FINAL PROJECT
EECE461
INSTRUMENTATION

- **No late projects or deliverables will be accepted**
- Remember that this project makes up a significant part of your final grade

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Project Objectives:
The project requires the team to conceptualize, design and develop an instrument that satisfies specifications and to report on it in a written and oral format.

Project Milestones and Due Dates:
1. Project Proposal: Submit a brief proposal describing the project idea and motivation. **Due noon Friday March 20th on Moodle**.
2. Design and BOQ: Submit a brief report including the requirements and design (hardware and software) with the detailed parts required. **Due noon Thursday April 2nd on Moodle.**
3. Running system: Brief demonstration to be given **Friday April 24th, time TBD.**
4. Final presentation **due in class week of April 27th.**
5. Experiment Design and Testing, Manual and Datasheet: **Due on Thursday May 7th by noon on Moodle.**
6. **Self and Peer Assessment Due on Thursday May 7th on Moodle.**

Project Proposal:
You are required to propose a device or system which is rich with instrumentation. The focus can be on integrating several sensors to carry out a certain task or on developing a new sensor and new method to sense. The idea does not have to be unique but extra credit is given for uniqueness. The domain of application is not specific and is up to you to define. Make sure you discuss your idea with me before submitting the proposal.

Proposal must:
- Include a motivation for the project with clear references to support these claims
- Clearly describe the device/system and its functionality and features
- Clearly indicate the type and number of sensors that will possibly be used in the design
- List of group members
- Limit 1 page

Design and BOQ:
- You are required to develop clear final requirements to be included in the design documentation
- Provide the details of the hardware and software design. Make sure to show schematic of the overall system
- Provide justifications of your design choices
- Provide a bill of quantities (BOQ), which is a list that includes the specific parts required, quantity, supplier and cost
- Limit 2 pages
- Cite all used references

Running System:
- You are required to carry out a brief demonstration of the system functionality.
- Your grade will be a function of the completeness of your system
- You will be given feedback based on the demo
- The grade might be different for group members based on the replies to questions

Final Presentation:
- This presentation will summarize all the work you have done
- Give a brief and clear description of your objectives and motivation including the project specifications
- Describe the design (hardware and software)
- Describe the experimental test bed and the results obtained
- Analyze the outcomes
- Include suggestions for future improvements
- Be prepared for questions
- All team members are required to participate in the presentation equally
- Make sure your presentation has no spelling or grammatical mistakes
- Use the exact time allocated for your presentation. No more No less

Experiment Design and Testing, Manual and Datasheet:
- Provide a document including the experiment design, test setup and results, a manual describing the installation and use of your system and a datasheet including the performance and characteristics of your system
- Cite all used references
- Your grade will be a function of the clarity, completeness and overall quality of all 3 components of the document
- At this milestone you are required to submit your complete system with all needed software, including source code if any

Assessment:
- Proposal 5%
- Design 20%
- Running System 30%
- Final Presentation 20%
- Documentation and testing 25%
- Factors considered in grading your project in general in order of importance:
    o Correctness of methods used
    o Thoroughness and correctness of analysis and methods
    o Completeness of outcomes
    o Difficulty and uniqueness
    o Peer assessment and contribution to the team