

Syllabus: Small Unmanned Aircraft Systems

Geography 1060 - Fond du Lac Tribal and Community College – Summer 2022

Syllabus and schedule are subject to changes at the discretion of the course instructor.

Instructor

Dr. Carl M. Lemke Oliver Sack (he/they). I prefer to be called Carl; if you feel more comfortable referring to me by my last name, just use Sack (as in Dr. Sack and Professor Sack).

Contact Information

Email: carl.sack@fdltcc.edu. I reply to all student emails within 24 hours.

Cell Phone: (608) 712-8335. Call or text at any time; you will not bother or disturb me. If you call and I don't answer, please leave a voicemail. I generally reply to voicemails and texts within a few minutes to a few hours.

Office Hours

12-1 PM Tuesdays and Wednesdays, or by appointment, in Room W222 on campus or via Zoom at <https://minnstate.zoom.us/j/95030241442>.

Class Meetings and Attendance

1-6 PM Wednesdays, in Room 228 on campus. We will spend approximately half of each session on lecture and discussion, and half the session on flying practice (outside weather permitting, or in the gym during inclement weather).

Course Overview

This course prepares students for the FAA Remote Pilot Certificate exam, which is legally required to fly UAS (drones) commercially. Learning materials cover tested topics including regulations, airspace, weather, operations, aircraft performance, and decision-making. Students will practice flying a drone under close instructor supervision.

Course Goals

1. Safely pilot a small unmanned aircraft
2. Determine whether drone flight is openly permitted, requires ATC authorization, or is forbidden in a given airspace
3. Accurately judge whether drone flight is advisable given current weather conditions
4. Read and correctly interpret aeronautical charts
5. Operate unmanned aircraft ethically and in compliance with all applicable regulations without transgression

6. Pass the FAA Remote Pilot Certification exam to earn a Remote Pilot License (on your own after completing the course)

Learning Resources

[FAA Remote Pilot—Small Unmanned Aircraft Systems Study Guide](#) – Developed in 2016, this is still the best available guide to topics on the FAA Remote Pilot License initial knowledge exam.

[14 CFR Part 107 U.S. Code of Federal Regulations](#) – The official rules for drone pilots.

What you can expect from me

I possess a current FAA Remote Pilot License and approximately three years of limited flight experience. I have taken and passed the Remote Pilot Exam twice, so I know what's on the exam. However, I am by no means an expert drone pilot—we will learn together. I have a decade of experience teaching at the college level, especially geographic information systems tools and technologies. I will do my best to meet your needs as a learner and communicate course expectations fully and openly.

What I Expect from You

This is a 2-credit (1 lecture, 1 lab) college course. The summer term is half as long as a regular semester. Since we only meet once a week, it is important that you attend every class meeting. If you have to miss, please notify me in advance. You will be given an in-depth make-up assignment to complete. **Four missed classes will result in a failing grade and request to withdraw from the course.** I expect you to commit *four hours per week* outside of class to studying the exam material. Please communicate with me promptly if you are struggling with course requirements. If you need accommodations for a disability, please contact our disability services coordinator as per the Disability Notice below.

Course Feedback

Your direct and timely feedback will help me improve the class. I am open to any suggestions you have both during class meetings and more privately via email, phone, or a one-on-one Zoom meeting. If you are experiencing a problem, the sooner you let me know, the easier it will be to address.

Course Activities

The topic sequence is listed in the schedule at the end of the syllabus. Course activities will include:

Lectures

Each class period will include a lecture on a remote pilot exam topic. Lectures will include some interactive elements, such as reading aeronautical charts and weather

forecasts. After each lecture, there will be an exercise to help you review and retain the concepts in the lecture.

Readings

You will be assigned sections of the FAA study guide and Federal regulations to study with each lecture.

Quizzes

An ungraded practice quiz on each lecture and study guide section will be posted to D2L after the lecture is given. You may take the practice quiz as many times as you like to help you study. The quiz will then be given in closed-book format at the start of the next class period for a grade.

Final Exam

There will be a Final Exam during the last class period (July 20). The exam will be closed-book and will feature questions covering all course topics.

