COURSE SYLLABUS
ECE 582 Electrical and Computer Engineering Design I
Winter Quarter 2005

Instructor: Prof. Joel T. Johnson
Office Hours: T, Th 11:30-1:30, T 3-3:30, DL 452, 292-1606 (also ElectroScience Lab 292-1593)
TA: Brian Dupaix, dupaix.2@osu.edu Office Hours: MW 3:30-4:30, Caldwell 341
Texts: Salt and Rothery, Design for Electrical and Computer Engineers, Wiley
Finkelstein, Pocket Book of Technical Writing for Engineers and Scientists, McGraw-Hill
Email: johnson.1374@osu.edu
Course webpage: http://www.ece.osu.edu/~johnson/582/ece582.html

Subject Matter:
The goal of ECE 582 is to enhance the design and technical writing skills of students in the course. Because these
skills are best learned through experience, a major component of the course is a team project involving design of a
prototype system. This system design is to be completed and a prototype constructed in the following course
ECE 682. Although the lecture material and texts will provide some instruction on very general technical writing and
design skills, ECE 582 should be considered a laboratory course due to the “learn-by-doing” focus. It is important to
recognize that this course does not focus on a specific technical topic, unlike most other ECE courses. Do not be con-
cerned if there are technical subjects discussed in the class with which you are unfamiliar; in the end, only the techni-
cal content of your team design project is of importance.

Prerequisites:
It is assumed that you currently hold senior status in ECE, that you have completed the required electronics courses
in the undergraduate program, and that you have completed at least 2 GEC writing courses.

Grading:
Grades for the course will be based upon both individual and team assignments, as follows:
Individual assignments (I#1 to I#6) = 25 %
Team assignments (T#1 to T#6) = 25 %
Team meeting minutes (M#1 to M#8) = 10 % (including attendance)
Team presentation = 10 %
Final team report = 20 %
Team peer grading = 10 %

Refer to the course calendar on the next page for assignment due dates, as well as for reading assignments to be com-
pleted before the corresponding lecture. A description of assignments is provided on the third page.

Course format:
The instructor will lecture on general design and technical writing topics on Tuesdays to the entire class, with
smaller sections meeting on Thursdays with the TA. Please attend only the section in which you are registered, as
teams will be assigned based on the roll for each section. A large portion of the Thursday meetings will be allocated
to time for teams to work on their project; minutes from these meetings (M#1 through M#8) will be turned in at the
end of the Thursday sections.

Design Project:
Students will be assigned randomly by the instructor to five or six person groups. Each group will complete assign-
ments T#1 to T#6 (marking milestones along the design process), as well as a design presentation and final report.
Three prototype development projects associated with ECE 682 in Spring 2005 will be presented early in the quarter
for use in the project. Groups interested in projects other than these should discuss with the instructor. Students will
also be asked to provide an assessment of their teammates; this assessment will be used in assigning peer grades.

Other:
I am very interested in your opinions on the course pace, content, and difficulty. Please feel free to stop by during
office hours or other times to let me know your thoughts on the course. Questions and discussions in class are also
strongly encouraged, as they give the entire class direct feedback on the issues being addressed at that time.
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<tr>
<th>Date</th>
<th>Tuesday</th>
<th>Thursday</th>
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<td>Jan 4th</td>
<td>Introduction, initial project descriptions</td>
<td>6 Fink Ch 1-2, Ch 18</td>
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<td>Individual introductions</td>
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<td>11</td>
<td>Fink Ch 3-5 Technical writing basics</td>
<td>13 Fink Ch 19 I#3, M#1</td>
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<td>Team introductions, lecture on teamwork</td>
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<td>18</td>
<td>Salt Ch 1-2, Document #1 Design Process</td>
<td>20 Salt Secs 3-3.3 T#1, M#2</td>
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<td>Discussion of T#1, formulate final questions list</td>
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<td>25</td>
<td>Customer presentations, discussion</td>
<td>27 Salt Secs 3.4-3.5 T#2, M#3</td>
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<td>Requirements specification introduction</td>
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<td>Feb 1</td>
<td>Salt Secs 4-4.3, Document #2</td>
<td>3 Fink Ch 7 T#3, M#4</td>
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<td>Requirements specification: Case studies</td>
<td>Progress reports</td>
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<td>Salt Secs 4.4-4.7, Document #3</td>
<td>10 T#4, M#5</td>
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<td>Synthesis/analysis: Case studies</td>
<td>More on system designs and documentation</td>
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<td>15</td>
<td>Fink Ch 15, 17 More design case studies</td>
<td>17 T#5, M#6</td>
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<td>System design session</td>
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<td>Effective presentations and graphics</td>
<td>24 T#6, M#7</td>
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<td>Review presentation drafts</td>
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<td>Mar 1</td>
<td>Group Presentations</td>
<td>3 Group Presentations</td>
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<td>Fink Ch 12, 14 Discussion of final reports</td>
<td>10 Report prep M#8</td>
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<td>15</td>
<td>Final reports due: 1:30 PM, I#6</td>
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**ECE 582 Assignments Winter Quarter 2005**

**Individual Assignments**

I#1: Prepare a two-page powerpoint presentation, introducing yourself and your resume. To be presented Jan 6th; presentation must be emailed to dupaix.2@osu.edu by midnight Jan 5th. See course website for format of presentation.

I#2: Prepare a one-page resume. Objective of resume is to obtain employment at a mid-sized corporation specializing in engineering prototype development. Due in class, Jan 11th.

I#3: Write a minimum two-page process description on a process of your choice related to electrical and computer engineering. The process should involve a minimum of four steps. Due in class, Jan 13th.

I#4: Write a document providing peer feedback on I#3, due in class Jan 18th. See course website for format of review. Due in class, Jan 18th.

I#5: Write a memo to the instructor providing an assessment of your team members’ participation in the ECE 582 design project to date. See the web site for the format of this document. Due in class, Feb 8th.

I#6: Write a memo to the instructor providing your final assessment of your team members’ participation in the ECE 582 design project. See the web site for the format of this document. Due with final team report.

**Team Assignments**

T#1: Write a letter to the customer requesting additional information on the prototype your team has selected. See the course website for a basic format. Due in class, Jan 20th.

T#2: Write a problem statement for your team’s design project. This document need not have extensive technical content, but should document what your team sees as the major issues to be addressed. See Salt, Appendix A, pp. 115-124 for an example. Document will be evaluated on technical writing and technical content. Due in class, Jan 27th.

T#3: Write a draft requirements specification for your team’s design project. This document should contain more technical information than T#2. See Salt, Appendix A, pp. 125-139 for an example. Document will be evaluated on technical writing and technical content. Due in class, Feb. 3rd.

T#4: Write a progress report to the customer detailing your team’s progress on the prototype design. Follow the format of Finkelstein Chapter 7. Due in class, Feb. 10th.

T#5: Revise your team’s requirements specification based on feedback received in grading of T#3. Update the requirements specification based on any new technical information since T#3. Due in class, Feb. 17th.

T#6: Prepare a draft version of your team’s system design presentation. Document will be evaluated based on presentation effectiveness and technical content. Due in class, Feb 24th.