

ESG 21W.732 ASSIGNMENTS LISTING, FALL 2009

DESIGN

These projects are the basis of the communications deliverables:

- Project I: Conceive, Design, Prototype, and Evaluate a device to keep coffee warm for two hours. The deliverables are to be accomplished individually, but collaboration is encouraged, especially for brainstorming, literature searching, and analysis.
- Project II: Conceive, Design, Prototype, and Evaluate a solar cooker to harness sunlight to heat water in a pyrex cup. The expectation is that this project will be accomplished as a team.
- Project III: Open ended. Conceive, Design, Prototype, and Evaluate a device that will save energy or otherwise reduce environmental footprint. The expectation is that this project will be accomplished as a team. Some individual writing & presentation will also be expected at early stages of the project. The individual contributions will be folded into the final, team written and oral deliverables.

WRITING & GRAPHICS

individual

- weekly progress reports
- regular notebook entries
- web presence
- movie response
- project I proposal
- project I report (includes back of the envelope calculation, figures, and FRDPARRC table)
- punctuation exercise
- product reviews
- project III 3x3 design space-x-design matrices
- project III testing proposal
- project III testing report
- project III testing graphics package
- myth
- 3 x *What Color is My Parachute* 1 page stories

team

- web presence(s)
- project II poster
- project II proposal
- project II report (includes error analysis, BotEC, FRDPARRC table, & graphics)
- project II graphics package (graphics included in report and oral presentation)
- project III business cards
- project III poster
- project III proposal
- project III report (includes error analysis, BotEC, FRDPARRC table, graphics, etc.)
- project III graphics package (graphics included in report and oral presentation)

“LECTURE” TOPICS & IN-CLASS ACTIVITIES

- brainstorming
- FRDPARRC
- writing: the big picture, process and product
- writing: *The Science of Scientific Writing* & beyond
- graphics: principles and examples
- the P word
- grouping logic
- reading & textual analysis
- team formation trajectories
- poster design
- elevator pitches
- oral presentations

- proposal structure
- report structure
- story telling
- poetry
- quo vadis
- and many smaller fragments and tangents

PRESENTATIONS

- class participation
- informal presentations, especially pitching designs for further brainstorming, direction, and evaluation
- design reviews that summarize proposed designs for projects I, II, and III.
- design review for project III modules and testing
- design reports on the efficacy of the designs for projects I, II, and III. reports for projects II and III will include practice presentations.

Expect that a number of the more formal presentations will be videoed and that reviewing the videos will be part of the assignment. The video review should be noted in the notebook.

READING/"TEXTS"

Each of these readings deserves comment in the notebook:

- PREP article
- FRDPARRC/design overview
- library's info searching
- references for projects I, II, & III
- Kishlansky on reading
- Oakley, on teamwork
- Philips, on teamwork (courtesy of the MIT leadership folks)
- Forming, norming, storming, & performing wiki entry
- Meetings reading from MIT leadership folk
- Listening reading from MIT leadership folks
- Pirate's code of ethics
- ASME ethics and author's guidelines
- *the existential pleasures of engineering* (excerpts)
- *the science of scientific writing*
- industry communications requirements
- *who's a nerd*
- boston globe on nerds
- *should ohm's law be repealed?*
- assorted Petrosky
- assorted myths
- *what color is my parachute* (excerpts)
- *in a station of the metro*
- *the onion*
- Movie: TBA—*The Rocker? Stagecoach?*
- Pogue, camera review

MEETINGS & OUT OF CLASS EXPERIENCES

- Regular (~every other week) individual meetings with Elizabeth &/or Dave
- Regular (~every other week) team meetings with Elizabeth &/or Dave
- Hobby shop orientation
- Watch a movie
- Team meetings as needed to accomplish deliverables.
- Cleaning up the workspace