

# 14:650:471 Aircraft Flight Dynamics

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## Part 1: Course Information

### Instructor Information

**Instructor:** Laurent Burlion, Ph.D., Assistant Professor

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### Course Description

The goal of this course is to develop an understanding of the fundamentals of the dynamics and control of aircraft with emphasis on conventional airplane performance and stability, both static and dynamic. The topics to be covered include:

- (i) Basic Concepts,
- (ii) Aircraft Static Stability and Control,
- (iii) Aircraft Equations of Motion,
- (iv) Aircraft Longitude Motion,
- (v) Aircraft Latitude Motion.

### Prerequisite

- (14:440:222 Engineering Mech. or 14:440:292 Honors Eng. Mech.-Dyna) and (01:640:421 Adv. Calc. for Engineering).

### Textbook & Course Materials

#### Required Text

"*Flight Stability and Automatic Control*" by Robert Nelson, McGraw-Hill Science, 1997.

#### Recommended Texts & Other Readings

- "*Introduction to Aircraft Flight Mechanics: Performance, Static Stability, Dynamic Stability, Classic*", by Thomas R. Yechout, AIAA Educational series, 2014.
- "*Stick and rudder*", by Wolfgang Langewiesche, McGraw-Hill Education, 1990.

## Course Requirements

- An electronic calculator (no other electronic device is permitted to be used during any quiz or exam).

## Part 2: Grading Policy

### Graded Course Activities

Homework is regularly assigned but neither collected or graded.

All quizzes and exams are open book/open notes. The only admissible materials during quizzes and exams are 1) the course textbook, 2) the course lecture notes, 3) homework solutions, 4) notes prepared by the person taking the quiz/exam, and 5) an electronic calculator.

**DO NOT FORGET** to bring HARDCOPIES of all relevant **TABLES** in the **APPENDICES** of the book to each quiz/exam since you will not have access to the electronic version of the course.

Points	Description
10	Weekly quizzes
30	Mid-term exam (04/02/2019)
30	Project
30	Final exam
100	Total Points Possible

The quiz is scored on a scale of 0 to 10 with no possible score between 1 and 5. The two worst quizzes scores will not be counted.

Any questions regarding the **quiz score** must be discussed with the TA within two weeks of the date of return of the quiz to the class and no changes in the quiz score will be considered after these two weeks.

Any questions regarding the **midterm and project scores** must be discussed with the instructor within two weeks of the date of return of these scores to the class and no changes in these scores will be considered after these two weeks.

**Inform Your Instructor of any Accommodations needed within the first two weeks of the course.**

### Commit to Integrity

As a student in this course (and at this university) you are expected to

maintain high degrees of professionalism, commitment to active learning and participation in this class and also integrity in your behavior in and out of the classroom.