

Fall 2016

EEE 598/SHS 598 - Speech and Audio Production, Processing and Perception

Class Times: Tuesday 4:30-7:15
Room: Coor 2247

Instructor: Dr. V. Berisha
Office: Coor 3472
e-mail: visar@asu.edu,
Office Hours: Tuesdays 1:30-4:30
Additional hours available by appointment

Course Objectives and Learning Outcomes:

This principal objective of this project-based course is to learn and apply (in Matlab) concepts from Speech Signal Processing. The course will cover a number of important topics, including:

- Review of Digital Signal Processing
- Speech production
- Computational models of speech analysis/synthesis (STFT, LPC)
- Computing and modifying important speech parameters (pitch, formants, envelope, etc.)
- Basic computational psychoacoustics
- Basic machine learning
- Health applications of speech processing

This course is cross-listed between the School of Electrical Computer and Energy Engineering (ECEE) and the Department of Speech and hearing science (SHS).

Groups

All projects in the course will be completed in groups of 2. One project will be submitted per group although it is expected that both individuals will contribute to the project.

Required Readings

Copies of required readings will be handed out or posted on Blackboard. It is your responsibility to get the readings if you miss a class.

Grades Your final grade will be determined as follows:

50% Homework (4 assignments at 25 points each) – Homework assignments will cover concepts discussed in class and *will likely require that students spend additional time outside of class further researching these topics*. The goal of the assignments is to apply and implement these concepts in Matlab. The homework assignments are purposefully open-ended and there isn't a single correct answer to each question (but there are many wrong answers also). The assignments will be completed in groups of 2.

50% Final Project (100 points) – This class consists of a final project to be submitted on the last day of class. Each group will discuss their project idea with me prior to starting.

100-98% = A+
97-90% = A
89-88% = B+
87-80% = B
79-78% =C+
77-70% = C
69 -61 % = D
60 and below=F

Academic Conduct and Integrity:

All students are expected to be familiar with and abide by the university policies on plagiarism and academic code of integrity. The *Student Code of Conduct* and Student Disciplinary Procedures can be reviewed online: <http://www.asu.edu/aad/manuals/ssm/ssm104-01.html>. Cheating and plagiarism of any form will **not** be tolerated. Any instance of plagiarism/ cheating will result in a failing grade for the course.

Attendance and Participation:

Attendance will not be taken, but students are expected to attend class regularly. All assignments will be submitted through Blackboard. If an assignment is missed a grade of zero will be given. Make-up assignments are only possible with excused absences. If an assignment is missed without an *excused* absence, a final grade of zero will be given. An absence will be deemed excused if e-mail notification was provided prior to class or a doctor's note is provided for an unexpected absence. Only one assignment may be missed with no penalty.