



UNIVERSITY OF NIŠ

Course Unit Descriptor

Faculty

Faculty of Mechanical Engineering

GENERAL INFORMATION

| | | | |
|------------------------------|--|---|---|
| Study Program | Energy and Process Engineering | | |
| Study Module (if applicable) | - | | |
| Course Title | Multiphase flows | | |
| 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 type="checkbox"/> Autumn | <input checked="" type="checkbox"/> Spring | |
| Year of Study | I | | |
| Number of ECTS Allocated | 6 | | |
| Name of Lecturer/Lecturers | Dragoljub Žvković | | |
| Teaching Mode | <input checked="" type="checkbox"/> Lectures | <input checked="" type="checkbox"/> Group tutorials | <input type="checkbox"/> Individual tutorials |
| | <input type="checkbox"/> Laboratory work | <input type="checkbox"/> Project work | <input 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 basic physical properties of mixtures, calculation methods and devices of hydraulic and pneumatic transport, as well as models of two-phase mixture flows type liquid-gas and liquid-vapour. The purpose is to acquire skills and know how for calculation, analysis and exploitation of various devices and means for transport of multiphase and multi component flows.

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

1) Physical properties of mixtures type fluid-solid particles, 2) Fluidization of mealy media, 3) Pneumatic transport, 4) Devices for pneumatic transport, 5) Hydraulic transport, 6) Devices for hydraulic transport, 7) Two-phase flows type liquid-gas, and liquid-vapour: regimes and flow maps, 8) Two phase flows – type vapour-fluid droplets, 9) Models of two phase flows – homogenous model and “two fluid” models, 10) Anular flow.

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 |
|-----------------|--------|------------|--------|
|-----------------|--------|------------|--------|

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|---|-----------|----------------------------|--------------------------------------|
| Activity During Lectures | 5 | Written Examination | 10 (student case study paper) |
| Practical Teaching | 5 | Oral Examination | 30 |
| Teaching Colloquia | 50 | Overall Sum | 100 |
| *Final examination mark is formed in accordance with the Institutional documents | | | |