Graduation Composition and Communication Requirement (GCCR)
GCCR PROPOSAL AND CHANGE UNDERGRADUATE PROGRAM FORM

I. General Information:

College:	Engineering	Department (Full name):	Electrical and Computer Engineering
Major Name (full name please):	Electrical Engineering	Degree Title:	BSEE
Formal Option(s), if any:	———	Specialty Field w/in Formal Options, if any:	———
Requested Effective Date:	FALL 2014, ***IF*** RECEIVED BY SENATE COUNCIL BY MONDAY, APRIL 7.		
Contact Person:	Regina Hannemann	Phone: 7-5156	Email: regina.hannemann@uky.edu

II. Parameters of the Graduation Composition and Communication Requirement (GCCR):

The new GCCR replaces the old Graduation Writing Requirement. It is fulfilled by a course or courses specified within a B.A./B.S. degree program. As outlined in draft Senate Rule 5.4.3.1, the GCCR stipulates that students must successfully complete this requirement after achieving sophomore status and prior to graduation. To satisfy the GCCR, students must earn an average grade of C or better on the designated Composition and Communication (C&C) intensive assignments produced in any given course designated as fulfilling some or all of the GCCR. The requirements for GCCR courses include:

- at least 4500 words of English composition (approximately 15 pages total);
- a formal oral assignment *or* a visual assignment;
- an assignment demonstrating information literacy in the discipline;
- a draft/feedback/revision process on GCCR assignments.

The program requirements for the GCCR include:

- at least one specific Program Student Learning Outcome for C&C outcomes;
- a plan for assessing both the writing and oral *or* visual components of the GCCR;
- clear goals, rubrics, and revision plans for GCCR implementation.

Upon GCCR approval, each program will have a version of the following specification listed with its Program Description in the University Bulletin:

> *"**Graduation Composition and Communication Requirement.** Students must complete the Graduation Composition and Communication Requirement as designated for this program. Please consult a college advisor or program advisor for details. See also 'Graduation Composition and Communication Requirement' on p. XX of this Bulletin."*

III. GCCR Information for this Program (by requirement):

A. *List the courses currently used to fulfill the old Graduation Writing Requirement:*

EE 490

B. *GCCR Program Outcomes and brief description:*

1. Please specify the Major/Program Student Learning Outcomes (SLOs) pertaining to Composition & Communication and the GCCR requirement. These are *program* outcomes, not *course* outcomes. Please specify the program-level SLOs for C&C in your program:

An ability to communicate effectively.

2. Please provide a short GCCR description for your majors (limit 1000 characters): Please explain the GCCR requirement in language appropriate for undergraduate majors to understand the specific parameters and justification of your program's GCCR implementation plan:

The outcome will be evaluated in our senior design course EE 490. The students make a series of presentations, write reports (both team and individual), and present posters. The reports/presentations/posters are reviewed by a faculty team. In addition, individual

reports are peer reviewed. The poster presentations are open to all faculty, staff and students.

C. *Delivery and Content:*

1. Delivery specification: for your major/program, how will the GCCR be delivered? Please put an X next to the appropriate option. *(Note: it is strongly recommended that GCCR courses be housed within the degree program.)*	☒ a. Single required course within program
	☐ b. multiple required or optional courses within program
	☐ c. course or courses outside program (i.e., in another program)
	☐ d. combination of courses inside and outside program
	☐ e. other (please specify): _

2. Basic Course Information: Please provide the following information for course(s) used to satisfy the GCCR, either in whole or in part:

Course #1: Dept. prefix, number, and course title: EE 490 Electrical Engineering Capstone Design I

- new or existing course? existing (*new courses should be accompanied by a New Course Proposal*)
  - ☐ *if a new course, check here that a New Course Proposal has been submitted for review via eCATS*
- required or optional? required
- shared or cross-listed course? no
- projected enrollment per semester: 50-75 students (mix of electrical and computer engineering students)

Course #2 (if applicable): Dept. prefix, number, and course title: _____

- new or existing course? _____ (*new courses should be accompanied by a New Course Proposal*)
  - ☐ *if a new course, check here that a New Course Proposal has been submitted for review via eCATS*
- required or optional? _____
- shared or cross-listed course? _____
- projected enrollment per semester: _____

