

Course Description Form			
Course Code and Name	5041329 Computer Vision		
Course Semester	Fall-Spring		
Catalog Content	General introduction, Introduction to image processing, Image formation, Feature extraction, Region growing, Boundary detection, Texture analysis, Stereo vision, Sequence of images, Motion estimation, Two-dimensional and three-dimensional representation, Matching		
Textbook	Computer Vision: A Modern Approach, David A. Forsyth, Jean Ponce, Prentice Hall.		
Supplementary Textbooks	Computer Vision, Linda G. Shapiro, George C. Stockman, Prentice Hall.		
Credit	8		
Prerequisites of the Course (Attendance Requirements)	There is no prerequisite or co-requisite for this course.		
Type of the Course	Elective		
Instruction Language	Turkish		
Course Objectives	Understanding fundamentals of computer vision, ability to develop image processing applications.		
Course Learning Outcomes	1- It will be able to bring practical solutions to complex vision problems with correct approaches. 2-It will be able to produce both theoretical and practical solutions to problems that may be encountered in computer vision.		
Instruction Methods	Lecture, Question & Answer, Practice		
Weekly Schedule	1. Week General introduction 2. Week Introduction to image processing 3. Week Image formation 4. Week Image formation 5. Week Feature extraction 6. Week Region growing 7. Week Boundary detection 8. Week Texture analysis 9. Week Texture analysis 10. Week Stereo vision 11. Week Sequence of images 12. Week Motion estimation 13. Week Two-dimensional and three-dimensional representation 14. Week Matching		
Teaching and Learning Methods (These are examples. Please fill which activities you use in the course)	Weekly theoretical course hours Weekly tutorial hours Reading Activities Internet browsing, library work Designing and implementing materials Report preparing Preparing a Presentation Presentations Preparation of Midterm and Midterm Exam Final Exam and Preparation for Final Exam		
Assessment Criteria		Numbers	Total Weighting (%)
	Midterm Exams	1	30
	Assignment	3	30
	Application		
	Projects		
	Practice		
	Quiz		
Percent of In-term Studies (%)	4	60	

	Percentage of Final Exam to Total Score (%)	1	40						
	Attendance		-						
Workload	Activity	Total Number of Weeks	Duration (weekly hour)	Total Period Work Load					
	Weekly Theoretical Course Hours	14	3	42					
	Weekly Tutorial Hours	3	3	9					
	Reading Tasks	14	3	42					
	Studies	14	3	42					
	Material Design and Implementation	5	5	25					
	Report Preparing	1	7	7					
	Preparing a Presentation	1	5	5					
	Presentations	1	3	3					
	Midterm Exam and Preparation for Midterm Exam	1	10	10					
	Final Exam and Preparation for Final Exam	1	15	15					
	Other (should be emphasized)								
	Total Workload				200				
	Total Workload / 25					8			
	Course Credit (ECTS)					8			
Contribution Level Between Course Learning Outcomes and Program Outcomes	No	Program Outcomes	1	2	3	4	5		
	1	Reaches the expansion of knowledge by conducting scientific research in the field of engineering and evaluation, interpretation and application of information.					X		
	2	Has extensive and in depth knowledge including the latest techniques, methods applied and their limitations in engineering.			X				
	3	Completes and applies knowledge by using scientific methods by using limited or missing data and integrates information from different disciplines.				X			
	4	Be aware of new and developing practices of the profession, examines and learns when needed.					X		
	5	Defines and formulates problems related to the field, develops methods to solve them and applies innovative methods in solutions.				X			
	6	Develops new and / or original ideas and methods, designs complex systems or			X				
	7	Designs and applies theoretical, experimental and modeling based			X				
	8	Works effectively in disciplinary and multidisciplinary teams, leads such teams and develops solution approaches in				X			
	9	Communicates oral and written using a foreign language at least at the level of European Language Portfolio B2.				X			

	10	Conveys the process and results of the studies in written and oral form in a systematic and clear manner in national and international environments within or outside the field.			X		
	11	Knows the social, environmental, health, security, legal aspects of engineering applications; project management, and business life applications and be aware of the constraints of these engineering applications.			X		
	12	Considers social, scientific and ethical values in the stages of data collection, interpretation and announcement and in all professional activities.			X		
The Course's Lecturer(s) and Contact Informations		Name Surname: Assist. Prof. Dr. Uraz Yavanođlu E-mail address: uraz@gazi.edu.tr					