



UNIVERSITY OF NIŠ

Course Unit Descriptor

Faculty

Faculty of Mechanical Engineering

GENERAL INFORMATION

Study Program	Manufacturing & Information Technologies		
Study Module (if applicable)	-		
Course Title	Biomaterials		
Level of Study	<input type="checkbox"/> Bachelor	<input checked="" type="checkbox"/> Master's	<input type="checkbox"/> Doctoral
Type of Course	<input type="checkbox"/> Obligatory	<input checked="" type="checkbox"/> Elective	
Semester	<input checked="" type="checkbox"/> Autumn	<input type="checkbox"/> Spring	
Year of Study	I		
Number of ECTS Allocated	6		
Name of Lecturer/Lecturers	Miroslav Trajanovic		
Teaching Mode	<input checked="" type="checkbox"/> Lectures	<input type="checkbox"/> Group tutorials	<input type="checkbox"/> Individual tutorials
	<input checked="" type="checkbox"/> Laboratory work	<input type="checkbox"/> Project work	<input checked="" type="checkbox"/> Seminar
	<input type="checkbox"/> Distance learning	<input type="checkbox"/> Blended learning	<input type="checkbox"/> Other

Purpose and Overview (max. 5 sentences)

The aim of this course is to introduce students to the characteristics and behaviour of different types of biomaterials and their potential application in medicine. Students are able to identify the basic properties of biomaterials, describe forms of biodegradation of biomaterials, examine the mechanical properties of biomaterials, recognize the basic interactions of biomaterials and the environment, making the right selection for a specific application of biomaterials.

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

1) General introduction to biomaterials, 2) The properties and characteristics of human tissue, 3) Types and the properties of biomaterials, 4) The application of biomaterials (fixators, implants, scaffold, medical devices, etc.), 5) Biomaterials in orthopedics. Biomaterials in tissue engineering, 6) Biomaterials for making scaffold (biocompatibility, biodegradability, mech. characteristics), 7) Biomaterials in dentistry, 8) Biomaterials and cardiovascular system (materials for implants, stents, etc.), 9) The mechanical properties of biomaterials, 10) The surface properties of biomaterials, 11) Problems of application of biomaterials (all aspects, Case Studies), 12) New alloys and future trends in the development of biomaterials.

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	10	Written Examination	40
Practical Teaching	40	Oral Examination	0
Teaching Colloquia	10	Overall Sum	100