High Level Design Presentation

The High Level Design Presentation is an opportunity for you to present ideas for your major design robot to the review team and get feedback on these ideas. The turn-around time is quick - one week to develop some ideas in reasonable depth.

Your design presentation should include the following:
- Very brief team introductions
- Introduction to the problem/challenge including known constraints
- Overview of your team's strategy for winning a match
  - What tasks do you intend to attempt? or How have you prioritized the tasks available?
- Requirements [1]
  - List of final, distilled **essential** requirements for your robotics system (provide quantification where possible).
  - List of final, distilled **desirable** requirements for your robotics system.
- High Level Architectural Block Diagram[1]
  - Include all important subsystems and functions of your robot◻
  - Indicate how blocks relate to or communicate with one another (e.g., use arrows to indicate flow of information)
- Conceptual Design[1]
  - Alternative solutions/implementations for important functions of your robot (e.g., finding your bridge). In general, you should have identified at least 2 alternatives for each major function.
  - Overall mechanical layout: Clean hand sketch or CAD drawing showing the general structure of the robot and where all the major components could go. This is rough and subject to change. **Foam core or cardboard prototypes of your current thinking are encouraged**.
  - Overall electrical block diagram: Each block should represent an electrical device such as a motor, switch, with lines representing wires connecting them. Refer to this site for lots of details on electrical block diagrams: https://www.myodesie.com/index.php/wiki/index/returnEntry/id/3027
  - High-level Robot Control: UML Activity Diagram describing the sequencing of tasks your robot will attempt
- Team Functioning
  - What are some norms that your team has already developed? These could be norms around communication, working, team meetings, etc.?
  - What are one or two qualities about your team that you think will help make you successful? What are one or two qualities that you think you'll need to work on as a team? Why?

The Presentation Itself
- Present your design as if you were pitching it to potential financial sponsors with some level of engineering knowledge
- Will take place in regular class time during the week of February 9, 2015
- Your presentation should be approximately 12 minutes followed by approximately 15 minutes for Q&A.
- You should bring at least 7 hard copies of the slide deck for the profs and observers (3 or 6 slides printed per page, black and white is completely acceptable, stapled

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[1] See the list of Suggested Videos at the end of this document to learn about essential vs. desirable requirements, block diagrams, and conceptual design.

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- o Business Casual attire is expected
- o The presentation will be followed immediately by your first team retrospective.

Review **at minimum** these videos on the FYD website (http://lyle.smu.edu/fyd)
- o #3: Conceptual Design
- o #4: Developing Requirements
- o #23: Architectural Design

Review the following video on YouTube:
- o UML Activity Diagrams: http://www.youtube.com/watch?v=XFTAIj2N2Lc
  - o Note: please check your formatting and UML Design. It will require more research outside of this video.
  - o LucidChart (www.lucidchart.com) is a fantastic tool for creating many types of diagrams, including UML Activity Diagrams.

Tips for success:
- o You should think about your design before you worry about your presentation.
- o The more information you give us, the more feedback we can give you. This feedback usually comes in the form of questions during the presentation.
- o Don't be put off by our questions about your design; it's an important part of the process. Be worried if we don't ask any questions.
- o Please don't bore us. Think about how you can communicate your design with the precision of an engineer but without the need for a nap. Some things that are really boring:
  - o Reading to us from slides or note cards
  - o Monotone voices
  - o Useless pictures and/or diagrams (a useless picture or diagram is one that is missing vital information that is needed for interpretation or that is unintelligible due to lighting or focus.)
- o **Practice, practice, practice.** Know your stuff. Practice with your team. Know who is going to say what, and when that person is going to say it. Work on transitioning from one speaker to another. Make sure you stay within the time constraints.
- o Proofread your presentation.
- o Plan a meeting with your TA mentor to dry-run your presentation. You will NOT be sorry; they've done lots of presentations (many of them have taken this class), and will be able to give you amazing advice.