

**Fond du Lac Tribal and Community College  
COURSE OUTLINE FORM**

**Updated 01/21/16**

Please return this form to the college vice president of academic affairs and the chairperson of the Academic Affairs and Standards Council (AASC)

**1. Prepared by:** \_\_\_\_\_

**2. Date submitted:** \_\_\_\_\_

3. Date approved: 04/07/16      Date revised \_\_\_\_\_

**4. Department/discipline:** CSCI

**5. Department(s) endorsement(s):** \_\_\_\_\_  
(Signatures of the person(s) providing the endorsement are required.)

6. Course Title: Introduction to Engineering: Aerial platforms  
Abbreviated course title (25 characters or less): Intro to Eng: Aerial Platforms

7. Course Designator: CSCI      8. Course Level: 1025

9. Number of Credits: Lecture \_\_\_\_\_      Lab 1

10. Control Number (on site) 25      Control Number (online) \_\_\_\_\_

11. Catalog/Course description:

Learn to design and build a high-powered rocket and high-altitude balloon payload in this hands-on course. Includes discussion of aerospace concepts, sensors and programming, and the ethics of flight. Requires travel to rocket launch event.

12. Course prerequisite(s) or co-requisite(s): Accuplacer scores/ Other courses

Prerequisite(s):

Co-requisite:

13. **Course Materials** (Recommended course materials and resources. List all that apply, e.g. textbooks, workbooks, study guides, lab manuals, videos, guest lecturers).

To be determined based on applicable and current resources available.

14. **Course Content** (Provide an outline of major topics covered in course)

What is aerospace?  
Current activities in aerospace engineering  
Physics of flight  
Aerial systems – design and building techniques  
Sensors and programming  
High powered rocketry  
High altitude ballooning  
Ethics of aerial data acquisition

15. **Learning Goals, Outcomes, and Assessment**

At FDLTCC we have 4 Competencies Across the Curriculum (CAC) areas. They are as follows:

- A. Information Literacy (the ability to use print and/or non-print tools effectively for the discovery, acquisition, and evaluation of information)
- B. Ability to Communicate (the ability to listen, read, comprehend, and/or deliver information in a variety of formats.)
- C. Problem Solving (the ability to conceptualize, apply, analyze, synthesize, and/or evaluate information to formulate and solve problems.)
- D. Culture (knowledge of Anishinaabe traditions and culture, knowledge of one's own traditions and culture, knowledge of others' traditions and cultures, culture of work, culture of academic disciplines and/or respect for global diversity.)

Course Learning Outcomes will fulfill the identified competencies.

*Course Learning Outcomes.*

Upon completion of this course, the student will be able to:

- 1. Build a high-powered rocket suitable for launch. (C)
- 2. Build a balloon payload suitable for launch. (C)
- 3. Discuss the ethics of flight. (B, D)
- 4. Analyze data retrieved from flight of aerial platform. (A, C)

16. **Minnesota Transfer Curriculum (MnTC):** If this course fulfills an MnTC goal area, state the goal area and list the goals and outcomes below:

See [www.mntransfer.org](http://www.mntransfer.org)

Goal Area(s): \_\_\_\_\_

Does this course require additional material for specific program requirements?

If yes, please provide.