PHSX 191: Introduction to sUAS  
Northstar Jet,  
UM Autonomous Aerial Systems Office

Course Information
- Sponsor: Department of Physics and Astronomy
- Credits: 1 (One)
- Instructor: Jennifer Fowler. Jennifer.fowler@umontana.edu
- Course Location: Northstar Jet Hanger 7
- Course Summer Session: May 21st – June 22nd, 2018
- Course Dates: Tuesdays and Thursdays, May 29th – June 21st, 2018
- Course Times: 6-8pm

Overview
This course will introduce students to the fundamental concepts of becoming a remote pilot. Students will learn about basic aerodynamic principles, Federal Aviation Regulations, aeromedical factors, and aviation human factors. Students will learn how to interpret and understand weather products, as well as understand basic weather concepts. Air Traffic Control and airspace operations will be discussed to ensure a thorough understanding. Students will also discuss aviation safety and how human factors influence the safety of aviation.

Prerequisites
This program is intended for those who have some, or no, aeronautics experience.

Course Materials
- Text: ASA Remote Pilot Test Prep Guide (provided by Northstar Jet)
- UAS flight equipment/supplies will be provided by the Autonomous Aerial Systems Office (AASO). Students may bring their own aircraft provided they sign a release of liability.
- Exam: Final exam is taken at a designated FAA facility (provided by Northstar Jet)

Learning Objectives
Upon completion of the course, the student will
- define his or her desire to pursue employment or a career within the aeronautics sector, based on instructors’ assessment related to the
student’s skills and proficiency, and student’s personal evaluation of an aeronautics-related career.

- understand the current Federal Aviation Administration (FAA) regulations and requirements that govern, and define, safe and lawful Unmanned Aviation operations within the United States.
- gain an understanding of the working components, systems, procedures and the physics under which unmanned aircraft operate through course work and hands-on experience with UAS flight time.
- gain a detailed understanding of the FAA Small Unmanned Aviation Systems (sUAS) requirements for attaining a Remote Pilot License and be prepared to take the exam at an FAA designated testing center.

Schedule of Course Topics and Activities
The course will consist of lectures and student unmanned aircraft flight operations. This course loosely follows the ASA Remote Pilot Test Prep curriculum as approved by the FAA.

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<td>May 29th</td>
<td>Introduction to National Airspace System</td>
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<td>May 31st</td>
<td>National Airspace System and Weather</td>
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<td>Week 2:</td>
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<td>June 7th</td>
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<td>June 19th</td>
<td>Sensors and Workflows</td>
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<td>June 21st</td>
<td>Review</td>
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Learning Assessments
- Homework (10 points/assignments) 7 assignments 70 points
- Quizzes (10 points/topic) 6 iclicker quizzes 60 points
- UAS Flight operations 5 maneuvers/5 procedures 50 points
- The FAA Knowledge test for remote pilot exam 100 points
  (students will make the exam results available to the instructor for inclusion in the final grade)

Total points: 280

A  93% – 100%
A- 90% - 92.9%
B+ 87% - 89.9%
B  83% - 86.9%
B- 80% - 82.9%
C+ 77% - 79.9%
C  73% - 76.9%
C-  70% - 72.9%
D+  67% - 69.9%
D   63% - 66.9%
D-  60% - 62.9%
F   59.9% and lower

- **Homework and quizzes** will be graded by the instructor, with points assigned equally per questions.
- **Flight operations** points will be assigned the Pilot in Command Instructor based on the student’s flight proficiency.
- **Class Attendance** – Is strongly recommended. If you miss a class, please contact the instructor immediately, giving as much notice as possible for consideration of make-up homework, quizzes, etc. Incompletes for the course will be given only for medical or family emergencies, but must be completed within 1 year (http://www.umt.edu/catalog/academics/academic-policy-procedure.php).
- **Academic Dishonesty** - All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at: http://life.umt.edu/vpsa/student_conduct.php.
- **Reasonable Accommodation** - For reasonable accommodation please see instructor as soon as possible. Disability Services for Students can assist both of us in the modification process. For more information, visit the Disability Services website (http://www.umt.edu/dss/default.php).