**AEE 1201 – Introduction to Aerospace Engineering**

**“STUDENTS TEACHING ENGINEERING” GROUP PROJECT**

**Preliminary Report (Part 1 of the Project) (50 points)**

**Learning Objectives for Group Project**

1. Allow students to exercise curiosity, make connections, and create value while developing a product or “visual aid” to illustrate an aerospace concept or emerging trend.
2. Increase student familiarity with the fabrication facilities on campus and available CAD software.
3. Build fabrication experience typical of small student projects and increase confidence in solving open-ended problems.
4. Identify lessons learned about fabrication and working in teams.
5. Expand student personal networks, and provide opportunities to practice communication and professional skills in a team setting.

**2020 Project Guidelines: Social Distancing and mixed learning modes**

1. Staying safe and following established social distance guidelines and other school rules are the #1 priorities when completing this project. The instructor can work with groups to tailor the assignment if any unique situations present themselves.
2. Groups will probably contain a mix of in-person and remote learners. Each individual in the group needs to contribute to the project and write some part of the report to receive credit for the assignment. Identify authorship of each paragraph or section in the headings, like this:

“Student Design Center (Timur) …”

“Aerospace concept to be demonstrated (Robinson)” ….

**Group Project Grades vs Individual Project Grades:**

It is OK if some students have more skills and experience than others, but everyone needs to engage with their group and find a way to add value to the project. In most cases, all members of the group will receive the same grade, but individuals who contribute little or nothing to the project will receive a reduced grade or zero grade on the project.

Any student that has a legitimate reason that he/she is unable to support his/her assigned group as planned should notify the group and the professor as soon as possible, preferably no later than 7 days before the next due date. Last-minute excuses dealing with problems of a routine nature will be considered a failure to plan, and will not be well received.

**Submission Requirements. MS Word file**

**Preliminary Group Report: Required Outline**

*Each group member should write at least one part of the report. Identify authorship of each paragraph or section in the headings.*

1. **Cover page**

Include project title, group name (optional) and number, and names/ pictures of group members who participated in the project.

1. **“Making Facilities” at Florida Tech.**

Describe facilities at Florida Tech that students can use to make things for class or personal projects, including the Harris Student Design Center (HSDC), Machine Shop, and Evans Library Digital Scholarship Library (DSL).

Include appropriate website links related to the space and/or available training. If anyone in the group has signed up for HSDC training to learn how to use the equipment, identify that here. (This is optional- not required).

If some members of the group are on campus and facilities are open, students are encouraged to visit the Harris Student Design Center (HSDC) and Evans Library Digital Scholarship Library (DSL), take a selfie, and include the picture in your report. (Not required for 2020)

1. **Sharing Ideas: what could we make to teach an engineering concept?**

Each member of the group should write a short paragraph describing an idea for making a “visual aid” or demonstrator to explain an aerospace or general engineering concept. OK to look for inspiration on the internet, and OK to talk to others for ideas. Purchasing a pre-made item to use as a visual aid is not an allowed option.

 Each student in the group must offer one idea and add their name to show their contribution to receive any credit for the assignment.

1. **Proposed Visual Aid and how you will make it.**

 Of the concepts presented, identify which idea the group would like to attempt to make, and how you plan to make it.

No funding will be provided for the project, but assume free 3D printing is available on campus and some recycled items or scrap raw materials may be available at the HSDC. If the entire group is learning remotely, the visual aid can be made from items at someone’s home.

1. **Group Planning for Part 2 of the Project:**

Describe how the group will organize to complete Part 2 of the assignment, which will include the following:

1. Photos of the fabricated visual aid and a description of how it was made.
2. An explanation of the aerospace or engineering concept you are trying to teach
3. A CAD model of at least one part of your visual aid (your choice of software)
4. A photo or screenshot of group member(s) using the visual aid to teach the concept to while meeting social distancing guidelines (a virtual session is OK using Zoom, WhatsApp, or other software)
5. Lessons Learned from the project
6. Two presentation slides summarizing the project