ECE496 Final Lecture

Looking Ahead to Next Semester

Thursday, Nov. 12, 2009

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Peter Weiss

Begin with a good plan …

- maps
- Equipment
- Study terrain
- Avoid pitfalls

..follow through in execution

- Team work
- Testing
- Documenting
- Presenting
- Reporting progress

ECE496 Milestones & Deliverables

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<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
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<th>Jan</th>
<th>Feb</th>
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<tbody>
<tr>
<td>Project Proposal (draft A)</td>
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<td>Project Proposal (draft B to ECC) &amp; Draft A feedback</td>
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<td>Project Proposal (final draft)</td>
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- Design Review meeting
- End-of-term meeting
- Individual Progress Report
- Oral Presentations (tutorials)
- Final Report
- Design Fair

Planning

Design Review

Execution

Progress Report, Oral Presentation
Agenda

1. Deliverables for next semester
   • Individual progress report & evaluation
   • Oral presentation
   • Final group report
   • Design Fair

2. ‘To do’ Checklist
   • End-of-term meeting
   • Sign-up for Oral presentations

Progress Report / Evaluation – Why They’re There

Project View:
To allow reevaluation of position and adjustments if required
To access overall project progress
To access individual contributions and progress

Individual Progress Report

- Due date: Tuesday, Jan. 12, 2010, 3PM [the 2nd week]
- To be submitted by each student
- Contains a group progress summary and an individual progress summary (i.e., What you have accomplished since the Design Review)
- Can use information from past reports: Background, project goals, and requirements ← EDIT IT!
- Compare progress to work plan
- Update and justify changes to project:
  Show original & updated Gantt chart across entire year
- Document guidelines & template to be posted

Individual Progress Report - Hints

- Pinpoint actual accomplishments
- Focus on completed activities and provide evidence
- Unfinished activities are less comforting
  (What does “Select processor 50% done” mean???)
  (Note: Paretto’s 80%:20% Law)
- Indicate problems you’ve encountered and overcome through your creativity and hard work.
**Milestone Claims & Evidence**

Background statement → Reference [link to tasks/requ’ts]
Development Activity done → Test

Example --
“I finished the analog-to-digital conversion routine”
- is it coded?
- does it compile cleanly?
- does it work with some input randomly selected?
- does it work with a carefully-designed set of test cases that cover all operational situations?
- Sample evidence: photos, simulation plots, screen shots, schematics, flow diagrams, etc.

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**Individual Supervisor Evaluations**

- Currently: individual evaluations for the proposal and work to date
- In mid-January: individual evaluations
- Hardcopies directly from your supervisor

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**Note: Writing vs. Communication**

This is not about writing. This is about communication.

- Figures & Charts
- Headings
- Lists & Tables & Bullets
- Categories & other Organization

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**Agenda**

1. Deliverables for next semester
   - Individual progress report & evaluation
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Oral Presentation – Why It’s There

Project View:
- Faster information flow, lower volume than written work
- To be able to measure progress
- To inform third parties of project

Oral Presentation Format

- Evaluated but unmarked dry run THEN
- Marked final presentation (by administrator)
- Bring your own laptop & test with projector
- Presentation Length: 11, 14 and 17 minutes for teams of 2, 3 and 4 respectively
- Students in the audience participate by asking questions during Grading session
- Guidelines posted

Oral Presentation (Typical structure & information)

- A title slide
- An outline of the presentation’s contents.
- Introduction (explain to those not familiar with your work the background and motivation for your project)
- Objectives (what you set out to do)
- Describe design, accomplishments, & milestones
- Summarize progress and future work
- Conclusions (what you covered in your presentation)

Question: How do you (or can you) rework this and use this to make your presentation interesting and reflective of your enthusiasm in your project, without sacrificing important content???

