

EC716 Spring 2021 Information Sheet/Syllabus

INSTRUCTOR: Prof Hamid Nawab

ASSIGNED CLASSROOM: PHO 202

MAJOR LECTURES: Mondays 10:10AM-11:55AM *Live on Zoom* for all EC716 students. These lectures are *also recorded* for later review by students.

MINOR LECTURES: *Recorded lectures* (45 minutes each) for all EC716 students to be viewed on weekends as part of assigned homework.

IN-PERSON PROJECT DISCUSSIONS: Wednesdays 10:10AM-11AM in PHO 202 (You may attend this OR the Remote Discussion described next but not both).

REMOTE PROJECT DISCUSSIONS: Wednesdays 11:05AM-11:55AM *Live on Zoom* (You may attend this OR the In-Person Discussion described above but not both). There will be no recording of these discussions

COURSE OBJECTIVE: The main objective of this course is for students to *study and experience* advanced design, implementation, debugging, and testing in digital signal processing as viewed through the *lens of various application contexts*.

COURSE LEARNING OUTCOMES:

Upon successful completion of this course you should be able to:

- 1) *Conduct DSP Literature searches* in given application contexts
- 2) *Formulate DSP requirements/specifications* to meet the needs of a given application
- 3) *Design DSP algorithms* to meet DSP requirements/specifications.
- 4) *Implement DSP algorithms* in software.
- 5) *Debug implemented DSP algorithms* for desired DSP functionality.
- 6) *Test implemented DSP algorithms* for desired application functionality

APPLICATION CONTEXTS:

- 1) Audio or Image Compression
- 2) Audio or Image Restoration
- 3) Audio beamforming or Video Compression

In EC716 this term, you are required to *propose, conduct, and report* a project in each of the 3 application contexts. The 2-page *Proposals* for each of the three projects are due by *midnight on March 25*. The 5-page *Reports* for each of the three projects are due by *midnight on April 28*.

GRADING:

Your course grade will depend 50% on the quality of your 3 *Proposals* and 50% on the quality of your 3 *Reports*. Grading rubrics will be provided for each proposal and report as the term progresses. Historically, most students receive an A or A- in EC716.