Michigan Tech has received an urgent request from the global scientific community. The United Federation of Scientists (UFOS) has acquired several samples of suspected alien technology. Each device is enclosed in a sealed metal container with four electrical connectors. The scientific community is very curious about the device characteristics because they are reputed to hold the keys to a global source of cheap energy. Information received with the devices leads the UFOS community that they are electrical circuits composed of elements similar to what terrestrial scientists call “passive components.”

Your task is twofold:
- Prepare and submit a test proposal that fully describes a set of tests that will reveal the exact nature of the circuit within the alien device.
- After your test proposal is approved, conduct your examination and report your findings in the form of a schematic drawing of the alien circuit.

First, you will work in teams to design a set of tests that will enable you to precisely describe the circuits contained in the alien devices. This Test Proposal must be submitted to your TA and approved BEFORE you conduct your tests. Please include a detailed, step-by-step description of all proposed tests including equipment required, connections to be made to the device under test, signal inputs, and the expected results of the test. Also, include decision trees, drawings and schematics as necessary to fully illustrate your test proposal. Each team will submit a test proposal to their TA not later than one-week after the device is received. You will not be allowed to proceed to the next step in the process until you have received an approved Test Proposal from your TA. This may take several attempts. Your TA will provide you with feedback to guide your efforts. **Safety Note:** The first attempt to open a container for examination resulted in a highly energetic response that caused the complete destruction of the lab, the scientists and a local village. **DO NOT** attempt to open the case on your test device. All examinations of these devices must be performed without exposing the contents. **Restrictions:** **Do not apply more than 5 V DC to any terminal of the device.** Do not remove the suspected alien technology from EERC room 637.

After you receive your approved Test Proposal from your TA, conduct the tests according to the procedures developed in the Test Proposal. Report your conclusions about the exact nature of the circuit, including circuit topology and component characteristics in standard lab report format prescribed by department policy. Include drawings, schematics and an assessment of your confidence in the precision of your findings. Your report will be deliverable one week after receipt of your approved Test Proposal. Be prepared to present your findings (3-5 minutes) to a panel of distinguished researchers one week after your report is delivered. All reports will be completed by Friday of Week 14. See the attached process diagram (Fig. 1) for more information.
Fig. 1 Process Flow Chart