



UNIVERSITY OF NIŠ

Course Unit Descriptor

Faculty

Faculty of Mechanical Engineering

GENERAL INFORMATION

Study program	Manufacturing & Information Technologies
Study Module (if applicable)	-
Course title	Manufacturing System Design
Level of study	<input type="checkbox"/> Bachelor <input checked="" type="checkbox"/> Master's <input type="checkbox"/> Doctoral
Type of course	<input checked="" type="checkbox"/> Obligatory <input type="checkbox"/> Elective
Semester	<input checked="" type="checkbox"/> Autumn <input type="checkbox"/> Spring
Year of study	First
Number of ECTS allocated	7
Name of lecturer/lecturers	Dr Milos S. Stojkovic, Dr Miodrag Manic, Dr Milan Trifunovic
Teaching mode	<input checked="" type="checkbox"/> Lectures <input checked="" type="checkbox"/> Group tutorials <input type="checkbox"/> Individual tutorials <input type="checkbox"/> Laboratory work <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Seminar <input type="checkbox"/> Distance learning <input type="checkbox"/> Blended learning <input checked="" type="checkbox"/> Other Mfg.Sys. Tours

PURPOSE AND OVERVIEW (max. 5 sentences)

The purpose of the course is to teach and train students and future engineers to analyse and redesign the existing manufacturing systems aiming improvement of its performance and to design the new towards demands of the business system.

The expected outcome: After completing the course and passing the exam, the student should be able to:

1. Recognize the existing and / or required components and characteristics of a manufacturing system,
2. Define procedures for measuring the performance of a manufacturing system and analyse results,
3. Design the computer model of a manufacturing system to simulate and analyse its performance,
4. Apply the methods for manufacturing system optimization,
5. Understand the role, reasons and conditions for ICT application in integration of a manufacturing system

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

1. Introduction to the manufacturing systems
 - a. Definition and structure of manufacturing system
 - b. Concepts of manufacturing systems (exemplary models of production)

2. The elements of manufacturing system (processes, components, design, manufacturing and measuring tol.)
3. Preparation of manufacturing, classification and coding,
4. Methods of designing manufacturing system,
5. Productivity of manufacturing system,
6. Quality of manufacturing systems and methods for managing and monitoring of manufacturing processes,
7. Reactivity of manufacturing system,
8. Manufacturing system reconfiguration (flexible and intelligent manufacturing system)
9. Costs in manufacturing system,
10. Selection and analysis of the manufacturing system,
11. Rump-up the manufacturing system,
12. Optimization, rationalization and automation (Lean and agile production)

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	16	Written examination (test)	40
Practical teaching		Seminar work and presentation (Oral examination)	44
Teaching colloquia		OVERALL SUM	100

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