First Portfolio Page Project & Your Learning Plan

Engineering is an incredibly broad field covering far more interests and content than can be covered in one (or three classes). Because of this, there is no reason to force everyone to learn the same things and do the same projects all year. Instead, I hope to let everyone take a higher degree of ownership for their own learning and to pursue knowledge and projects of their interest. Just letting you free to go work on whatever project can be overwhelming, however, and it is my feedback that guided instruction and learning is something which most of you still want. To find this balance between guided instruction and freedom of projects & learning, we will each create individual Learning Plans for the next approximate three weeks.

This learning plan will outline:

1. What is your learning goal for these three weeks
    a. Think of what Engineering Field(s) you are most interested in. What do you hope to learn accomplish in these regards?
    b. **Examples**: To better my understanding for Electronics & circuitry; to better my ability of taking mechanical designs to reality; to find a branch of engineering which may be of interest to me
2. What final project do you hope to create (should tentatively take ~1½ weeks to plan and complete).
    a. It is ok for these to be as specific or as broad as you'd like. Additionally, you will not be married to whatever you say your project will be.
    b. **Examples:** Machining a piece of material from a computer file on the CNC mill; creating a plane which can fly; creating a project using the Arduino
3. What you need to learn in order to create this project and meet this learning goal. These fall into three categories:
    a. **Procedural skills** to master
        i. **Procedural skills**: practical skills to accomplish a specific technical task
        ii. **Examples**: Soldering, AutoCAD, how to weld
    b. **Conceptual understandings** to learn
        i. **Conceptual understanding:** Concerned with the relations of concepts of some field of enquiry rather than with the facts
        ii. **Examples:** How physics applies to a structure; how aerodynamics affects flight; how electricity is
    c. **Knowledge** to gain
        i. **Knowledge:** facts & info
        ii. **Examples:** how planes work; how circuits work;
4. What steps can we take in order to learn these? (~1½ weeks)
    a. If you don't have a strong and clear idea for this, don't stress about it, just leave this blank for now. This is where my job comes in ☺
5. How will you know when you have learned these learning goal categories?
    a. I don't want to make this a tests class, so what alternatives do we have to demonstrate learned knowledge?
    b. **Examples:** A portfolio of completed assignments/lessons addressing specific knowledge; A brief research paper on a concept; demonstration of a procedural skill
6. Are there any resources needed or anything else that needs to be addressed before you get started?
    a. This just lets me know if there is anything I need to get or do for you ASAP in order to get you off and running.