University of Nicosia, Cyprus

Course Code MULT-152	**Course Title** Audiovisual Foundations	**ECTS Credits** 6
Department Design & Multimedia	**Semester** Fall, Spring	**Prerequisites** None
Type of Course Major Requirements	**Field** Applied Multimedia	**Language of Instruction** English, Greek
Level of Course 1st Cycle	**Year of Study** 1st	**Lecturer(s)** Despina Michael
Mode of Delivery face-to-face	**Work Placement** N/A	**Co-requisites** None

Objectives of the Course:

The main objectives of the course are to:

- Introduce students to the basic concepts of digital audio and video.
- Demonstrate the fundamental concepts required towards video and audio editing and digital movie making.
- Examine how audio and video may be represented, stored, compressed and improved.

Learning Outcomes:

After completion of the course students are expected to be able to:

1. State the basic physical concepts behind the sound and vision.
2. Associate the physical concepts of sound and vision with the recording of sound and capture of video.
3. Explain how we hear sounds and see the world.
4. Associate the way that a camera works with human visual systems and the way that a microphone works with the human hearing.
5. Digitize an analogue signal and assess compression algorithms and techniques
6. Choose the appropriate compression for particular types of videos and audio media.
7. Process and edit digital audio and video.
8. Explain foundations of 3D modeling and computer graphics.

Course Contents:

1. Human auditory system
2. Audio acquisition
    a. sampling audio signal
    b. digitization of audio signal
3. Digital audio compression
    a. compression standards
    b. comparison of compression algorithms
    c. audio formats
4. Digital audio processing
    a. filtering
    b. equalization
5. Human visual system and perception
6. Digital video comparison techniques

a. compression standards
b. comparison of codecs
c. video formats

7. Digital image and video processing
   a. image enhancement techniques
8. Video special effects and gradual transition
9. Foundations of 3D computer graphics

Learning Activities and Teaching Methods:

Lectures, Lab Presentations, Class Exercises, Discussion

Assessment Methods:

Participation & Attendance, Assignments/Homework, Midterm Examination (written), Final Examination (written)

Required Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
Nigel Chapman and Jenny Chapman	Digital Multimedia (3rd edition)	John Wiley & Sons, Ltd	2009	978-0-470-51216-6

Recommended Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
Mrinal Kr. Mandal	Multimedia Signals and System	Springer	2002	978-1-402-07270-3