Course #3 (if applicable): Dept. prefix, number, and course title: _____

- new or existing course? _____ (*new courses should be accompanied by a New Course Proposal*)
  - ☐ *if a new course, check here that a New Course Proposal has been submitted for review via eCATS*
- required or optional? _____
- shared or cross-listed course? _____
- projected enrollment per semester: _____

3. Shared courses: If the GCCR course(s) is/are shared from *outside* the program, please specify the related department or program that will be delivering the course(s). Please provide the following:

- **Contact information of providing program:**

_____

- **Resources:** what are the resource implications for the proposed GCCR course(s), including any projected budget or staffing needs? If multiple units/programs will collaborate in offering the GCCR course(s), please specify the resource contribution of each participating program.

_____

- **Memorandum of Understanding/Letter of Agreement**: Attach formal documentation of agreement between the providing and receiving programs, specifying the delivery mechanisms and resources allocated for the specified GCCR course(s) in the respective programs (include with attachments).

Date of agreement: _____

4. Syllabi: Please provide a sample syllabus for each course that will be designated to fulfill the GCCR. Make sure the following things are clearly indicated on the syllabi for ease of review and approval (check off each):

- the GCCR assignments are highlighted in the syllabus and course calendar;
- the GCCR assignments meet the minimum workload requirements as specified by the Senate Rules for GCCR courses (see the draft Senate GCCR rule linked here);
- the elements are specified in the syllabus that fulfill the GCCR requirement for a clear draft/feedback/revision process;
- the grade level requirements for the GCCR are specified on the syllabus (i.e., an average of C or better is required on GCCR assignments for credit);

- the course or sequence of courses are specified to be completed after the first year (i.e. to be completed after completing 30 credit hours) for GCCR credit;
- the course syllabus specifies "This course provides full/partial GCCR credit for the XXX major/program"
  - if the course provides partial GCCR credit, the fulfilled portion of the GCCR must be specified and the other components of the GCCR for the program must be specified: e.g. "This course provides partial credit for the written component of the GCCR for the XXX major/program in conjunction with Course 2"

5. Instructional plan: Summarize the instructional plan for teaching the C&C skills specified in the program SLOs and delivered in the course(s). Include the following information in **brief** statements (200 words or less). Information can be cut-and-pasted from the relevant sample syllabus with indications **where** on the syllabus it is found:

- overview of delivery model: summarize how the GCCR will be delivered for **all** program majors: explain how the delivery model is appropriate for the major/program and how it is offered at an appropriate level (e.g. required course(s), capstone course, skills practicum sequence of courses, etc.):

This course is the first of a two-semester Capstone Sequence required for all Electrcial Engineering Students.

- assignments: overview or list of the assignments to be required for the GCCR (e.g. papers, reports, presentations, videos, etc.), with a summary of how these GCCR assignments appropriately meet the disciplinary and professional expectations of the major/program:

see extra file

- revision: description of the draft/feedback/revision plan for the GCCR assignments (e.g. peer review with instructor grading & feedback; essay drafting with mandatory revision; peer presentations; etc.):

see extra file

- other information helpful for reviewing the proposal:

see extra file

D. Assessment:

In addition to providing the relevant program-level SLOs under III.B, please specify the assessment plan at the program level for the proposed course(s) and content. Provide the following:

- specify the assessment schedule (e.g., every 3 semesters; biennially):

annual prior to start of fall semester (EE490 is taught in fall)

- identify the internal assessment authority (e.g. curriculum committee, Undergraduate Studies Committee):

Instructor Team and Directors of Undergraduate Studies for Electrical Engineering and Computer Engineering

- if the GCCR course(s) is/are shared, specify the assessment relationship between the providing and receiving programs: explain how the assessment standards of the receiving program will be implemented for the provided course(s):

N/A

Signature Routing Log

General Information:

GCCR Proposal Name (course prefix & number, program major & degree):	EE 490, Electrcial Engineering, BSE
Contact Person Name:	Regina Hannemann
Phone:	7-5156
Email:	regina.hannemann@uky.edu

Instructions:

