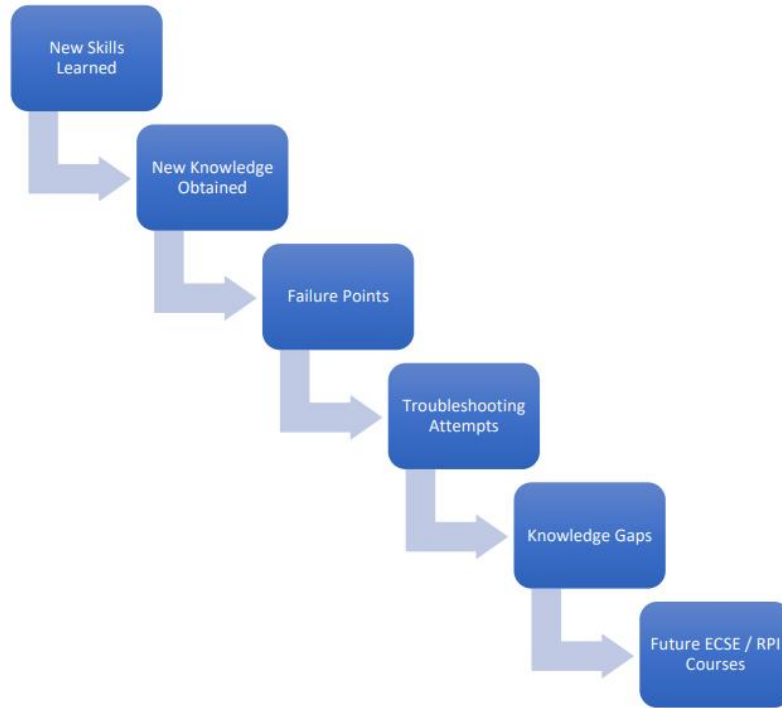# Omega Exploration Map

Please fill out the following sections of your map for your project.   Many of you will learn skills or concepts that are beyond the Intro to ECSE concept list. Please provide references, links to website, pictures or screenshots of how you explored in your project!

Contents

New Skills Learned

Did you learn a new skill or use a skill you know a bit about in a different way?

I went to the Forge and learned how to 3D print a parts for my bottle rocket for my son. It will measure how high it flies up using an altimeter and report it to my cell phone.

New Knowledge Obtained

Did you obtain or use new knowledge? If so where did you get the information?

I found a template and a lesson plan for bottle rocket designs. By starting with the template, I saved a few steps in designing the ideas from scratch!

https://www.youmagine.com/designs/3dkanjers-waterraket-water-rocket

A micropeak altimeter will help measure height of the rocket

https://www.apogeerockets.com/Electronics-Payloads/Altimeters/MicroPeak-Altimeter

Failure Points

Did you see any failures through the process? What were those failures?

The high-pressure buildup cracked the plastic part at the base. It released pressure making it difficult to get above a certain height. I couldn't get the connection between altimeter and google sheets to update correctly.

Troubleshooting Attempts

How did you attempt to troubleshoot and iterate through those failures?

I glued the base back together and put tape around it to provide extra support. I tried resetting the altimeter and making sure that the link was correct to the google sheet. I also watched a few videos on how to set up the connection.

Knowledge Gaps

What is some knowledge that you need to obtain to finish, calculate, understand, or improve your design?

I don't really understand how wireless communications work. How do you optimize it? I don't understand how to simulate and test materials.

Future ECSE/RPI Courses

Can you find any course that might help you in the future to make a better design? Explain how it will if you can.

ECSE 4961/6961 Modeling and Simulation for Cyber-Physical Systems

I can imagine simulating my entire process this way first.

Internetworking of Things ECSE 4660/6660
Also I need to learn more about optimizing communications in wireless technologies

https://sites.ecse.rpi.edu/~abouzeid/courses-taught/iot-spring-2021-ecse-466066.html

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Exploration Map Standards

1. **Exploration Completed**