

Vocational School / Computer Programming

2024 - 2025 Academic Year

IMAGE PROCESSING

Syllabus

Course Description					
Name	Code	Semester	T+A Hour	Credit	ECTS
IMAGE PROCESSING	BPR2244530	Spring Semester	3+0	3	5
Prerequisites Courses					
Recommended Elective Courses					
Language of Instruction	Turkish				
Course Level	Short Cycle (Associate's Degree)				
Course Type	Elective				
Course Coordinator	Lect. Beyza KOYULMUŞ				
Name of Lecturer(s)	Lect. Beyza KOYULMUŞ				
Assistant(s)					
Aim	The aim of this course is to give sample image processing functions provided by several c++ libraries. In addition a user interface library, Qt, will be used for c++ GUI applications.				
Course Content	This course contains; 1. Review of C++ language: pointers, functions, class definition.,2. Review of C++ language: Matrices, image definition, color theory, introduction to image processing.,3. Introduction to Qt, what it is used for, examples.,4. Installation of Qt library.,5. First examples of Qt with c++,6. Qt, Layouts: QGraphicsView, QImage,image read, Qscreen capture.,7. Qt, Signals and Slots,8. Qt, Signals and Slots,9. QGraphicsView and image processing on Qt,10. QGraphicsView Applications,11. Project midterm-presentations,12. Guided study on projects,13. Guided study on projects,14. Guided study on projects.				
Course Learning Outcomes			Teaching Methods	Assessment Methods	
Able to read and write several image formats by using c++, and modify the images.			14, 17, 9	E, F	
Able to use Qt user interface library to visualize the images.			14, 17, 2, 9	E, F	
QGraphicsView makes applications			14, 17, 9	A, E, F	
Learn image processing techniques			14, 2, 9	A, E, F	
Defines the basic concepts of image processing			14, 17, 2	A, E, F	
Teaching Methods	14: Self Study Method, 17: Experimental Technique, 2: Project Based Learning Model, 9: Lecture Method				
Assessment Methods	A: Traditional Written Exam, E: Homework, F: Project Task				
Lecture Schedule					
Sequence	Topics	Preliminary Preparation			
1	1. Review of C++ language: pointers, functions, class definition.				
2	2. Review of C++ language: Matrices, image definition, color theory, introduction to image processing.				
3	3. Introduction to Qt, what it is used for, examples.				
4	4. Installation of Qt library.				
5	5. First examples of Qt with c++				
6	6. Qt, Layouts: QGraphicsView, QImage,image read, Qscreen capture.				
7	7. Qt, Signals and Slots				
8	8. Qt, Signals and Slots				
9	9. QGraphicsView and image processing on Qt				
10	10. QGraphicsView Applications				
11	11. Project midterm-presentations				
12	12. Guided study on projects				
13	13. Guided study on projects				
14	14. Guided study on projects				
Evaluation Methods		Weight(%)			
Midterm Exam		40			
General Exam		60			
Resources					