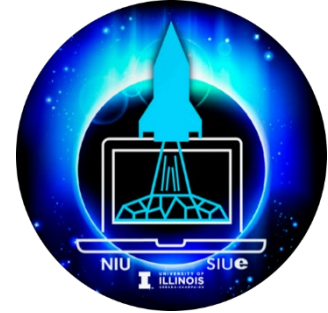


# **Evaluation and Assessment of, Single Stage Rocket and Microelectronics MOOCs**

**AE497 – 8wk Independent Study – 1-2 credit hours**



## **Overview:**

The student will work independently under the guidance of Professor Rovey ([rovey@illinois.edu](mailto:rovey@illinois.edu)) and graduate student Tim Plomin ([tplomin2@illinois.edu](mailto:tplomin2@illinois.edu)) to evaluate and assess a single stage rocket massive open online course a hands-on component to build and launch a model rocket.

## **Main objectives:**

1. Study the basics of rocketry, rocket hardware, rocket design, rocket fabrication, launch, and data analysis.
2. Study the basics of microelectronics, rocket avionics, raspberry pi hardware and data handling.
3. Complete quizzes, assessments, and hands-on activities relevant to the single-stage rocket and microelectronics MOOCs, including building and launching a model rocket.
4. Identify another MOOC of the students own choosing and complete it.
5. Compare and contrast the single-stage rocket MOOC with the other MOOC of their choosing
6. Write a 5-pg report describing their activities, their own personal assessment of the rocket and microelectronics MOOC, their assessment of their other chosen MOOC, and description of the comparison and contrast between the two.

**Start Date:** March 7, 2022

**Report Due Date:** 11:59PM, May 13, 2022

**Expected Time Commitment:** 4-6 hrs/week

## **Additional Details:**

UIUC and SIUE have developed courses designed to teach students about single stage rockets and microelectronics. These courses combine a series of online videos with hands-on components that allow students to build and launch a model rocket and collect data using a Raspberry Pi/Navio2 microcontroller. In the future, more courses like these could be offered, but first an assessment of these courses needs to be done.

Your responsibilities as an independent study student are to take two courses. One will be a combination of the Single Stage Rocket and Microelectronics courses, developed here in Illinois, and another MOOC (Massive Open Online Course) of your choosing. Examples of other MOOCs are found on websites like edX.org or coursera.org among others. This second course will be completely asynchronous and will likely not include a hands-on component. Throughout