Going from “good” to “superior” presentations

1. Plan
2. Practice
3. Revise
4. Practice
5. Present
Good

• Creating an outline to organize the material you are going to present

A superior presentation

• Not only has material organized, but has a sense of purpose and a main idea that connects the details
• Sense of purpose – helps determine take-away – a superior presentation is memorable

So, categories of a superior plan include:

• Purpose
• Opening strategy
• Main idea
• Keynote summary of material
• “Therefore” statement
• Recommendations
• Take-away

To think about when determining the main point

• What does the audience have to know in order to appreciate what you are doing?
• How would you describe your project in one minute?
Ideas on slide design have changed in the last ten years

- Michael Alley, MSc Electrical Engineering, MFA in Writing, Associate Professor of Engineering Education at Penn State U, author of *The Craft of Scientific Presentations*, has proposed the “Assertion-Evidence Structure” for slide design
- http://writing engr psu edu slides html

The headline should be a complete sentence that makes an assertion which is no more than two lines

- Photograph, drawing, diagram, or graph supporting the headline assertion
- Call-out, if needed: no more than two lines

Not “agenda” or “outline”

Superior presentations are those in which the presenters have put thought into every detail. Generic headings are just that – generic. They are useful for scientific presentations in which the lab report headings lend credibility. But design reports should have unique, individual emphasis

Ice on airplanes reduces the performance of flights and accounts for numerous fatal accidents

- 1982 to 2007: 141 fatal flights
- [www 2 tech purdue edu 2008](http://www2techpurdueedu)
- [aop air safety foundation accident database 2008](http://air safetyfoundation accident database)
- [airdisaster com 2008](http://airdisastercom)
Xenon headlights illuminate signs better than halogen headlights do.

Only about 0.5% of all the water on earth is fresh water that is readily available for human use.

- **Oceans and Saline lakes**: 97.4%
- **Ice caps and glaciers**: 75%
- **Fresh water**: 0.5%
- **Groundwater**: 28.5%
- **Fresh water**: 2.6%
- **Groundwater**: 0.5%

Some suggestions for making your practice more effective:

- Practice relaxation
- Practice articulation
- Practice presentation
  - Out loud
  - In real time
  - With a timer
  - With an analytical sense

Title as a complete sentence, no more than 2 lines

List of ideas, can be complete sentences

Key image exemplifying ideas of slide
Revise and edit your presentation realistically

- Cut text in order to achieve time
- Do not plan to “just go a little faster”

Present

- Take control
- Use eye contact to connect with audience, to analyze their response
- Be yourself – but your professional self
  - Try wearing a shirt and jacket to the dry-run
- Breathe
- Articulate

The Magic if

Agenda

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Final Group Report & Design Fair – Why They’re There

Project View:
- To give final project status
- To allow evaluation of the end results
- To interest others in your work
- To award efforts
- To induce continued support

Final Group Report

- Due date: Thursday, March 23rd, 2010
- Show you have followed the plan and reached the goal, satisfied the objectives and delivered the deliverables
- Where you haven’t done this? Explain why.
- A living document – you’re already well along!
- Draw from project proposal and individual progress reports, updating as needed.

Final Group Report

- A living document – you’re already well along!
- Draw from project proposal and individual progress reports, updating as needed.

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ECE496 Design Fair
Design Fair – parts
1. Poster
2. Presentation / Demo / Questions

Design Fair (format)
- Each team of students is required to present for one evening of the design fair. A poster must be prepared to illustrate your work.
- Each team will be assigned a table and must be present from 6:30 to 9pm in the evening.
- The basic set-up is simply a table. Any additional equipment must be reserved and requested from the Design Centre. Request form to be posted - book early!
- Your administrator and supervisor will come around during the evening to evaluate your poster/demo/display.

