MM3143

Study program / course: Mechanical Engineering

Type and level of study: Master academic studies

Course: Mechanical operation

Lecturers: Miroslav J. Babic, Slobodan R. Mitrovic

Status of course: Elective for module M4, III semester

Number of ECTS: 6

Prerequisite: none

The course objective:

The main goal of the course is introduction to theory and practice of mechanical operation as unavoidable part of process engineering to students of master studies in module process engineering. Considering the role of mechanical engineers in process engineering special focus will be set on construction of machines for mechanical operations.

The course outcome:

- Knowledge and understanding of types, role, importance and physics of mechanical operation, as well as constriction and exploitation characteristics of machines for mechanical operations.
- Analysis and evaluation of technology of mechanical processing of solid material in order to achieve defined characteristics.
- Capacity for usage knowledge in practice.
- Capability of usage of wide specter and sources of information as well as individual and team work.

Syllabus:

Theory

Types and importance of mechanical operation, parameters of size of cut material, crushing of solid material, crushers, distribution of sizes of crushed material, basic distribution of product of crushing, distribution of size of crushed material as immanent characteristic of machines for braking, energetic aspects of crushing, selection and types of classification machines, colanders, classificators, mixtures, molding and agglomeration of material, transportation systems, technological schemas, tribological aspects of mechanical operations in process engineering.

Practice: exercises, other classes, research

Practical classes are auditoria and laboratory and cover preparation, development and presentation of two seminar papers as well as demonstration of construction and exploitation characteristics. During research studies, students will be enabled for basic research in the field of the course.

Recommended reading:

1. Babic M., Machines for mechanical operation, Yugoslav society for tribology, Kragujeavc 1994.

The number of hours of active teaching:				Other classes:
Theory: 3	Practical classes: 1,4	Other forms of teaching: 0,6	Research study: 0	1

Methods of teaching

Teaching consists of lecturing and exercises. Students will actively participate in learning and creatively usage of knowledge. It includes: teaching supported by multimedia tools, case studies, team activities, usage of Internet resources.

Evaluation of knowledge (maximal 100 points)

Pre-final exam obligations	**Points**	**Final exam**	**Points**
Activities during the classes	10	Written	30
Activities during the exercises			
Tests:	30		
Seminars:	30		