

EC553- Media and Entertainment Engineering

CREDIT HOURS

3 Hours

CONTACT HOURS (Hours/week)

Lecture: 2; Tutorial: 2

COURSE COORDINATOR

Dr. Ashraf Mamdouh

TEXT BOOK

A. Luther & A. Inglis, Video Engineering, Mc. Graw Hill, 2002

COURSE DESCRIPTION

Stereophonic broadcasting systems - TV scanning and broadcasting - Detailed block diagram of a TV transmitter and receiver - Color TV fundamentals - NTSC, PAL, and SECAM systems - Digital TV - HDTV and Satellite TV - Audio recording analog and digital - Compact disc and CD player - Reflection and ray tracing theory - Acoustical treatment and studio design

PREREQUISITE:

EC 322 - EC434

RELATION OF COURSE TO PROGRAM

Elective

COURSE INSTRUCTION OUTCOMES

The student will be able to:

- Understand the Theory and systems of broadcasting for audio and video.
- Understand the Analog and digital recording for audio and video.
- Understand the Room acoustics and studio design.

TOPICS COVERED

- AM and FM Transmitters: RF Transmission (low level & high level modulation) AM/FM.
- AM and FM reception: Broadcasting AM receiver, Broadcasting FM receiver.
- Stereophonic broadcasting systems: Stereophonic Transmitter and receiver, Television broadcasting (introduction and block diagram).
- TV scanning and broadcasting.
- Detailed block diagram of a TV transmitter and receiver.
- Color TV fundamentals
- NTSC, PAL, and SECAM systems: PAL system, SECAM system, NTSC color system.
- Digital TV.
- HDTV and Satellite TV
- Audio recording analog and digital.

- Video Tape recording.
- Compact disc and CD player: Gramophone plate, Compact disc, CD player.
- Reflection and ray tracing theory: Reflection in a room, Ray tracing and image source theory, Reverberation theory.
- Acoustical treatment and studio design: Acoustical treatment for concert halls and studio design.

CONTRIBUTION OF COURSE TO MEET THE REQUIREMENTS OF CRITERION 5:

Professional component Content			
Math and Basic Sciences	Engineering Topics	General Education	Other
	✓		

RELATIONSHIP OF COURSE TO STUDENT OUTCOMES:

Student Outcomes		Course aspects
A	An ability to apply knowledge of mathematics, science, and engineering	
B	An ability to design and conduct experiments, analyze and interpret data.	
C	An ability to design a system, component, or process to meet desired needs within realistic constraints such as economics, environmental, social, political, ethical, health, and safety, manufacturability, and sustainability	c ₁ c ₂ c ₃
D	An ability to function on multi-disciplinary teams.	
E	An ability to identify, formulate, and solve engineering problems	
F	An understanding of professional and ethical responsibility	
G	An ability to communicate effectively	
H	The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and social content	h ₁ h ₂ h ₃ h ₄
I	A recognition of the need for, and an ability to engage in life-long learning.	
J	A knowledge of contemporary issues within and outside the electrical engineering profession.	j ₁ j ₂
k	An ability to use the techniques, skills, and modern engineering tools necessary for electrical engineering practice.	k