## **AA528**

## Spacecraft Dynamics and Control Department of Aeronautics & Astronautics Winter 2011; Syllabus<sup>1</sup>

**Instructor:** Mehran Mesbahi

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http://faculty.washington.edu/mesbahi/pmwiki/

**Instructor's Office Hours:** W: 4-5:30 pm + by appointment

Class website: Please see: http://faculty.washington.edu/mesbahi/pmwiki/ under "courses"

Class Room: Loew 206

Class Time: M,W,F: 9:30 am-10:20 am

**Textbook:** Space Vehicle Dynamics and Control, B. Wie, AIAA Education Series, 2008 (required).

## Other useful references:

Fundamentals of Astrodynamics, R. R. Bate, D. D. Mueller, and J. E. White, Dover, 1971. Orbital Mechanics for Engineering Students, H. Curtis, Butterworth-Heinemann, 2005. Space Mission Analysis and Design, W. Larson and J. Wertz (Editors), Microcosm Press and Kluwer, 1999. Spaceflight Dynamics, W. E. Wiesel, McGraw-Hill, 1989. Spacecraft Attitude Dynamics, P. C. Hughes, Dover, 2004.

**Handouts:** I will provide hand-outs or post papers/notes on the class website on topics of interest during the course.

The topics that we will cover in this course include: rigid body kinematics and dynamics, attitude control, basic orbital mechanics, three body problem, Hill's theory, and related topics.

The class website is a living document. **Check it regularly** as its gets updated often. I will post homework assignments, thoughts, notes, references, etc., on it.

**Homeworks:** We will have bi-weekly homework problems, assigned on Fridays and due on the day the next homework is assigned. The contribution of the homework toward your class grade is 30%.

**Midterm:** We will have one midterm that contributes 40% to your class grade. The date of the midterm will be determined later.

**Project:** We will also have a project for the course; it will contribute 30% to your class grade. We will talk more about the project's scope and format.

<sup>&</sup>lt;sup>1</sup>January 3, 2011