Identify the groups or individuals reviewing the proposal; record the date of review; provide a contact person for each entry. On the approval process, please note:

- Proposals approved by Programs and Colleges will proceed to the GCCR Advisory Committee for expedited review and approval, and then they will be sent directly to the Senate Council Office. Program Changes will then be posted on a web transmittal for final Senate approval in time for inclusion in the Fall 2014 Course Bulletin.
- New Course Proposals for the GCCR will still require review and approval by the Undergraduate Council. This review will run parallel to GCCR Program Change review.
- In cases where new GCCR courses will be under review for implementation after Fall 2014, related GCCR Program Changes can still be approved for Fall 2014 as noted "*pending approval of appropriate GCCR courses.*"

Internal College Reviews and Course Sharing and Cross-listing Reviews:

Reviewing Group	Date Reviewed	Contact Person (name/phone/email)
Home Program *review by Chair or DUS, etc.*	2-14-14	Bill Smith / 7-1009 / william.smith@uky.edu
Providing Program *(if different from Home Program)*		/ /
Cross-listing Program *(if applicable)*		/ /
College Dean	3/23/14	Kimberly Anderson, Assoc Dean / 7-1864 / kimberly.anderson@uky.edu
		/ /

Administrative Reviews:

Reviewing Group	Date Approved	Approval of Revision/ Pending Approval[1]
GCCR Advisory Committee	3/26/2014	

Comments:

_____

[1] *Use this space to indicate approval of revisions made subsequent to that group's review, if deemed necessary by the revising group; and/or any Program Change approvals with GCCR course approvals pending.*

Section C5

Bullet 1 Overview

This course is the first of a two-semester Capstone Sequence required for all Electrcial Engineering Students.

Bullet 2 Assignments

1) Each student needs to keep a labbook to note all research, thoughts, ideas etc for the project. Labbooks are common in industry for this purpose and often will also be used for prove of Intellectual Property. (Written, Individual)

2) Each Student needs to write a research report related to their project of at least 1000 words and must include pictures, graphs and tables to explain their findings. (Written, Individual)

3) Teams need to submit two written project proposals (Written, Team)and also present their proposals in a formal presentation. (Oral, digital slides, Team)

4) Teams need to submit a written requirement report (Written, Team) and make a formal presentation on their project requirements. (Oral, digital slides, Team)

5) Teams need to submit a written Preliminary Design Report (PDR) (Written, Team) and make a formal presentation on their preliminary design. (Oral, digital slides, Team)

6) Teams need to present their design (with a poster) at the end of the semester. (Oral, Poster, Display of Project, Team)

7) Word counts on each student's individual work (homeworks, lab notebook and research paper) will be added to their individual written contributions for team-produced documents and presentations. Each student will contribute, in total, at least 4500 words for each project during the course. (Individual word count)

Bullet 3 Revision

For 1) above: The labbook is a "living" document. Students need to improve after each grading session.

For 2) above: The individual research reports go through a formal draft, peer review, final report sequence. Each individual report is peer reviewed by at least 2 other students. The instructors do final grading. Each individual report is reviewed by one instructor.

For 4) above: Presentation: each individual student must submit review notes for about half of all projects in that semester (total number between 8-15). These reviews are "bundled" together by the TA and sent to the teams.

For 3), 4), 5) above: (Reports) These documents build on each other. Most parts of the (selected) proposal will be included in the requirements report; the requirements report is part of the PDR (and that will feed into a report in the second

semester). Therefore there is, with each grading, an “automated” review for the next report built in. Two instructors review each report.

For 4) above: The PDR includes a draft version submitted to the instructors. Instructors review and return the PDR draft to the teams for final changes.

For 3), 4), 5) above: (Presentations) Students will get immediate feedback on their project during these presentations. This includes technical feedback as well as presentation feedback.

Bullet 4 Other Information

In engineering, reports are inherently multimodal. Reports with charts, tables and graphs are everyday communication tools. Block diagrams, flowcharts, decision tables, circuit graphs, etc. are needed to relay much of the information in a short and concise way to the audience.

Info for GCCR reviewers:

This syllabus will be submitted to the eCAT system in the next few days to incorporate a change in the Course Description. In this syllabus the old pre-req is canceled out and the new pre-req is inserted in magenta. We also added in the note that this course now covers the GCCR requirements (also in magenta.)

