

## Global Learning Semesters

### Course Syllabus

Course: BENG-280 Television

Department: Engineering

Host Institution: University of Nicosia, Nicosia, Cyprus



Course Summary		
Course Code	Course Title	Recommended Credit Hours
BENG-280	Television	3
Semester Offered	Contact Hours	Prerequisites
Spring	42	EENG-250 Electronics II. Fundamental concepts of electronic devices and circuits from an ac viewpoint.
Department	Level of Course	Language of Instruction
Engineering	Lower Division	English

### Course Description

The course seeks to develop an overall understanding of television, starting from the basic television theory to the essential fundamentals of digital video and audio, conversion, coding, interfaces, distribution and output. It will help future engineers to understand and obtain the techniques to measure and evaluate analogue and digital television signals. Modern television systems and equipment currently in use and under development will be explained to the students through the course. Specific topics covered include: the eye-brain mechanism, interlaced scanning, resolution, synchronization pulses, cathode ray tubes, TV cameras, the spectrum of the video signal, transmission standards and constraints, color television, composite video, component video, analogue color television standards (PAL, SECAM, NTSC), the TV receiver, teletext and view data, TV sound systems, the TV transmitter, television signal measurement and video waveforms, distortions in television signals, analogue audio fundamentals, distortions in audio signals, principles of digital audio and video, conversion from analogue to digital, conversion from digital to analogue, video and audio compression, MPEG, program and transport streams, digital interfaces, SDI, SDTI, 601 digital video, AES-EBU audio, embedded audio, video and audio signal distribution, HDTV and modern television systems.

### Instructor

Ms. Panayiota Kyriacou

### Course Aims and Objectives

To develop an overall understanding of television, starting from the basic television theory to the essential fundamentals of digital video and audio, conversion, coding, interfaces, distribution and output. To help future engineers to understand and obtain the techniques to measure and evaluate analogue and digital television signals.

### Teaching Methods

The course is delivered through a mixture of lectures and projects.

### Course Teaching Hours

The course is 42 hours long and is delivered in 14 weeks (3 hours/week).

## Evaluation and Grading

Homework/Projects:	20%
Mid-Term Exam:	30%
Final Exam:	50%

## Readings and Resources

### Required Textbook

Michael Robin and Michel Poulin, Digital Television Fundamentals: Design and Installation of Video and Audio Systems, McGraw-Hill, 1998

### Recommended Readings

- Eugene Trundle, Newnes TV and Video Engineer's Pocket Book, Third Edition, Newnes, 1999
- Peter Hodges, Introduction to Video Measurement, Second Edition, Focal Press, 2001
- John Watkinson, The Art of Digital Video, Third Edition, Focal Press, 2000
- John Watkinson, The Art of Digital Audio, Second Edition, Focal Press, 1994