UNIVERSITY OF NIŠ

Course Unit Descriptor	Faculty	Faculty of Mechanical Engineering

GENERAL INFORMATION	
Study Program	Mechanical Engineering
Study Module (if applicable)	-
Course Title	Diffusion Operations and Apparatuses
Level of Study	☒Bachelor ☐ Master's ☐ Doctoral
Type of Course	☐ Obligatory ☒ Elective
Semester	☐ Autumn ☒ Spring
Year of Study	IV
Number of ECTS Allocated	6
Name of Lecturer/Lecturers	Mića V. Vukić
Teaching Mode	☒ Lectures ☐ Group tutorials ☐ Individual tutorials ☐ Laboratory work ☒ Project work ☒ Seminar ☐ Distance learning ☐ Blended learning ☐ Other

Purpose and Overview (max. 5 sentences)

Introducing students to the diffusion operations and equipment in chemical and other industries. Basic principles of diffusion apparatuses design.

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

1) Introduction. Molecular and convective mass transfer. Fick's law. Mass transfer coefficients. Overall mass transfer coefficients. 2) Classification of mass transfer operations and mass transfer equipment. 3) Distillation: flash distillation, batch distillation. Continuous distillation with reflux. Binary distillation design: McCabe–Thiele graphical method. Packed column distillation. 4) Absorption and Stripping. Packed Columns. Plate Columns 5) Adsorption. 6) Extraction. Liquid–liquid extraction. Solid–liquid extraction (Leaching). 7) Membrane Separation Processes. 8) Crystallization. Other separation processes.

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**	**0** (or max 60 depending on Pre exam Duties)

Practical Teaching	**5**	**Oral Examination**	**Max. 30** (depending on Project work)
Project work	**60**	**Overall Sum**	**100**
***Final examination mark is formed in accordance with the Institutional documents**			