidance.

Projects are loosely divided into paper-based design and implementation phases. It is possible that a project may proceed through the first phase and not into the second, as dictated by the outcome of a Critical Design Review (CDR).



There are many reasons why a project may not proceed into implementation, including

- a) not being practically implementable;
- b) requiring too large a budget;
- c) the existence of more than one paper design and only resources for one implementation;
- d) having too large or too small resulting scope;
- e) client preferences; and/or
- f) not having sufficient design detail.

The determination of which projects will proceed to implementation will be done via a panel consisting of the course instruction team, the technical advisor (if applicable) and, where possible, the client. The panel may choose to invite others that are in a position to provide meaningful feedback in the process. The material submitted as part of the CDR Presentation, and the CDR Presentation itself will be used to assist the panel. Deliberations will be held behind closed doors.

Please note that the manner by which groups are to be formed (discussed in the next section) allows for all projects to proceed to implementation if all prove to naturally accommodate the reasons outlined, above. Please note, however, that *it is a reasonable outcome of a comprehensive CDR* to not have a project proceed. CDRs are a substantial milestone in the development of a project that would allow the client to determine if she is willing to proceed to more costly implementation: if she is not, that is her right since she is the one paying the bill!

Conversely, the group formation method, described shortly, also accommodates a situation wherein some projects may not proceed to implementation.

Paper-Based Design Group Formation

Project group formation is a two-stage process.

1. In the first “Interviewed Adoption” phase, students are encouraged to locate their own projects, perhaps by negotiating with clients provided via a list compiled by the instruction team. In this phase, project “groups” may consist of 1-4 people. However, since program accreditation requires that projects be pursued in groups, a project that involves a single student must involve a situation wherein the student is working with part of a larger group. An example of this would be if a single student is working with a researcher on a part of a larger project that involves his or her research group. Please note that the requirement for substantial design stands in this situation. During this phase, which lasts approximately one week near the start of the term, the client may choose to form groups based upon an evaluation of aptitude and interest. Students, of course, must be willing to form the group.
2. If students do not form a group in the first phase, a second “Lottery Adoption” phase sees remaining students form groups of **3 individuals**. These groups are asked to rank their interest

in projects described in a list compiled by the instruction team. A lottery is held to assign the projects to groups, although the outcome of this lottery may be adjusted to make effective use of the instruction team's capabilities.

Approximately $\frac{3}{4}$ of the way through EE400, the Critical Design Review process will possibly require reallocation of group members so that all students participate in the implementation phase of a project. Should this be required, the size of implementation groups will be capped at four members per group.

Regardless of the phase in which a group is formed, **all members must be enrolled in the same lab section**. The primary motivation for this is that it guarantees instruction personnel have a fixed time to meet with groups, including for the Critical Design Review. This, of course, guarantees that your group can meet, too!

There are **many reasons to not form a group with your friends**. Experience has shown that friendships can be dramatically challenged by the nature of the courses. Being part of a group that emphasizes professional, business-like behaviour is important, and friendships can be an obstacle to this, perhaps in a group-context if not personally.

Instead, consider other approaches to forming your group:

- a) EE Program Option: members in the same option often have the same interests.
- b) Ensure that you collectively demonstrate mastery in the following areas:
 - I. system design relevant to the topic you are interested in;
 - II. hands-on skills, including perhaps mechanical assembly and soldering experience, or using the tools that will be necessary for you to complete your project;
 - III. document writing and preparation;
 - IV. presentation design and delivery; and
 - V. planning and coordinating.

All group members will be responsible for all topics listed in (b), above, but experience has shown that groups with a varied skill-set tend to work better together, in part due to the sharing of expertise at the group level. Further suggestions will be made as the course progresses.

Implementation Group Re-Formation

Groups who have projects that are approved by panel (described in “Nature of Projects”) to proceed from the paper-based design phase to the implementation phase via the Critical Design Review, will remain in the project’s implementation group.

Those groups, if any, that do not proceed from design to implementation are disbanded: the individuals become “free agents” that are expected to join an “implementing group” such that the resulting group has no more than four members in it. Implementing groups are expected to welcome new additions to their group in this situation. It is, again, suggested that this re-formation proceed under the advice given above rather than based upon friendships. As with the formation of paper-based design groups, the instructor may find it necessary to adjust membership in order to make effective use of course resources – intellectual and otherwise.