Flight Practice

Each class will include time to fly a drone. We will practice developing a flight plan, pre-flight checks, calibrating the UAV, flight roles, and flying under various conditions.

Grading

Percentages of your final grade:

- Attendance and participation: 50% (**4 missed classes = automatic F**)
- Quizzes: 30%
- Exam: 20%

Final grade breakdown:

- A: 90-100%
- B: 80-89%
- C: 70-79%
- D: 60-69%

I reserve the right to curve grades upward based on the class distribution of final grades. You will never get a lower grade based on your score than what is indicated above.

Makeup Work

If you miss a class, you may take the quiz given during that class during the next class period without penalty. You will also need to complete a written makeup assignment to receive the attendance points for the missed class. If you miss the last class of the semester, a makeup

exam will be held in person, and the makeup assignment will be due, on Friday, July 22. No makeup work will be accepted after July 22.

Plagiarism

You may not copy others' work without attribution/citation or have others complete your work for you. If you copy text, it must be in double-quotes ("") with credit given to the original author, and should account for a small minority of your submission. You must appropriately cite all data sources on your maps and gain permission from the data owner if required by its license. There are no team-based assignments in this course; you must submit your own unique product for each assignment. Plagiarism, or presenting the work of another as your own (a.k.a. "copying"), results in an F for this course and is subject to any other disciplinary actions mandated by this institution and the Minnstate system.

Disabilities Notice

Fond du Lac Tribal & Community College is committed to providing equitable access to learning opportunities for all students. Under the Americans with Disabilities Act and Section 504 of the Rehab Act, Fond du Lac Tribal & Community College provides students with disabilities (e.g., mental health, attentional, learning, chronic health, sensory or physical) reasonable accommodation to participate in educational programs, activities or services. Students with disabilities requiring accommodation to participate in class activities or meet course requirements should first complete an intake form and necessary requirements with Nancy Olsen, Disability Services coordinator, to establish an accommodation plan. She can be reached at nancy.olsen@fdltcc.edu or 218-879-0819.

Sexual Violence

Fond du Lac Tribal & Community College is committed to providing an environment free of all forms of discrimination and sexual harassment, including sexual assault, domestic and dating violence, gender or sex-based bullying and stalking. If you or someone you know has experienced gender or sex-based violence (intimate partner violence, attempted or completed sexual assault, harassment, coercion, stalking, etc.), know that you are not alone. Fond du Lac Tribal & Community College has staff members trained to support survivors in navigating campus life, accessing resources, providing accommodations, assistance completing with protective orders and advocacy. For more information regarding the Campus Security Report, the following link will give you a report on the Clery Compliance and Security Report at FDLTCC: <http://fdltcc.edu/about-us/policies-reports/campus-security-policies-reports/>

Please be aware that all Fond du Lac Tribal & Community College employees are required to report any incidents of sexual violence and, therefore it cannot guarantee the confidentiality of a report, but it will consider a request for confidentiality and respect it to the fullest extent possible. If you wish to report sexual misconduct or have questions about school policies and

procedures regarding sexual misconduct, please contact Anita Hanson, Dean of Student Services, at 218-879-0805 or anita.hanson@fdltcc.edu.

Course Schedule

Subject to change at the discretion of the instructor

(Unit) Date	Quiz / Topic / Activity (each day includes flight practice time)
(1) 6/1	None / UAV Flight Regulations / Discussion
(2) 6/8	Quiz 1 / Airspace and Flight Restrictions / Reading Sectional Charts I
(3) 6/15	Quiz 2 / Airports, Air Traffic Control, and LAANC / Reading Sectional Charts II
(4) 6/22	Quiz 3 / Weather / Reading Weather Forecasts and Maps
(5) 6/29	Quiz 4 / UAV Loading and Performance / Payload Testing
(6) 7/6	Quiz 5 / Aeronautical Decision Making and Crew Resource Management / Role Playing
(7) 7/13	Quiz 6 / UAV Flight Costs, Risks, and Liabilities / Calculate Costs and Apply for FAA Tracking Number
(8) 7/20	Quiz 7 / UAV Types, Technology, and Applications / Final Exam
7/22	Makeup exam date