EE 570: Location and Navigation Course Overview

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January 18, 2014

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Course Outmie	

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Grading

Course Description

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EE 570: Location and Navigation

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• Required Textbook:

Principles of GNSS, Inertial, and Multisensor Integrated Navigation Systems, Second Edition, Paul D. Groves, 2013.

- Recommended Software: MATLAB or Octave
- Lectures: Tues and Thu 12:30-13:45 Workman 116
- Instructor: Aly El-Osery

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This course has been initiated, developed and previously co-taught by Dr. Stephen Bruder and myself. Due to scheduling conflict we were not able to co-teach the course this semester. Because of Stephen's dedication and attention to details, my life is a lot easier covering a good portion of the course.

Course Outline

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- Homework assignment:30%
- Two mini-projects: 10% each
- Final project: 30%
- Final report: 10%
- Class participation: 10%

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This course will cover the basics of terrestrial location and navigation with an emphasis on practical exposure to technology.



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- Introduction to navigation
- Coordinate frames
- Kinematics
- Earth surface and gravity
- Frame transformation

Ch. 2

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- Accelerometers
- Gyroscopes
- Error Characteristics
- Inertial navigation equations

Ch. 4& 5

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• GPS	Ch. 8
 Kalman filtering 	Ch. 3
 Integration architecture)
• System Model	Ch. 14-16
 Measurement model 	J

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