Resolution of Group Issues

The onus is on groups to resolve any internal issues that they encounter. Resources will be made available to assist with this as the year progresses. The process described in the next section, however, may serve as a *last-resort* tool to assist with severe problems.

Group Membership Changes

It is possible for the membership of a group to be internally adjusted in one of two manners:

1. *Firing*: this situation typically arises when a group member is negligent in fulfilling their responsibilities to the group. The group can collectively ask this person to leave the group (following the protocol outlined, below).
2. *Quitting*: this situation arises when a member of the group feels that they are "carrying" the rest of the group and desires to leave it. The individual can inform his/her group that they are leaving (once again following the protocol outlined, below).

In both cases, the departing individual is responsible for finding a new group with three or fewer individuals in the paper design phase, or four or fewer individuals in the implementation phase to accept them. The instructor, however, must approve this change in order to maintain laboratory organization and to ensure that project scope changes, if required, are possible. Failure to find a new group to join will result in marks of 0 being allocated to remaining work, which, in turn, will likely result in course failure, and the need to take the courses again.

Group membership changes are not to be considered lightly. Both sorts of membership changes require a paper trail demonstrating that concerted effort was used to rectify the situation, and the approval of the instructor who is to be kept well-informed throughout.

In order to change group membership, the following protocol is to be used:

- If a team member is uncooperative, the group should first make concerted, traceable internal effort to rectify the situation. Conversations held between conflicting group members are encouraged but should be made traceable by following-up with a written (perhaps email) statement describing the contents of the conversation, distributed to all participating members.
- In the event that there is no internal resolution, the group is asked to notify the individual, by way of a written memo (copied to the instructor), that he or she is in danger of being released from the group. This memo is to describe the grievances, the manner by which the individual can remove themselves from the danger of release, and a date that the corrective action needs to be taken- or demonstrated by (a guideline is two weeks from the date the memo is issued). Upon receiving the memo, the instructor will request the written record of conflict-management, made in the last step. The instructor will attempt to mediate (or coordinate mediation of-) the situation during a meeting with the entire group and/or the individual alone, as deemed appropriate at the time.
- Within two working days of the passing of the deadline outlined in the warning memo, the cooperating group members are to submit a memo to the individual, copying the instructor, indicating whether or not the situation has been resolved. If the situation has not improved, this memo may release the individual, but only after approval by the instructor who will need to verify that release is logistically possible.

- Also within two working days of the passing of the deadline outlined in the warning member, the individual whose contributions were under question is also asked to submit a memo to the instructor indicating the corrective action that has been taken. Substantiation will be requested.
- In the event that the group released the individual, the memo submitted to the instructor in the last stage will be used to help the instructor determine the options that the released individual has at his or her disposal. The individual is asked to meet with the instructor or his representative.

You are encouraged to have the instructor review the memorandums prior to their transmission.

An analogous approach is used for an individual who is considering quitting a group due to lack of participation of the remainder of the group.

Please be aware that the instructor is more reluctant to approve membership changes occurring late in the project development cycle. Membership changes that have not been initiated prior to Reading Week in the current academic year are discouraged unless the situation is truly exceptional. It is suggested that you establish your project schedule in a manner that will test the group relationships earlier rather than later.

Organization of Course Personnel

Assigned GTA	Each group meets regularly with a Graduate Teaching Assistant (GTA or TA) assigned close to the start of the year. This TA is your primary contact for the course. Your course instructor meets with the TAs regularly and utilizes their services to pass information on to you. Picture the GTA as your immediate supervisor.
Course Technician	The course technician is responsible for maintaining lab infrastructure, manufacture of PCBs, and the ordering of parts. Although the technician's office is located in the EE Capstone Design Lab, please respect the posted office hours.
Course Coordinator	The course coordinator's role includes coordinating the course instruction team, communicating expectations, coordinating evaluation, and handling administrative duties.
Advisor	Your course advisor will also meet with your group. Once a project's scope has been established, changes need to be approved by your advisor. Depending upon the magnitude of the change, scope changes will be coordinated through the use of an Engineering Change Order (ECO). Please contact your advisor for more information regarding ECOs.
GTAs	When not involved in group meetings, GTAs are available to provide guidance. Please, however, see the note below. Note that GTAs are intentionally selected to have a variety of strengths. One GTA, for instance, may be excellent in Controls, and another in VLSI.

