Course title	Code	semester	T+U	credit	ECTS
Image processing		6	3+ 0	3	5

Prerequisite Courses	None
Language of the Course	English
Type of Course	Compulsory
Course Coordinator	
Instructors	
Course Assistants	
The aim of lesson	To be able to teach basic image processing functions in computer vision, image analysis, image correction and enhancement, extraction of features, image compression, along with practical applications, students can use and analyze this information and have hardware knowledge and skills. is targeted.
Course Learning Outcomes	**At the end of this course, the student;** **1.** To comprehend what the image really is and what it means in the computer environment. **2.** Image processing with relating to basis of algorithms to be taught (thresholding , filtering, noise removal, shape manipulations, …) and their use in matlab environment.
Course Content	Image production mechanisms and standards; 2-Dimensional, 3-Dimensional image generation, digital image formats, geometric relations between image and world platform. Image Analysis: Numerical zooming , image algebra , spatial filters, edge detection operators; Image Segmentation; Discrete Transforms (Fourier , Cosine , Walsh-Hadamard , Wavelet transform); Model-based object detection with Hough transform; Production and analysis of property parameters of objects in binary images. Mathematical Morphology; Image restoration, Spatial and spectral filtering techniques; Geometric transformations. Increasing image quality; Compression of image data; lossy-lossless image data compression methods.

Weeks	Topics
one	Basic Concepts of Image Processing
2	Sampling and Quantification
3	Display of Digital Images
4	Resolution
5	Resolution
6	Image Enlargement and Reduction
7	Midterm
8	Neighborhood, Contiguity, Connectivity
9	Regions, Borders
10	Distance Criteria
11th	Image Navigation
12	Simple Image Processing Algorithms
13	Simple Filters and Applications
14	Simple Filters and Applications

General Qualifications

They have an understanding of image processing techniques and use their acquired knowledge.

resources

Gonzales , R. & Woods E., (1992). *Digital Image Processing , Addison-Wesley Publishing Company* .
Humbug E., (2000). *Computer Vision and Image Processing* , Prentice living room _
Sonka , H., (1999). *Image Processing , Analysis and Machine Vision ,* An International Thomson Publishing

Evaluation system

The dates, days and hours of the Midterm, Quiz, Final Exam and Evaluations will be announced later, according to the decision of the Faculty Administrative Board.

	WITH PROGRAM LEARNING OUTCOMES COURSE LEARNING OUTCOMES RELATIONSHIP TABLE										
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
LO1	5	3	3	5	3	3	3	one	one	one	3
LO2	5	5	5	5	5	5	3	one	one	one	3
LO: Learning Outcomes OP: Program Outcomes											
Contribution	**1 Very Low**		**2 Low**		**3 Medium**		**4 High**		**5 Very High**		

Relation of Program Outcomes and Related Course

Lesson	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
Image processing	5	4	4	5	4	4	3	one	one	one	3