EE 565: Position, Navigation and Timing Course Overview

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January 17, 2023

		Course Description
Aly El-Osery, Kevin Wedeward (NMT)	EE 565: Position, Navigation and Timing	January 17, 2023 1 / 7



- Reference Textbooks:
 - Principles of GNSS, Inertial, and Multisensor Integrated Navigation Systems, Second Edition, Paul D. Groves, 2013.
 - Fundamentals of Inertial Navigation, Satellite-based Positioning and their Integration, Aboelmagd Noureldin, Tashfeen B. Karamat and Jacques Georgy.
- Recommended Software: MATLAB or Octave
- Lectures: Tues and Thu 11:00-12:15 Workman 117
- Instructors: Aly El-Osery and Kevin Wedeward

Course Outline	Grading	Course Description
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- Homework assignments: 30%
- Midterm exam: 20%
- Projects: 40%
- Class participation: 10%

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Course Description

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

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- Accelerometers
- Gyroscopes
- Error Characteristics
- Inertial navigation equations

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• GPS

- Kalman filtering
- Integration architecture
- System Model
- Measurement model

		Course Description
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