Note: course personnel are encouraged to provide guidance by suggesting methods to approach a problem, not by solving the problem itself. The onus of solving the problem is on you and your group, much as it would be in the workplace.

Additional people or roles of people involved in your project will include:

Client	The person (or group) that would like to have the project designed, and possibly implemented. Clients are inherently provided by some of the project suggestions (made available as the term progresses), or can be located by you. Some clients have an idea, but no knowledge about the realm of solutions. These can come from any walk of life, but they need to understand that you are learning (solutions are not guaranteed), that they must be available for interaction during project definition, the evaluation of the design (CDR), and at delivery. Please, no family members or friends for this role, as mentioned previously. <i>Expert clients</i> are those that have an idea and have knowledge about what a solution might look like. They can be challenging to deal with, depending on their conviction, but can often also serve as a technical adviser.
Technical Advisor	This is a person (or group) that can provide you and your group with advice that will help you find a reasonable solution to the design problem. In some cases, the GTAs, the technician, and the course instructor can serve as technical advisers. However, if your project is outside the typical domain of competence of these individuals, then another technical advisor may be required for your project.

Project Intellectual Property

Often when working with a client who has originated an idea, the Intellectual Property (IP) of the project will reside with him or her. This means that the Design IP – what you create and flesh-out through these courses – will be their property, and theirs to use as they see fit. If you are not comfortable entering into this arrangement, then you may choose or locate a project that explicitly assigns the IP to you.

Further, when you locate a project (and project's client) yourself, please ensure that the client understands that public disclosure is required as part of the course. If this is an issue for the client, then the project is likely not a good candidate for being addressed as part of EE Capstone Design.

Permissions

Varying types of permissions are asked of you for differing reasons. This section outlines some of them.

Permission to Publish

As you can probably imagine, an open-ended course of this nature sees many creative ideas put onto paper. Some of these are potentially publishable. Your instructor will ask groups for permission to take some of your course work, rework it, and submit it for publication. Your name will be retained on the submission, meaning you will be a published author on its acceptance.

Permission to Post/Share

Toward the end of the design and implementation stages of project development, your group will be approached to see if you will be willing to have some project details posted on the course website for archival and demonstration purposes.

Permission to Use Photos

The course instruction team keeps track of students and groups via a database that has the provision for photographs. Photographs collected under this permission are deleted after the course has completed. While in use, they help the instruction personnel identify students and groups.

Implicit Permissions

There is the odd situation that involves implicit permission by voluntary involvement. For instance, some projects for industry requires that groups post their designs on the company's website. By opting to select a project with that company, your permission to meet their requirements is implied.

EE 400: Engineering Design Project I

*2.5 (fi 6) (first term,1-0-3)

The first of two design courses that must be taken in the same academic year. Student teams research, propose, design, develop, document, prototype, and present a practical engineering system or device; teams exercise creativity and make assumptions and decisions based on technical knowledge. This first course includes project definition, planning, and initial prototyping. Formal reports and presentation of the project proposal is required. Corequisites: E E 350, 380.

EE 400: Mark Allocation

Each of the following items will be described in more detail as the term progresses. Please note the course schedule for the due dates.

Item	Weighting
Requirements Specifications	15%
Critical Design Review Presentation**	30%
Revised Design and Work Report ****	30%
Client Feedback*	10%
Lab Book Records*	15%
TOTAL:	100%

* - Individual Evaluation

** - Provision for Individual Evaluation; group-evaluated except in extenuating circumstances.

*** - Includes a component of individual-based evaluation.

All other items are group submissions, and the grade achieved on the item is assigned to all members of the group.

EE 401: Engineering Design Project II

*2.5 (fi 6) (second term,1-0-3)

The second of two design courses that must be taken in the same academic year, in which student teams develop an electronic system or device from concept to working prototype. Emphasis is placed on continued execution of the project plan developed in E E 400. Formal interim and final reports are required; groups demonstrate and present their designs. Prerequisite: E E 400 in the preceding Fall term.

