Instructions for Midterm Design Review Presenters

ECE 47700 – Digital Systems Senior Design Project

Overview:

The Midterm Design Review is when each team will present their project progress and especially their schematic and PCB layout design to the course staff and eight of their peers in a 50-minute presentation session. One of the major practical purposes of this design review is to get many eyes on the PCB layout design to help minimize design issues before ordering the PCBs. Other purposes include assessment of student's presentation skills, assessment of preparation and progress midway through the semester, and assessment of ABET requirements including engineering design, teaming, presentation, and problem solving.

Attendance:

During the Design Reviews both the team presenting and the peer reviewers must be in the assigned room and ready to present or review BEFORE the start of the session. There will be penalties for lateness and substantial penalties for unexcused absences.

If someone does get sick or has some emergency before their scheduled team presentation, the procedure will be as follows: Notify course staff at ECE477@ecn.purdue.edu as early as possible of your absence. Teams will still present unless there are more than two team members absent. We can arrange for team members to present their part of the presentation remotely, but we currently do not allow a fully remote team presentation.

Grading:

While there will be student peer reviewers and their ratings and comments will be provided as feedback to the presenting team, the design review grades for the presenting team are compiled only from the course staff reviews. Both course staff reviewers and peer reviewers will use the same 1-to-5-point scale, weighting factors, and survey form for the nine required presentation sections and four overall presentation categories. These nine presentations sections and four overall categories are listed below and are discussed in greater detail in the reviewer's instruction documents.

Required Presentation Sections with Grading Weighting:

Project Overview (x1): A concise description of the project

Major Components (x1): Major (electrical) components being utilized by your design

Block Diagram (x1): one or more images of your system block diagram

Packaging Design (x1): one or more images of your packaging design

Electrical Schematic (x3): one or more views of your electrical schematic

PCB Layout (x3): one or more views of your PCB Layout

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ECE 47700 – Digital Systems Senior Design Project

Prototyping Progress (x2): Describe your team's prototyping progress

Software Development Status (x2): progress with software development

Project Timeline (x1): Provide a timeline (or GANTT chart, etc.), starting from the current week until the end of the semester, detailing work to be undertaken in completing your team's project.

Overall Categories with Grading Weighting:

Technical content (x2)

Quality and use of visuals (x1)

Organization/use of allocated time (x1)

Professionalism/presentation style (x1)

The rating score times the weighting factor are then summed over the required sections and overall categories to give a grade out of 100. The grades from each course staff reviewer are then averaged to get the team presentation grade.

Presentation Template and Examples:

There is a PowerPoint Presentation template that shows the required sections and elements for the presentation. You do not have to use PowerPoint for your presentation, but you must follow the presentation outline and include all nine of the required sections in the same order. Some of the required sections will require multiple slides for your project presentation.

There are currently four example Midterm Design Review Presentation slides from prior semesters. Please take some time to look at these examples to help ensure that your presentation will meet course staff expectations.

Following is a checkoff sheet to help you prepare for your Midterm Design Review Presentation.

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ECE 47700 – Digital Systems Senior Design Project

Midterm Design Review Preparation Checklist:

1. **Block Diagram Completion:**
   - ☐ All major electrical components included in block diagram?
   - ☐ Block diagram includes bus widths for all multi-wire electrical connections?
   - ☐ Block diagram includes interface types for all non-GPIO electrical connections?
   - ☐ Block diagram neat, clean, and easy-to-read?

2. **Schematic Completion:**
   - ☐ All electrical components included on schematic?
   - ☐ All components connected? (Run Electrical Rule Check to check for unconnected components)
   - ☐ Schematic organized by subsystem and easy-to-read?

3. **PCB Layout Completion:**
   - ☐ Footprints match components (footprint verification)?
   - ☐ PCB layout complete?
   - ☐ Routing complete?
   - ☐ Routing appropriate for design? (Hint: throwing a design into Eagle and mashing the autoroute button may not yield acceptable results for your prototype).
   - ☐ Consult the PCB Verification Checklist for additional PCB suggestions
   - ☐ PCB slides easy to read and showing subsystem area zoomed in as appropriate?

4. **Slides Preparation:**
   - ☐ Slides completed?
   - ☐ All slides easy to read?
   - ☐ At least one slide for each of the required 9 sections?

5. **Website Preparation:**
   - ☐ Datasheets for all major components available in appropriate section of student project website?
   - ☐ All current and updated assignments posted to student project website?
   - ☐ Electrical schematic available on student project website?
   - ☐ PCB Layout available on student project website?
   - ☐ Midterm Design Review presentation slides available on student project website?

6. **Presentation Preparation:**
   - ☐ Presentation practiced at least once prior to midterm design review?
   - ☐ Business semi-formal dress or better? (No jeans, collared shirts, dress shoes?)
   - ☐ All team members involved equally in the presentation?
   - ☐ Does the presentation fill the 50-minutes while leaving time for questions?