Republic of Iraq
The Ministry of Higher Education
& Scientific Research


University: Anbar
College: CS & IT
Department: computer science
Stage: 4th year / 1st semester
Instructor name:
Academic status: prof.
Qualification: Ph.D.
Place of work: University of Anbar

# Course Weekly Outline

## Course Name : Digital Image Processing I

| | | | | | |
|---|---|---|---|---|---|
| **Course Instructor** | Azmi. Tawfiq. | | | | |
| **E-mail** | | | | | |
| **Title** | Prof. | | | | |
| **Course Coordinator** | | | | | |
| **Course Objective** | Provide students the fundamental aspects of digital image processing by applying mathematics and algorithms using Matlab package. | | | | |
| **Course Description** | Fundamental course of digital image processing. | | | | |
| **Textbook** | Rafael C. Gonzalez, Richard E. Woods, Steven L. Eddins, "Digital Image Processing Using MATLAB", (2nd edition), Publication Date: 2009 \| ISBN-13: 978-0982085400 . | | | | |
| **References** | Rafael C. Gonzalez, Richard E. Woods, "Digital Image Processing" (3rd edition), Publication Date: August 31, 2007 \| ISBN-10: 013168728X \| ISBN-13: 978-0131687288.<br>Muzhir Shaban Al-Ani, Digital Image Processing Using Matlab, Publication Date: 2008, Dar Ethraa, UAE, ISBN 001,6425 | | | | |
| **Course Assessments** | Term Tests | Laboratory | Quizzes | Project | Final Exam |
| | 20% | | 10% | 10% | 60% |
| **General Notes** | The best method to teach this course it must be started in parallel with Matlab applications. | | | | |

Republic of Iraq
The Ministry of Higher Education
& Scientific Research


University: Anbar
College: CS & IT
Department: computer science
Stage: 4th year / 1st semester
Instructor name:
Academic status: prof.
Qualification: Ph.D.
Place of work: University of Anbar

# Course Weekly Outline

| Week | Topics Covered | Lab. Experiment Assignments | Notes |
|---|---|---|---|
| 1 | 1D and 2D digital signal processing, fields of processing. | | |
| 2 | Elements of digital image processing system and human visual system. | | |
| 3 | Electromagnetic spectrum, TV signal transmitting, receiving and TV systems. | | |
| 4 | Image representation and digital image files formats. | | |
| 5 | Image analysis and histogram representation and histogram equalization. | | |
| 6 | Image preprocessing and image enhancement. | | |
| 7 | Gray scale image modification. | | |
| 8 | Mid Examine. | | |
| 9 | Linear and nonlinear mapping. | | |
| 10 | Convolution and correlation processes. | | |
| 11 | Types of 2D filtering compared with 1D filtering. | | |
| 12 | Algebraic operations on images. | | |
| 13 | Color Space and image Sampling. | | |
| 14 | Application of image processing in real life. | | |
| 15 | Application of image processing using Matlab. | | |

**Instructor Signature:** **Dean Signature:**