GCCR assignments and related topics are highlighted in yellow in this syllabus and in the accompanying schedule.

This syllabus has been submitted twice to the GCCR committee, once for the Electrical Engineering degree and once for the Computer Engineering degree. Each submission has been accompanied by the GCCR proposal form which took the differences in the degrees into account.

EE490 – Fall 2014
Electrical Engineering Capstone Design I
Syllabus

Instructor

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Office Hours:
T 9:30am - 11:00am
W 9:30am - 11:00am
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TA

Minghao Wang Office (for office hours, otherwise, contact him by email): TBD
E-Mail:
wmh199014@uky.edu
Office Hours:
TBD

Website and Mailing List

Blackboard will be used in this class. Blackboard is accessible through the "link blue" on the UK website.

Blackboard will be used as a mailinglist. All students are responsible to check their UK mail account on a regular basis (Once a day is recommended).

Text

1. Ralph M. Ford and Chris S. Coulston; "Design for Electrical and Computer Engineers"; McGraw-Hill; 2008; ISBN 978–0–07–338035–3

Lectures

TR (3:30–4:45 PM) Whitehall Classroom Bldg 238-CB

Course Description

The first semester of a two–semester capstone design sequence for senior students in electrical engineering with an emphasis on the engineering design processes. Topics important in product design and manufacturing are included, including considerations of economics, safety, and communication. Students are expected to formally propose a design project that includes a problem definition that incorporates engineering standards and realistic constraints. Students work in teams to develop and complete the designs. Lecture, two hours, laboratory, three hours per week.

This course provides full GCCR credit for BSEE and BSCOE.

old Pre-req~~Pre-req: Engineering standing and completion of all other required 400-level EE courses, excluding EE491.~~

suggested new Pre-req Pre-req for Electrical Engineers: Engineering standing and completion of at least 3 of the following classes: EE380, EE415, EE421, EE461, and EE468.

Pre-req for Computer Engineers: Engineering standing and completion of at least 3 of the following classes: EE/CS380, EE383, EE421, EE461, and EE/CS480.

Topics

Product Specifications
Project Planning and Management
Team Building
Engineering Economic Analysis
Concept Development and Selection for Product Design
Technical Communication, Written and Verbal
Design for Manufacturing
Product LifeCycle Design
Safety and Ergonomics
Product Liability
Patents and Intellectual Property
Computational Tools
Reliability and Statistics in Design

Outcome

1. Demonstrate good engineering judgement in the design process.
2. Develop project specifications and work plans for completing the design as a team.
3. Apply varied subject knowledge in electrical engineering to the solution of engineering problems requiring interdisciplinary efforts.
4. Identify and describe aspects of environment, safety, quality, cost, and contemporary issues in design.
5. Articulate the principles of teamwork.
6. Solve openended engineering problems, such as those where information is under–specified or over–specified, and where methodologies are not specified.

Class Content and Objective:

The content of Senior Design has two aspects (1) Engineering Design Theory and (2) Design Experience. A lecture series, coupled with sub-tasks and class discussion, covering Design Theory will be provided twice a week for most of the semester. The theory will detail the individual processes involved in going from a problem to be solved to a final Solution. Examples will be given and the design theory will be relevant to the project tasks. Another aspect of the design theory will cover group dynamics, which include brainstorming and mind mapping techniques. The Design Experience will be the goal of the students to implement their ideas into an operational system. System performance and its impact on society will also be part of the students experience.

Students enrolled in EE 490 will be grouped in teams of 4-6 students each. Each team will submit and present 1) two project proposals (one of these two will be the selected project for the team), 2) a Specifications and Requirements Report, 3) Preliminary Design Report (PDR), and 4) a Critical Design Report (CDR). The group will need to present to the class and the faculty advisors and should prove understanding of their project. **Some of the presentations will be conducted outside of lecture time. Failing to show deep understanding of project scope, specifications, testing routines, chosen approach etc. will prohibit the team to work on the next project phase until the group has proven to this understanding.**

Group Responsibilities: The class will be subdivided teams. Each group will submit a specification report for approval. The groups will define the test protocol that their projects will be tested with. The groups will define performance measures on which the projects will be graded. Each group will submit a preliminary design review report and present the status of the project. Projects will be graded on creativity, innovation, quality of construction and performance. The group size must be 4 to 6 members.

