# Practicum Product Design Specification (PDS) Outline
2023-11-14

Create a PDS for your practicum project, and upload it to your collaboration site. Sections should include:

- **Short Descriptive Name** ✔️
    - Give your project a short descriptive name. For example, "Automated Dice Roller" or "Gyro-effects Frisbee". (LED20)
- **Executive Summary with Concept of Operations (2 pts)** ✔️
    - A *brief* summary of your product. What does it do? Why? Who uses it? How does it work? How do they use it? After reading this, the reader should have an understanding of how your device operates and the context in which it's used.
- **Brief "Market" Analysis (2 pts)** ✔️
    - Who are the intended customers / users?
    - What is the competition? Why is your product different?
    - What price do you think you can sell this for, and why? (keep it short, we're engineers, not marketing researchers)
- **Requirements (4 pts)**
    - Requirements are: Abstract, Verifiable, Unambiguous, Traceable, Realistic
    - Think "10,000 ft" view of what is required. E.g., "must be portable", "must measure voltage but should measure current", must last 1 hour, etc.
    - Remember, you're defining the requirements, not the solution.
    - Feel free to use either "must" or "must, should, may"
    - Are you doing something dangerous? Put safety as a requirement here, and describe what that means ("Must not overheat on failure")
- **System Architecture (4 pts)** ✔️
    - This is your *proposed* design, from a high level.
    - Create a Level 0 and a Level 1 block diagram: one block per major section (e.g., processor, input, output, power supply, etc) with interconnections in between them. Label all interconnections with what kind of interconnection they are. I.e., Is it an I2C connection? Or PWM? Or Analog? Or a simple digital bit? Label all blocks. If it makes sense to put the part number in the block, go ahead.
- **Design Specification (4 pts)** ✔️
    - OK, *now* put in your first swing at the technical details on the design.
    - A list of bullet points is fine here: What is the sensor? Processor? Actuator? Power? Mechanical design? Firmware? Arduino or no? Development environment?

**Important Notes:**

- Format nicely, include all the standard things: Title, team #, names, page #s, sections, etc. (2 pts)
- Spell check it, and *write it in a direct, simple, active voice. (2 pts)*
- Pictures are good, when useful. Gratuitous pictures are not good.
- This should only be 2-3 pages.

*Do you have questions or comments on this homework assignment? [Please comment on them](#)!!*