



# UNIVERSITY OF NIŠ

**Course Unit Descriptor**

**Faculty**

Faculty of Mechanical Engineering

## GENERAL INFORMATION

Study program

**Mechanical Engineering**

Study Module (if applicable)

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Course title

Д.3.2-И.4.26- Rehabilitation robotics

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

Vlastimir D. Nikolić, Danijela Ristić-Durrant

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 one of the youngest and the most challenging field in robotics. First of all, the historical development and the usage of robots in rehabilitation it is presented. Also it is presented the modern trends which make of the rehabilitation robotic a multidisciplinary subject. The rehabilitation robotics includes robotics, automatic control, cognitive science and neurorehabilitation. The aim of this course is training students for making concepts of robotic system which physical interact with human in process of rehabilitation upper and/or lower extremities.

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

1) Chronological overview of the development and use of the robots in the rehabilitation. 2) Contemporary trends in rehabilitation robotics. 3) Robotic systems for rehabilitation of human upper extremities. 4) Robotic systems for rehabilitation human walking. 5) Human-centred principle of designing the rehabilitation robotic systems. 6) Sensors in rehabilitation robotic. 7) Control methods in rehabilitation robotic. 8) Cognitive rehabilitation systems. 9) Evaluation of robotic systems for rehabilitation.

## LANGUAGE OF INSTRUCTION

Serbian (complete course)       English (complete course)       Other \_\_\_\_\_ (complete course)

Serbian with English mentoring       Serbian with other mentoring \_\_\_\_\_

**ASSESSMENT METHODS AND CRITERIA**

<b>Pre exam duties</b>	<b>Points</b>	<b>Final exam</b>	<b>points</b>
<b>Activity during lectures</b>		<b>Written examination</b>	<b>50</b>
<b>Practical teaching</b>		<b>Oral examination</b>	<b>50</b>
<b>Teaching colloquia</b>		<b>OVERALL SUM</b>	<b>100</b>

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