Individual Responsibilities: Each individual is responsible for designing, building and debugging their component of the project and for preparing a section of the team reports. Each individual is responsible for his/her own notebook. Each individual must prepare an individual research report.

Presentation: Each student will present, test and demonstrate their contribution to the design. As part of the subtasks, they will also present and demonstrate the

design at an organized competition or conference. All designs will be entered into the ECE Senior Design Day competition which is held the Friday before Finals Week, every semester.

Word counts on each student's individual work (homeworks, lab notebook and research paper) will be added to their individual written contributions for team-produced documents and presentations. Each student will contribute, in total, at least 4500 words for each project during the course.

Design Journal or Lab Notebook*

A design journal is the "diary" of intellectual contributions to your project. The journal can be used for legal purposes (described below), but is also an great resource for writing reports, having back–up solutions and simply help you keep track of work.The purpose of the Journal is to follow the required practices of industrial or academic research and development laboratories, where complete and accurate records of laboratory work are vital. The lab journal is a legally recognized paper that is essential in documenting project progress, discoveries, billable work time, and patent disclosures. Some companies require lab notebooks to be officially notarized and filed so that any legal questions later on can refer directly to the original, unaltered notebook entries. Even if you end up working for a company that does not require a notebook or journal, it is worth getting in the habit as a way to document your own work and to organize your development activities.

Required form: The pages of the Journal must be bound (not loose leaf or spiral) and should be numbered consecutively. The notebook entries must be in ink, and no pages should be left blank between entries. Begin the entries for each work day on a new page, giving the date and time, your name, the topic, and in the case of a meeting, the names of all of the people present. The entries themselves can be full of written comments, calculations, sketches, data tables, speculative ideas, brainstorms, design alternatives, contact information (email, phone, URLs, etc.), references to electronic files, schematic diagrams, and so forth.

In case some of the data or calculations written in the Journal turn out to be in error, do not tear out the page or completely obliterate the entries: a single line through the error is preferred. This way there is no question regarding the legitimacy and completeness of the notebook material. Furthermore, you will not be penalized in this course for having lined-out errors and corrections in your notebook.

Each student's Journal will be collected at least two times during the semester

(unannounced). Students are required to work in the notebook whenever they work on their projects. Students should be able to show their work in the journal at any time. The journals will be evaluated on the following criteria:

- Overall Form: Notebook bound, pages numbered, entries in ink, no blank pages between entries, entries for a new date start on a new page; writing legible; dates, times, topics, and names indicated clearly.
- Thoroughness: Cogent sequence of activities and meetings; presence of design ideas, data collection, data analysis, and schedule planning; examples of design results and conclusions.
- Creativity and Insight: Journal entries show a connection between initial ideas, preliminary activities and the resulting design and implementation decisions.

Self/Peer Reviews*

Personnel reviews are a part of project management responsibilities. You will be having regular reviews with your boss and will need to provide reviews of those you supervise. This is often a difficult — but necessary — thing to do. To give you some practice we are asking you to complete an evaluation form for yourself and your project partners. The grades you give to yourself and your project partners will be confidential and used solely by the course instructor. There will be three evaluations performed during the semester.

Report Format

The format of the reports and proposals will be discussed in class. The final form will be an amendment to this syllabus and handed out to the students in class and will be published on the class' webpage.

Assignments

There will be different assignments throughout the semester. These will help the students to train some of the skills they need to finish their projects with all deliverables. Assignments will be announced in class and/or via the class website. Assignments will be marked as team or individual work. No student is allowed to submit an individual work for a team assignment. All team members are responsible for team assignments.

Attendance

Attendance of all class lectures is required. Failing to attend lecture will result in a reduced attendance grade for the student.

