

# CPIT-380 Syllabus

## Catalog Description

**CPIT-380** Multimedia Technologies

**Credit:** 3 ( Theory: 3, Lab: 0, Practical: 1)

**Prerequisite:** CPIT-285

**Classification:** Department Required

The objective of this course is to study multimedia technologies and programming methods to manipulate multimedia. Topics include creating and modifying images, modifying sounds, splicing words into sentences, reversing sounds, writing programs to generate dynamic Web pages from databases, and creating animations and movies with special effects.

### Class Schedule

Meet 50 minutes 3 times/week or 80 minutes 2 times/week

Lab/Tutorial 90 minutes 1 times/week

## Textbook

Mark Guzdial, Barbara Ericson, "Introduction to Computing and Programming in Python", Prentice Hall; 4 edition (2016)

**ISBN-13** 9780131496989

**ISBN-10** 0134025547

## Grade Distribution

Week	Assessment	Grade %
4	Homework Assignments 1	4
6	Exam 1	15
11	Homework Assignments 2	3
12	Exam 2	15
15	Group Project	20
15	Homework Assignments 3	3
15	Lab Exam	10
16	Exam	30

## Last Articulated

December 18, 2017

## Relationship to Student Outcomes

a	b	c	d	e	f	g	h	i	j	k	l	m	n
x								x	x				

## Course Learning Outcomes (CLO)

By completion of the course the students should be able to

1. Identify different color models and understand how images are digitized (a)
2. Apply modifications on pictures using DrJava tool (rotation, mirroring, gray scale, negative, posterize, blurring, blending, etc ). (i)
3. **Apply and implement Noise removal filters (average and median filters), thresholding algorithm and edge detection filters (Laplacian, Sobel, Perwitt and Rberts).** (j)
4. Apply and implement image histogram and histogram equalization algorithms on pictures. (j)
5. Apply and implement the mathematical morphology operations on binary pictures (erosion, dilation, opening, closing, boundary extraction and hole filling). (j)
6. **Identify the physics of sounds and how sounds are digitized using Niquist theorem.** (a)
7. **Apply modifications on sounds using DrJava tool (chenge volume, normalize, etc) (i)**
8. Apply and implement modifications on existing sounds to create new sounds (splicing, blending, making echo). (j)
9. Apply and implement codes to read/write to files using Java string methods (i)
10. Implement methods to get text from the web. (i)
11. Implement methods to automatically generate HTML for input data. (j)
12. Identify the psychophysics of movies. (a)
13. **Implement modification on movie frames using the algorithms of pictures.** (i)
14. **Apply the algorithms of pictures to create new movies.** (j)

## Coordinator(s)

Dr. Mounira Taileb, Associate Professor

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## Topics Coverage Durations

Topics	Weeks
Introduction to media computation	1
Modifying Pictures using Loops	1
Modifying Pixels in a Matrix	1
Conditionally Modifying Pixels	2
Modifying samples in sounds	1
Modifying Samples using Ranges	2
Combining and Creating Sounds	1
Creating and Modifying Text	2
Making Text for the Web	1
Encoding of Movies	1
Manipulating and Changing Movies	1
Creating Movies	1