**Course Topics**

**EEE 506: Digital Spectral Analysis**

**Prerequisites:** EEE 350 (or equivalent) - basic knowledge in random signals

**Catalog Course Description:** Principles and applications of digital spectral analysis: estimation theory, least squares, random sequences, parametric, and nonparametric methods for spectral estimation as applied to spectral and spatial estimation

**Course Topics:**

Spectral and spatial analysis

Introduction to estimation theory (Cramer-Rao bound)

Deterministic spectral analysis

Response of linear discrete systems to random inputs

Sample spectrum autocorrelation estimates

Periodograms

Windowing

AR, MA, and ARMA models,

Yule-Walker equations,

Eigenanalysis methods

MuSiC algorithm

The MVDR algorithm

Calibration

Random sampling

Compressive sensing (compressed sampling)