Grade

	Team grade	individual grade
Project Specifications and Requirements	30%	
Preliminary Design	30%	
Assignments, Self/Peer Evaluations, Feedback from faculty advisor, attendance, individual presentations, Exam, Lab Notebook		35%
ECE Senior Design Day	5%	
Total	65% Team	35% Individual

For each student, if there is any curve in the final grade, none of the above individual parts of the final grade can be a failing grade without grade penalty. For a failing grade in any one of the individual parts, the final curved grade will be reduced by one letter grade. A failing grade in attendance and a failing grade in the lab book grade will reduce the final curved grade will be reduced by two letter grades.

To pass the course, students must earn an average grade of C or higher on Composition and Communication assignments (Labbook, individual research report, Project Proposals, Project Proposal Presentation, Requirements Report, Requirements Presentation, Preliminary Design Report, Preliminary Design Presentation, Poster Presentation at ECE Senior Design Day).

The final letter grade will be:

A: 90%–100%
B: 80%–89%
C: 70%–79%
D: 60%–69%
E: 59% or below

Classroom Behavior, Decorum and Civility

Students and faculty are expected to treat everyone present in the classroom with respect and civility. Disparate treatment will not be tolerated. Disparate treatment occurs when one or more persons treat an individual less favorably on the basis of their actual or perceived race, sex, age, color, national origin, religion, disability, veteran status, and/or sexual orientation. All interactions should be characterized by respect for, and consideration of, others present in the classroom.

Cheating and Plagiarism

Cheating — claiming another individual's work as your own or permitting another person to claim your work. **Plagiarism** — claiming another person's work, writing or ideas as your own. This includes material from the Internet or other digital media.

Cheating and plagiarism will not be tolerated at this university. Please check out the new (effective since Fall 2006) Academic Offenses Policy at
http://www.chem.uky.edu/research/grossman/acadoffenses/index.htm .

Classroom and Learning Accomodations

If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (Room 2, Alumni Gym, 257-2754, jkarnes@uky.edu) for coordination of campus disability services available to students with disabilities.

Announcements

Announcements such as homework assignments, required attendance, class cancellations, etc. will be made in class and/or via the Blackboard and /or via email. Check regularly for updates (recommended: email twice daily, Blackboard once a day).

EE490 – Fall
Electrical Engineering Design
Tentative Schedule

General/*F2013*

date	Topic	Deliverable
1 week before	*Homework (I):* Student Profiles *Homework (I):* Personality Type	
R *8 - 29* day 1	Introduction, Syllabus, Lect 1 *Book:* Chapter 1 "The Engineering Design Process" TA: take student pictures	HW due (I): Student Profiles HW due (I): Personality Type
F *8 - 30*	Publish Student Profiles	
T *9 - 3* day 2 day 2	Lect 2 *Activity:* Teams and Design Processes "Marshmallow Challenge" *Homework (I/T):* Team Selection	
R *9 - 5* day 3	Lect 3 *Book:* Chapter 9 "Teams and Teamwork" *Homework (I):* Re-read Chapter 9 *Homework (I):* Read Chapter Appendix B	HW due (I/T): Team Selection Forms (on paper during class time)
F *9 - 6*	Announce teams *Homework (T):* Develop Team Process Guidelines (chapter 9.4, 1st bullet can be ignored for now)	
T *9 - 10* day 4	Lect 4 example AHPs *Book:* Appendix B *Activity:* (Vacation Plan AHP) See Homework *Homework (T):* Project Selection Process (AHP) Select first and second choice project for team	HW due (T): Team Process Guidelines
R *9 - 12* day 5	Lect 5 *Book:* Chapter 2 *Homework (I):* Read Chapter 2 *Homework (I):* Read Chapter 3 *Homework (T):* Project Proposal time slots *Homework (T):* Project Proposal for 1st and 2nd choice projects	HW due (T): Project Selection Process (AHP)

