Course Unit Descriptor

Study Programme: Information Systems Engineering

Course Unit Title: Information Extraction From Multimedia Data

Course Unit Code: IZMI07

Name of Lecturer(s): Anderla Andraš

Type and Level of Studies: Master Academic Degree

Course Status (compulsory/elective): compulsory

Semester (winter/summer): summer

Language of instruction:english

Mode of course unit delivery (face-to-face/distance learning): face-to-face

Number of ECTS Allocated:4

Prerequisites: none

Course Aims:

The goal of the course is to introduce the students to the basic concepts of multimedia data processing and the extraction of information from such data, focusing image and video.

Learning Outcomes:

Upon completing the course, the students will have the knowledge and skills that will enable them to efficiently conduct research in the domain of multimedia processing and develop practical IT solutions. They will also receive practical training in multimedia data processing and development of programs based on widely used computer vision and multimedia processing environments and libraries (Matlab Image Processing Toolkit, OpenCV, Python scikit-image).

Syllabus:

The course will cover the following areas: basic concepts of acquisition and storing of visual signals, geometric operations over images, mathematical morphology, edge detection, image segmentation, feature extraction and their representation, motion estimation and object tracking. The theory will be accompanied with practical training in Matlab, OpenCV and Python.

Required Reading: Relevant literature in English TBD

Weekly Contact Hours:2	**Lectures:2**	**Practical work:0**

Teaching Methods:

Lectures and labs, tests and an exam assignment. The labs will focus on enabling the students to use Matlab, OpenCV and Pyhton for multimedia processing. The students' knowledge of the theory will be evaluated using tests. The individual assignment will consist of the practical implementation of programs of suitable complexity

Knowledge Assessment (maximum of 100 points):100

Pre-exam obligations	points	**Final exam**	points
Project	40	Oral part of the exam	30
Test	10		
Test	10		
Test	10		

The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.