ASEN 6091 / ECEN 5014
Global Navigation Satellite System (GNSS) Receiver Architectures

Spring Semester 2021
Scheduled Lecture Times: Mon & Wed: 16:10 – 17:25

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Course Overview

GNSS is a generic term describing the expanding field of satellite-based navigation/timing systems. The most prevalent of these systems currently is GPS which is owned and operated by the US. However, Russia maintains a system known as GLONASS. Both the European Union and China are developing their own GNSS system designated Galileo and Beidou (Compass), respectively. Lastly, there are a number of regional GNSS augmentation systems including but not limited to: WAAS (US), QZSS (Japan), EGNOS (EU), India (GAGAN) each of which provides GNSS corrections and, in some cases, ranging information.

There are a multitude of GPS receivers on the market today. Often times these receivers are embedded for monitoring and control and often, unfortunately, tre TJ 0.002 Tc 0.063 Tw 39.87 0 Td [( )2 ( )10.6 ( )6.6 ( )8.3 ( )2.6 ( )10.6 (a solid background in using Matlab. Some knowledge in signal processing, particular time/frequency domain transforms, and control theory would be helpful. Lastly, background on GPS or GNSS in general (such as ASEN 5090) is expected, but not required, and will definitely aid in the overall understanding of the technology.

Textbook (not required)

A Software-Defined GPS and Galileo Receiver: A Single-Frequency Approach; K. Borre, D. Akos, N. Bertelsen, P. Rinder, S. H. Jensen; 2007;

SYLLABUS STATEMENTS

1) Classroom Behavior

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