Design Fair Grading
- Your grades from the administrator will be based on the following criteria:
  - the quality of the presentation material
  - the ability to explain your work
  - the ability to provide correct responses to questions posed by the coordinator
  - a successful demo
- Your grades will not be assigned until the administrators have a chance to evaluate all the projects in your Section

Guidelines for Poster Presentation
- Space is limited!
- Must be clear, concise, and easy to read.
- Should include some background material (e.g. current standards), objectives (e.g. specifications) and challenges (e.g. technical limitations)
- Present only the high-lights of important results and accomplishments of your project.
- Remember that your audience will be 3rd year ECE and Eng. Sci. students, industrial visitors, members of the Engineering Communication Centre, and administrators.
- Make good use of diagrams and drawings (a picture worth more than a thousand words).
- No place for complete program codes and derivations.
Design Fair – Sample Poster

Project Title
Names of students and Supervisor

Introduction
- High performance capability in wireless portable telecommunication equipment
- True 5V or lower operation
- Compatible with CMOS/BiCMOS processes
- High operation speeds and high efficiency
- Key to embedded systems
- Fast knee-tracking monitors
- Multi-cell Encoding

Design Challenges
- High drain current consumption
- Insufficient transistor size
- Light refresh in circuits
- Low drain current in circuits
- Need new shallow p-base, trench etch
- Insufficient high voltage

Simulation Results
- Conclusion & Future Work

Design Fair - Demo

ALL groups must demo: Show the work is done or demonstrate some key concept of the work

You may have to do something on top of your work to produce an adequate demo.
Static graphs are OK… (but remember, this is a PRESENTATION mark)

Video?? Slideshow?? Simulation?? Charts?? …
→ Reviewer’s time is limited (typically ~15 min for everything)

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2. To do’ Checklist
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End-of-term Meeting

- Administrator speaks briefly to each team to clarify expectations for upcoming progress report.
- Sample checklist (will post on website)
  - Recent Changes to Project requirements
  - Project Tasks Completed
  - Project Tasks Underway
  - Problems or Concerns Encountered
  - Progress Expected by Progress Report

End-of-term Meeting

Formats:
- Sections 2 & 4: individual team meetings (contact your administrator to book meeting).
- Other sections: One evening 7-9pm, similar to Meet your Administrator night.

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<thead>
<tr>
<th>Name</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
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<td>Phang</td>
<td>Thu, Dec. 3</td>
<td>7-9pm</td>
<td>MC102</td>
</tr>
<tr>
<td>Kunov</td>
<td>Wed Dec 2, day</td>
<td>SF3001</td>
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<tr>
<td>Korst</td>
<td>Thu, Dec. 3</td>
<td>7-9pm</td>
<td>GB119</td>
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<td>Anderson</td>
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<td>EA311</td>
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<td>Timorabadi</td>
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<td>7-9pm</td>
<td>MC252</td>
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<tr>
<td>Gillett</td>
<td>Thu, Dec. 3</td>
<td>7-9pm</td>
<td>GB120</td>
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Sign-up for Oral Presentation Dates

- Sign up sheets will be posted up in the Design Centre SFB520 in late Nov.

Time Conflicts for Oral Presentation or Design Fair

- Design Fair dates are assigned by us.
- If your presentation conflicts with evening midterms:
  - If not completely overlapping, group usually presents after the test.
  - Ask instructor of other course to move the test date or allow you to write your test earlier.
  - Inform your administrator as soon as possible!
To Do List
Coming Soon (from us):
- Sign up sheets for oral presentation

To Do Checklist (for students):
- Remind supervisors to submit Proposal evaluations online
- Sign up for Oral presentation timeslot (SFB520)
- Remember to request for equipment, power, etc. for Design Fair from Mike Mehramiz at the Design Centre
- LabVIEW training session Fri. Nov. 13th, SF2112, 1-4pm

Beyond ECE496…
Design Project Awards & Conferences

AWARDS & RECOGNITION FROM YOUR PEERS!!

- Aloha Design Award ($10,000)
- Gordon Slemon Design Award ($1000)
- IEEE Student Paper Competition
- The Myron Zucker Industry Applications Student Design Awards - Centennial Thesis Awards

Check ‘Awards’ page on website

Fin