



# UNIVERSITY OF NIŠ

**Course Unit Descriptor**

**Faculty**

Faculty of Mechanical Engineering

## GENERAL INFORMATION

Study Program	<b>Mechanical Engineering</b>
Study Module (if applicable)	-
Course Title	Technical materials
Level of Study	<input checked="" type="checkbox"/> Bachelor <input type="checkbox"/> Master's <input type="checkbox"/> Doctoral
Type of Course	x Obligatory      Elective
Semester	Autumn      x Spring
Year of Study	I
Number of ECTS Allocated	6
Name of Lecturer/Lecturers	Assoc. Prof. Goran Radenković and Assoc. Prof Gordana Stefanovic
Teaching Mode	<input checked="" type="checkbox"/> Lectures <input type="checkbox"/> Group tutorials <input type="checkbox"/> Individual tutorials <input checked="" type="checkbox"/> Laboratory work <input checked="" 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)

Introduce students to the basics principles in the area of fuels, lubricants and industrial water as well as for managing in the systematization and terminology in practice.  
To familiarize students with basic types of materials used in mechanical engineering, their structure, properties, application and processing possibilities and changes their properties.

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

- 1) General introduction to technical materials,
- 2) Energy supply, reserves and consumption,
- 3) Fuel and fundamentals of combustion,
- 4) Solid fuel,
- 5) Liquid fuels,
- 6) Gaseous fuels,
- 7) Lubricants and their role in mechanical engineering,
- 8) General classification and the choice of type of lubricant,
- 9) Industrial water,
- 10) Crystalline materials. The structure diagrams Fe-Fe<sub>3</sub>C and Fe-C.
- 11) Mechanical, technological and non-destructive testing.
- 12) Steels.
- 13) Carbon and alloyed steel.
- 14) Structural, tool and steels special purposes.
- 15) Cast iron.
- 16) Non-ferrous alloys.
- 17) Ceramic materials.
- 18) Composite materials.
- 19) The choice of material from the standpoint of properties, processability, availability, price, etc..

#### 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	5	Written Examination	50
Practical Teaching	10	Oral Examination	Max. 35 (depending on Teaching Colloquia)
Teaching Colloquia	35	Overall Sum	100

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