Proposal Format

4-6 pages (can be longer)

- Page lengths are based on pages being "single-spaced" with 12 point font (or smaller)
- Recommend you use Google doc format to allow for simultaneous team editing.
- **Please submit the DRAFT and FINAL PROPOSAL as a PDF file**

Proposal Outline

- **Title of the Project** (e.g. `"Wall Mapping Robot"`)
- **Short Team Name** - Single or Multi-Word (e.g. `"ROVER"`)
  - hyphenated and/or CamelCase (e.g. `"BLUE-TEETH"`, `"BlueTeeth"`, or `"Blue-Teeth"`)
- **Project Overview** - short, in the form of an `"abstract"` or `"small executive summary"`
- **List Team Members and Likely Responsibilities**
- **Objectives** (paragraphs)
  - what are you going to design and build?
  - what is the specific "mission" of the project?
    (e.g. for a wireless sensor project, "detect intruders and notify")
  - describe what is a success?
  - describe what is a failure?
  - who is your customer?
- **Realistic Design Constraints**
  - Engineering Constraints - size, weight, power, performance, interfaces, spec, design
  - Timing & Cost Constraints - dev/prod/delivery schedule, costs, overhead, parts, budget
  - Legal/Ethical Constraints - regulations (OSHA, FAA, FDA), intellectual property, health, patents, copyrights
  - Safety Constraints - warnings, training, environmental (land, sea, air, noise, light, radiation, reaction, transport)
  - Functional Constraints - overall geometry, motion of parts, energy + forces involved, materials, control systems, information flow
  - Manufacturing Constraints - production of components, purchase suppliers, quality control, assembly, transport
  - Life-Cycle Constraints - distribution, operation, working environments, maintenance, service & repair, disposal, recycle, scrap
  - Ecological Constraints - environmental inmpact, sustainability, political & commercial consequences, materials, toxicity, fluids, gas
- **Goals**
  - detail specific `"Fall Goals"` (experiments, tests, prototypes)
  - also detail specific `"Spring Goals"` (finished system, results)
- **Prototype**
  - **The team should complete a reasonable prototype at the end of the fall semester;**
  - describe that prototype
    (e.g. "circuit prototypes and early software demonstrating the functions of the proposed project")
- **Approach** (paragraphs and bullets)
  - overall scheme, design approach, design using ?
  - build this, integrate that, write this software, etc.
  - how to test, debug, etc.
- **Block Diagram (whatever makes sense - system, hardware, software) is REQUIRED**
  - can be hand-drawn (take a photo)
- **Equipment Needed** (bullets)
  - a rough idea of components (hardware, software, etc.) and other equipment needed (test equipment, etc.)
- **Budget** (assume $200 for now) (bullets)
  - cost if you know it or can estimate
- **Plan/Schedule (across 2 semesters)** (provide more detail for Fall) (table or bullets)
  - a rough guess at the time frame to accomplish steps in the approach
  - milestones - these are defined points which demonstrate you are making progress toward your goal
- **Challenges** (paragraphs or bullets)
  - what is going to be hard (or hard for your team)
  - equipment that you don't understand
  - skills you need or have to learn
- **References** (if any)
  - include drawings if that helps explain the problem (can be hand-drawn and scanned/photographed)