

Philadelphia University-Faculty of Engineering
Course Outline

Course Syllabus	
Course Title	Topics in Computer and Software Engineering
Course Number	630593
Course Level	5 th year
Class Time	08:15-09:45 (M-W)
Instructor	Dr. Qadri Hamarsheh
email	qhamarsheh@philadelphia.edu.jo
website	www.philadelphia.edu.jo/academics/qhamarsheh
Prerequisites	Dept. Approval
Office Hours	Hours: 09:00-10:00(Sun-Tue-Thu), 09:30-10:30 (Mon-Wed) Office 712
Text Book	"Digital Image Processing", R. C. Gonzalez and R. E. Woods, Pearson-Prentice-Hall, 2008, 3d edition. "Digital Image Processing using Matlab", R. C. Gonzalez, R. E. Woods, S. L. Eddins, Pearson-Prentice-Hall, 2004, 2 nd edition.

Course Goals:

This course is designed to give undergraduate students all the fundamentals in 2-D digital image processing with emphasis in image processing techniques, image filtering design and applications.

Time Schedule:

Duration: 16 weeks

Tutorial: 11 hours

Lectures: 3 hours /week

Seminar: 3 h,
(last week)

Assignments: 4

Project: One Digital Image Processing Application

Objectives:

At Completing this module the student should be able to:

- 1- Develop a theoretical foundation of fundamental Digital Image Processing concepts.
- 2- Provide mathematical foundations for digital manipulation of images; image acquisition; preprocessing; segmentation; Fourier domain processing; and compression.
- 3- Gain experience and practical techniques to write programs using MATLAB language for digital manipulation of images; image acquisition; preprocessing; segmentation; Fourier domain processing; and compression.

Course Contents		Week
❖	Introduction and Digital Image Fundamentals	2
❖	Digital image Representation	1
❖	Image Enhancement in the Spatial Domain	3
❖	Image Enhancement in the Frequency Domain	3
❖	Image Restoration	4
❖	Image Compression	1
❖	Image Segmentation	1
❖	Object Recognition	1

Mode of Assessment	
1-	First Exam 15%
2-	Second Exam 15%
3-	Reports\Home works\ and or Projects 20%
4-	Final Exam 50%

References	
1-	Al Bovik (ed.), "Handbook of Image and Video Processing", Academic Press, 2000.
2-	A.K. Jain, "Fundamentals of Digital Image Processing", Prentice-Hall, Addison-Wesley, 1989
3-	J. S. Lim, "Two-dimensional Signal and Image Processing" Prentice-Hall, 1990.
4	www.imageprocessingplace.com (required). Text book website)