

## Manufacturing Management Course

<i>Name of the subject:</i> <b>Manufacturing Management - BSc</b>	<i>SUBJECT code:</i>	Weekly hours: 3 lectures + 3 indoor practice	Credit: 8
<i>Subject leader:</i> Ivan Mihajlovic Andjelka Stojanovic	<i>Academic Degree:</i> Associate Professor Assistant	Prerequisites:	

**Purpose:** Within the course, with constant modernization of the curriculum, students are introduced to the most of the contemporary methods and techniques of production process optimization.

**Course description:** Through the course, students are prepared to use modern models of optimization of the production process adapted to the business market in the new competitive environment. After completing the course and completed testing obligations students have the necessary starting point for mastering programs of vocational subjects in the coming semesters: Operations Research I, Operations Research II, Project Management, Production Logistics.

### Schedule

Weeks	Topics
1.	Introducing basic concepts, Contemporary business-production systems and the interactions with the environment: the definition of production, the definition of conditional-production system, the definition of production planning and control.
2.	Production as a transformational system. Production program: definition of production program, the market needs the definition of the term production capacity.
3.	Development and research of products: fault of the product lifecycle, product quality, product simplification, rapid product development, rapid prototyping, concurrent design.
4.	Types of production: qualitative aspects of production, the quantitative aspect of production, optimization of production run. Development and preparation of production: planning processes using computers, CAD / CAM, CAPP role in CAD / CAM integration.
5.	Organization of the immediate preparation of the production processes: operational planning and scheduling, providing materials for the production (inventory models).
6.	Factories and the production line layout in terms of material flow .
7.	Time management: productive and non-productive time, organization types flow sequence of operations (sequential, parallel and combined). Just-in-time production: the definition of JIT, Kanban system, LEAN synchronization.
8.	Regulating production. Macro and micro organization of production. A man's work environment: typical influencing factors in the work environment, the relationship of man's labor and the environment.
9.	Product quality control: organization and methods of control of production, control of current production, control charts, acceptance control plans, models of organization of the control services.
10.	Typical costs, the role, nature and variability of the budget: the most significant production costs, interpretation of the costs in the company and the definition of income, expenses on items and at places, the nature of the variability of costs, analysis of critical points, marginal analysis.
11.	Seminar project work
12.	Seminar project work
13.	Seminar project work
14.	Seminar project work

**Final grade:** 10pt – class attendance – lectures; 10pt – class attendance – practical work; 20pt – seminar project; 20pt – colloquium; 40pt – final exam (<51pt fail; 51-60 grade 6; 61-70 grade 7; 71-80 grade 8; 81-90 grade 9; 91-100 grade 10)

**Compulsory literature:** Simmy Grewal, Manufacturing Process Design and Costing, Springer, 2011.

**Supplemental literature:** William J. Stevenson, Production/Operations Management, IRWIN, 1996.