Instructor Information

- **Instructor**: Assoc. Prof. Dr. Serkan GÜNAL
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# Course Information

- **Code**: BIM472  
- **Title**: Image Processing  
- **Hours**: 3 + 0  
- **ECTS Credit**: 4.5  
- **Text**: Gonzalez, R.C. and Woods R.E.  
  *Digital Image Processing, 3/E*  
- **Supplementary Text**: Gonzalez, R.C, Woods R.E., and Eddins, S.L.  
  *Digital Image Processing using MATLAB, 2/E*  
- **Materials**: Published at ceng.anadolu.edu.tr  
- **Objective**: The aim of this course is to provide information about fundamentals of digital image processing techniques.  
- **Grading**:  
  - Midterm Exam I (15%)  
  - Midterm Exam II (20%)  
  - Project (15%)  
  - HW (10%)  
  - Final Exam (40%)
Course Schedule (tentative)

1. Introduction
2. MATLAB for Image Processing
3. Processing in Spatial Domain – Intensity Transformations
4. Processing in Spatial Domain – Spatial Filtering
5. Processing in Frequency Domain
6. Color Image Processing
7. Image Segmentation
8. Image Compression
9. Image Recognition
10. Morphological Image Processing
Learning Outcomes

At the end of this course, the student will be able to;

1. know the fundamentals of image processing.
   - 1.1. explain human visual perception.
   - 1.2. explain how images are acquired.
   - 1.3. explain the basic relationships between pixels.
2. apply transformations on images.
   - 2.1. explain histograms and changes histograms of images.
   - 2.2. realize smoothing and sharpening in both spatial and frequency domains.
3. define image processing methods.
   - 3.1. explain image segmentation.
   - 3.2. express image compression methods.
   - 3.3. realize image recognition process.
   - 3.4. recognize morphological image processing techniques.
4. process color images.
   - 4.1. explain color models.
   - 4.2. construct color images.
   - 4.3. extract the gray-level components of a color image.
   - 4.4. apply image processing methods to color images.