EE 401: Mark Allocation (Preliminary)

Item	Weighting
Checkpoint Report I*	10%
Checkpoint Report II*	10%
Final Report	25%
Project Poster	10%
Final Presentation and Demonstration**	20%
Client Feedback*	10%
Lab Book Records*	15%
TOTAL:	100%

* - Individual Evaluation

** - Provision for Individual Evaluation; group-evaluated except in extenuating circumstances.

All other items are group submissions, and the grade achieved on the item is assigned to all members of the group.

EE 400 Schedule

EE 400 - Design Project I: Fall 2011 Major Due Dates					
Wk	M (X2)	T (X3)	W (X4)	R (X5)	F
1	05 Sep	06 Sep	07 Sep Term Begins Lab Closed	08 Sep Lab Closed	09 Sep Lab Closed
2	12 Sep Lab Closed	13 Sep Lab Closed	14 Sep Lab Closed	15 Sep Lab Closed	16 Sep Lab Closed
3	19 Sep Lab Orientation	20 Sep Lab Orientation Project Adoption Phase I Complete	21 Sep Lab Orientation	22 Sep Lab Orientation	23 Sep
4	26 Sep	27 Sep Ranking Sheets Due: Project Adoption Phase II Complete	28 Sep	29 Sep	30 Sep
5	03 Oct	04 Oct	05 Oct	06 Oct	07 Oct Requirements Specifications Due
6	10 Oct Thanksgiving Day University Closed	11 Oct	12 Oct	13 Oct	14 Oct
7	17 Oct	18 Oct	19 Oct	20 Oct	21 Oct
8	24 Oct	25 Oct	26 Oct	27 Oct	28 Oct CDR Slides Due
9	31 Oct Critical Design Revs.	01 Nov Critical Design Revs.	02 Nov Critical Design Revs.	03 Nov Critical Design Revs.	04 Nov
10	07 Nov Critical Design Revs.	08 Nov Critical Design Revs.	09 Nov Critical Design Revs.	10 Nov Remembrance Day Holiday University Closed	11 Nov Remembrance Day Fall Term Class Break University Closed
11	14 Nov Critical Design Revs.	15 Nov Critical Design Revs.	16 Nov Critical Design Revs.	17 Nov Critical Design Revs.	18 Nov
12	21 Nov	22 Nov	23 Nov	24 Nov	25 Nov
13	28 Nov	29 Nov	30 Nov	01 Dec	02 Dec
14	05 Dec	06 Dec Revised Design and Work Report Due Lab Books Due	07 Dec Last Day of Classes	08 Dec	09 Dec

EE 401 Schedule (Preliminary)

EE 401 - Design Project II : Winter 2012 Major Due Dates						
Wk	M (H1)	T (H2)	W (H3)	R (H4)	F	
1	09 Jan Classes Commence Lab Opens	10 Jan	11 Jan	12 Jan	13 Jan	
2	16 Jan	17 Jan	18 Jan	19 Jan	20 Jan	
3	23 Jan	24 Jan	25 Jan	26 Jan	27 Jan	Checkpoint Report I Due
4	30 Jan	31 Jan	01 Feb	02 Feb	03 Feb	
5	06 Feb	07 Feb	08 Feb	09 Feb	10 Feb	
6	13 Feb	14 Feb	15 Feb	16 Feb	17 Feb	
7	20 Feb University Closed Family Day Reading Break	21 Feb Reading Break	22 Feb Reading Break	23 Feb Reading Break	24 Feb Reading Break	
8	27 Feb	28 Feb	29 Feb	01 Mar	02 Mar	Checkpoint Report II Due
9	05 Mar	06 Mar	07 Mar	08 Mar	09 Mar	
10	12 Mar	13 Mar	14 Mar	15 Mar	16 Mar	
11	19 Mar	20 Mar	21 Mar	22 Mar	23 Mar	
12	26 Mar	27 Mar	28 Mar	29 Mar	30 Mar	Iron Ring
13	02 Apr	03 Apr	04 Apr	05 Apr Final Report Due	06 Apr University Closed Good Friday	
14	09 Apr University Closed Easter Monday	10 Apr	11 Apr Project Posters Due	12 Apr	13 Apr Last Day of Classes Lab Books Due	14 Apr Final Presentations/ Demonstrations/Poster Session: 9AM – 5PM