

COURSE INFORMATION					
Course Title	Code	Semester	C + P + L Hour	Credits	ECTS
Computer Vision	EE662	Spring	3 + 0 + 0	3	10

<b>Prerequisites</b>	None
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<b>Language of Instruction</b>	English
<b>Course Level</b>	Doctorate
<b>Course Type</b>	Elective
<b>Course Coordinator</b>	Cem Ünsalan
<b>Instructors</b>	Cem Ünsalan
<b>Assistants</b>	
<b>Goals</b>	The aim of this course is to introduce computer vision tools.
<b>Content</b>	Camera models. Color. Linear filters. Edge detection. Texture analysis. Segmentation. Range data

Learning Outcomes	Program Outcomes	Teaching Methods	Assessment Methods
1) Analyzing camera models	1,4	1,2,6	A,D,E
2) Applying linear filters to problems	1,4	1,2,6	A,D,E
3) Designing color based segmentation methods	1,4	1,2,6	A,D,E
4) Analyzing texture analysis methods	1,4	1,2,6	A,D,E
5) Applying range data processing algorithms to problems	1,4	1,2,6	A,D,E

<b>Teaching Methods:</b>	1: Lecture, 2: Problem Solving, 3: Simulation, 4: Seminar, 5: Laboratory, 6: Term Research Paper
<b>Assessment Methods:</b>	A: Exam, D: Homework, E: Project

COURSE CONTENT		
Week	Topics	Study Materials
1	Introduction	Course Book
2	Camera models	Course Book
3	Camera models	Course Book
4	Color	Course Book
5	Color	Course Book

6	Linear filters	Course Book
7	Edge detection	Course Book
8	Edge detection	Course Book
9	Texture analysis	Course Book
10	Texture analysis	Course Book
11	Segmentation	Course Book
12	Segmentation	Course Book
13	Range data analysis	Course Book
14	Range data analysis	Course Book

### RECOMMENDED SOURCES

#### Textbook

Computer Vision: A Modern Approach; D. Forsyth and J. Ponce;  
Prentice Hall; ISBN: 978-0136085928

#### Additional Resources

### MATERIAL SHARING

#### Documents

Course slides, Matlab applications

#### Assignments

#### Exams

### ASSESSMENT

#### IN-TERM STUDIES

#### NUMBER

#### PERCENTAGE

Project

1

40

Homework Assignment

8

60

**Total**

**100**

#### CONTRIBUTION OF FINAL EXAMINATION TO OVERALL GRADE

40

#### CONTRIBUTION OF IN-TERM STUDIES TO OVERALL GRADE

60

**Total**

**100**

#### COURSE CATEGORY

Field Course

### COURSE'S CONTRIBUTION TO PROGRAM

No Program Learning Outcomes

Contribution

1 2 3 4 5

1 Comprehends and applies basic sciences, mathematics and engineering

X

	sciences at the highest possible level.	
2	Demonstrates a thorough knowledge in Electrical and Electronics Engineering in breadth and depth including the current trends of development.	
3	Designs, implements and completes an original research process independently; manages this process.	
4	Can reach and grasp the most recent information in a field, has a high level of competence in the necessary methodology and skills to do research in this field.	X
5	Performs a comprehensive work that results in a new scientific method or technological product/process development, a scientific and technological innovation, or an application of a known method to a new area.	
6	Contributes to the literature of science and technology by publishing the results of academic studies in respectable academic media.	
7	Can critically analyze, synthesize and evaluate the ideas and developments in Electrical and Electronics Engineering.	
8	Can communicate effectively with the Electrical and Electronic Engineers and the wider scientific and social communities in written and spoken Turkish; can establish written, oral and visual communications, and can participate in discussions using one foreign language (English) at least at the General Advanced Level C1 of European Language Portfolio.	
9	Evaluates scientific, technological, social and cultural developments, and transfers the outcomes to the society with scientific objectivity and ethical responsibility.	

<b>ECTS ALLOCATED BASED ON STUDENT WORKLOAD BY THE COURSE DESCRIPTION</b>			
Activities	Quantity	Duration (Hour)	Total Workload (Hour)
Course Duration	14	3	42
Hours for off-the-classroom study (Pre-study, practice)	14	7	98
Project	1	50	50
Homework assignment	8	7	56
Final examination	1	4	4
<b>Total Work Load</b>			250
<b>Total Work Load / 25 (h)</b>			10
<b>ECTS Credit of the Course</b>			10