

# REC 235: ACOUSTICS FOR ENGINEERS

## Citrus College Course Outline of Record

Heading	Value
Effective Term:	Fall 2021
Credits:	3
Total Contact Hours:	54
Lecture Hours :	54
Lab Hours:	0
Hours Arranged:	0
Outside of Class Hours:	108
Prerequisite:	REC 105, REC 115, REC 125, REC 135, REC 145.
Corequisite:	REC 205, REC 215, REC 225, REC 245.
Transferable to CSU:	Yes
Transferable to UC:	No
Grading Method:	Standard Letter

## Catalog Course Description

This course is a study of Acoustics principles and the physics of sound. It includes sound propagation, hearing and sound perception, room resonances, acoustic calculations, studio design and acoustical treatments. 54 lecture hours.

## Course Objectives

- Identify the sonic properties of materials used in live venues and recording studios
- Identify properties that affect room acoustics and listener perspective
- Correlate the properties of room acoustics with effects processors

## Major Course Content

1. Sound Propagation – The Waveform Model, sound measurement, frequency amplitude and wavelength.
2. Hearing and Sound Perception – human hearing and psychoacoustics.
3. The Physics of Sound – sound behavior, reflection, reverberation, absorption, refraction and diffusion.
4. Controlling Noise – acoustic isolation, de-coupling and transmission loss.
5. Room Modes – resonances in enclosed spaces, determining modal frequencies.
6. Acoustics of the Recording Studio – interior treatments, controlling reflections, studio and control room acoustical treatment.
7. Acoustic Calculations – calculating sound pressure, wavelength, reverberation times and modal frequencies.

## Suggested Reading Other Than Required Textbook

Industry related periodicals and journals.

## Examples of Required Writing Assignments

Students will complete multiple 3-4 page essays on acoustics principles and evaluation techniques.

## Examples of Outside Assignments

Students will complete acoustical analysis of performance venues and sound studios.

## Instruction Type(s)

Lecture, Online Education Lecture