

EE 565: Position, Navigation and Timing

Course Overview

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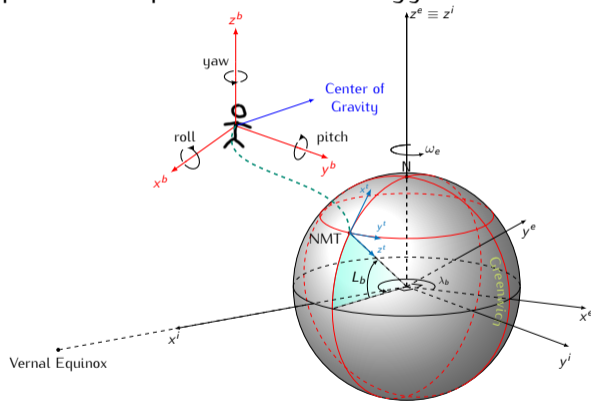
In Collaboration with
Stephen Bruder
Electrical and Computer Engineering Department
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Prescott, Arizona, USA

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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 11:00-12:15 Workman 117
- Instructor: Aly El-Osery and Kevin Wedeward

- Homework assignment: 30%
- Midterm: 20%
- Two mini-projects: 10% each
- Final project: 10%
- Presentation/Paper: 10%
- Class participation: 10%

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



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

} Ch. 2

- Accelerometers
- Gyroscopes
- Error Characteristics
- Inertial navigation equations

} Ch. 4 & 5

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