



UNIVERSITY OF NIŠ

Course Unit Descriptor

Faculty

GENERAL INFORMATION

Study program

Mechanical Engineering

Study Module (if applicable)

Course title

D.3.2 I.4.25 SYSTEM DESIGN FOR DIGITAL IMAGE PROCESSING IN MECHATRONICS

Level of study

Bachelor Master's Doctoral

Type of course

Obligatory Elective

Semester

Autumn Spring

Year of study

II

Number of ECTS allocated

10

Name of lecturer/lecturers

Aca D. Micic

Teaching mode

Lectures Group tutorials Individual tutorials
 Laboratory work Project work Seminar
 Distance learning Blended learning Other

PURPOSE AND OVERVIEW (max. 5 sentences)

Introduce students to the various techniques of analysis and design of modern systems for digital image processing in mechatronics. Training for the dimensioning and design of hardware for digital signal processing and digital filters to digital control of mechatronic systems.

SYLLABUS (brief outline and summary of topics, max. 10 sentences)

- System components for image processing.
- Creation and presentation of images.
- Three-dimensional images, stereo images, image formats.
- Transform images.
- Improvements and restoration of images.
- Spatial image processing techniques.
- Frequency domain methods.
- Types of noise in the image and their characteristics.
- Restoration of blurred images.
- Edge detection.

- Analysis of texture and shape of the image.
- Analysis of dynamic scenes: Detection and tracking of moving objects.

LANGUAGE OF INSTRUCTION

- Serbian (complete course)
 English (complete course)
 Other _____ (complete course)
- Serbian with English mentoring
 Serbian with other mentoring _____

ASSESSMENT METHODS AND CRITERIA

Pre exam duties	Points	Final exam	points
Activity during lectures		Written examination	
Practical teaching		Oral examination	100
Teaching colloquia		OVERALL SUM	100

*Final examination mark is formed in accordance with the Institutional documents