[T]: Team Effort; [I]: Individual Effort

date	Topic	Deliverable
T *9 - 17* day 6	Q and A Session on Project Proposals	
R *9 - 19* day 7	Work in Teams (WIT)	
F *9 - 20*		*HW due (T):* Project Proposal
M *9 - 23*	Team Proposal Presentations 1.5 hours for three teams	
T *9 - 24* day 8	Team Proposal Presentations 1.5 hours for three teams *Homework (I):* Read IEEE Std 1233 *Homework (I):* Take Quiz on IEEE Std 1233	
W *9 - 25*	Announce Projects	
R *9 - 26* day 9	Lect 6 *Book:* Chapter 3 *Homework (T):* Team Logo and Name *Homework (T):* Fine Tune Problem Statement (chap. 2.7)	HW due (I): Quiz on Std 1233
T *10 - 1* day 10	Lect 7 *Book:* Chapter 3 *Homework (T):* Engineering Requirements	HW due (T): Team Logo and Name HW due (T): Problem Statement
R *10 - 3* day 11	Lect 8 *Book:* Chapter 4 *Activity:* Brainstorm *Homework (T):* Submit Brainstorming Notes *Homework (T):* PDR *Homework (I):* Self/Peer Review 1	HW due (T): Engineering Requirements
F *10 - 4*		HW due (T): Results of Brainstorming Activity
T *10 - 8* day 12	WIT *Homework (I):* Read Chapter 5	HW due (I): Self/Peer Review 1

[T]: Team Effort; [I]: Individual Effort

Date	Topic	Deliverable
R *10 - 10* day 13	WIT *Homework (I):* Individual Research Paper Request *Homework (I):* Read Chapter 12	
M *10 - 14*	*Homework (I):* Presentation Feedback	
T *10 - 15* day 14	Requirements Presentations Tuesday Group (Thursday Group: WIT)	HW due (T): Requirements Report HW due (T): Requirements Slides
W *10 - 16*		HW due (I): Individual Research Request
R *10 - 17* day 15	Requirements Presentations Thursday Group (Tuesday Group: WIT)	
T *10 - 22* day 16	Requirements Presentations Tuesday Group (Thursday Group: WIT)	
R *10 - 24* day 17	Requirements Presentations Thursday Group (Tuesday Group: WIT) *Homework (I):* Read Chapter 6	
F *10 - 25*		HW due (I): Presentation Feedback
T *10 - 29* day 18	WIT	HW due (I): Individual Research Paper draft version
R *10 - 31* day 19	WIT *Homework (T):* PDR *Homework (I):* Read Chapter 10	HW due (I): Individual Research Paper final version
T *11 - 5* day 20	WIT *Homework (I):* Self/Peer Review 2 *Homework (I):* Read Chapter 7	
R *11 - 7* day 21	Q and A PDR and Individual Research	HW due (I): Self/Peer Review 2

[T]: Team Effort; [I]: Individual Effort

Date	Topic	Deliverable
T *11 - 12* day 22	WIT	
R *11 - 14* day 23	WIT	HW due (T): PDR draft version
T *11 - 19* day 24	WIT	
W *11 - 20*	Return PDR draft to students	
R *11 - 21* day 25	WIT	
T *11 - 26* day 26	WIT	HW due (T): PDR final version
R *11-28*		*Thanksgiving*
M *12 - 2*	Team PDR Presentations (1/2 hour per team)	HW due (T): PDR Presentation Slides
T *12 - 3* day 27	Team PDR Presentations (1/2 hour per team) (non-presenters: WIT)	
W *12 - 4*	Team PDR Presentations (1/2 hour per team)	
R *12 - 5* day 28	Lect "Poster Presentations" *Homework (T):* Poster for Senior Design Day	
T *12 - 10* day 29	WIT *Homework (I):* Self/Peer Review 3	
W *12 - 11*		HW due (T): Poster
R *12 - 13* day 30	WIT	HW due (I): Self/Peer Review 3
F *12 - 14*	Senior Design Day (8am – 12pm)	Show parts of your design First Studies, Tests etc
11 – 16 Dec		Finals Week

semester). Therefore there is, with each grading, an “automated” review for the next report built in. Two instructors review each report.

For 4) above: The PDR includes a draft version submitted to the instructors. Instructors review and return the PDR draft to the teams for final changes.

For 3), 4), 5) above: (Presentations) Students will get immediate feedback on their project during these presentations. This includes technical feedback as well as presentation feedback.

Bullet 4 Other Information

In engineering, reports are inherently multimodal. Reports with charts, tables and graphs are everyday communication tools. Block diagrams, flowcharts, decision tables, circuit graphs, etc. are needed to relay much of the information in a short and concise way to the audience.