



**Course name:** EE484 Audio Engineering and Acoustics

**Department:** Electrical and Electronics Engineering

Semester  
8

Methods of Education

Credit (ECTS)

Lecture	Study Time	Quiz	Exam (incl. Preparation)	Total
39	40	36	35	150

5

Language	English		
Compulsory/Elective	Elective		
Prerequisites	None		
Course Contents	Cascode Amplifiers, Differential Pair Amplifiers, Frequency Response, Feedback in Electronics Circuits, Oscillators		
Course Objective	The students obtain sufficient background and technical knowledge to understand contemporary issues in audio engineering		
Learning Outcomes and Competences	<b>Students who pass the course will be able to:</b> Identify acoustic and electronic concepts; describe waveform properties; explain microphone characteristics and placement; describe studio set-up and signal routing; explain console and recording operation techniques; and identify basic recording studio procedures		
Textbook and /or References	Sound System Engineering 4e, Davis, Patronis. ISBN-13: 978-0240818467		
Assessment Criteria		If any, mark as (X)	Percentage (%)
	Midterm Exams	X	25
	Quizzes	X	25
	Homework		
	Projects	X	25
	Term Paper		
	Laboratory work		
	Other		
Final Exam	X	25	
Instructors	Assoc. Prof. Dr. Asaf Behzat ŞAHİN		

**Weekly Schedule**

Week	Subject
1	Intro, audio and acoustics, Fundamental quantities, Fourier review, mass and vibration
2	Damping, complex exponential solutions, forced oscillation, Resonance, electrical circuit analogies, Acoustic wave equation
3	Harmonic plane waves, intensity, impedance, Spherical waves, sound level, dB examples, Radiation from small sources
4	Baffled simple source, piston radiation, Near field, far field, Radiation impedance
5	:Speed of sound measurement, The ear and hearing, Demos, hearing and detection
6	Environmental acoustics and noise criteria, OSHA, architectural isolation
7	Relationships among music, audio, acoustics, and electronics, Audio engineering units, concepts
8	Relationships among music, audio, acoustics, and electronics, Audio engineering units, concepts
9	<b>Mid-term Exam</b>
10	Microphones, Studio electronics
11	Microphones, Studio electronics
12	Loudspeakers
13	Digital audio, CD and DVD principles, Audio DSP, Multimedia audio, MP3
14	Digital audio, CD and DVD principles, Audio DSP, Multimedia audio, MP3
15	Review (if time permits)