

Assistant Professor John Evans  
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Office Hours: Tuesday/Thursday, 12:30 pm – 2:00 pm

Tuesday/Thursday, 11:00 am – 12:15 pm

ECCR 131

Desire2Learn ([learn.colorado.edu](http://learn.colorado.edu))

To establish a fundamental understanding of the mathematics and physics of turbulent flows and to introduce the concepts and analytical tools needed in developing turbulence models and turbulence simulation methods.

This class requires a graduate course in fluid mechanics such as ASEN 5051 / MCEN 5021. Topics covered should include kinematics of fluid flows, conservation laws, vorticity dynamics, theory and application of irrotational flows, dynamic similarity, viscous flows, and boundary layers. A working knowledge of vector calculus, Cartesian tensors, and Fourier transforms is also required.

, Pope, Cambridge



***Homework is due at the start of class on the due date*** Late assignments will not be accepted, though there will be a five-minute grace period. If a student will be unable to attend class, he or she may submit his or her homework early by slipping it under the instructor's door.

Collaboration is permitted on homework. This means students may discuss the means and methods for solving problems and even compare answers, but students are not free to copy someone's assignment. The work that a student turns in must be his or her own – copying is not allowed for any assignment and will not be tolerated. Students who are caught copying (or providing his or her assignment to another) will receive an "F" for the course and reported to the Dean's office for further punitive action.

The midterm examination will cover all "Turbulence Theory" material in the course including lecture, discussions, and homework. The midterm examination will be take-home and open-book.

Collaboration on the midterm examination will not be tolerated. Students who are caught in these activities will receive an "F" for the course and reported to the Dean's office for further punitive action. Students are free to ask the instructor any clarification questions.

A literature review project will be assigned during the fourth week of the semester. For this project, students will review a highly-cited journal article on either turbulence theory or turbulence modeling and simulation. The deliverable of the project will consist of a review paper

Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. In this class, you must let the instructors know of any such conflicts within the first two weeks of the semester so that we can work with you to make arrangements. See [campus policy regarding religious observances](#) for full details.

Students and faculty each have responsibility for maintaining an appropriate learning environment, not only while in class, but  
Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with

John Evans

Date: December 27, 2017