ASTE 581 (Orbital Mechanics II) - Spring 2015

Course Syllabus

Instructor: Dr. Ryan Park
Class Location: OHE100C
Time: Thursday, 6:40-9:20 PM
Office Hour: TBD
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Please include “ASTE581” in the subject.
Course Website: https://www.uscden.net

Required Text

There is no required textbook for this class.

Prerequisites

ASTE 580 (Orbital Mechanics I)

Course Description

This course covers advanced concepts and methods applicable to practical and realistic astrodynamics problems. Topics include: the two-body problem, Keplerian orbits, the N-body problem, the 3-body problem, planetary equations of motion, numerical integration, linear orbit theory, stability analysis, perturbation methods, oblateness and irregular shape, uncertainty propagation, and Monte-Carlo simulation. Other topics as time permits.

Grading

- Homework: 50%
- Project: 50%
Project

- There is no final exam in this course. Instead there is a final project which requires a minimum of 40 hours of effort.

- The project topic must be related to astrodynamics, e.g., mission design, maneuver design, navigation, etc.

- Each student must submit a project topic by 01/26/2014 (EOD) including the objective and proposed method.

- An optional project progress report is due on 03/09/2014.

- The final project report (including programs) is due on 05/08/2014 (EOD). The report must be typed and concise as possible. Font size 10 is preferred.

References


