



UNIVERSITY OF NIŠ

Course Unit Descriptor

Faculty

Faculty of Mechanical Engineering

GENERAL INFORMATION

Study Program	Mechanical Engineering
Study Module (if applicable)	-
Course Title	Optical System Design
Level of Study	<input type="checkbox"/> Bachelor <input type="checkbox"/> Master's <input checked="" 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	10
Name of Lecturer/Lecturers	Nenad T. Pavlović
Teaching Mode	<input checked="" type="checkbox"/> Lectures <input type="checkbox"/> Group tutorials <input type="checkbox"/> Individual tutorials <input checked="" type="checkbox"/> Laboratory work <input checked="" type="checkbox"/> Project work <input checked="" type="checkbox"/> Seminar <input type="checkbox"/> Distance learning <input type="checkbox"/> Blended learning <input type="checkbox"/> Other

Purpose and Overview (max. 5 sentences)

To gain new knowledge in the field of functional optical elements, optical instruments, and techniques of computer-aided optical system design

The ability to calculate and design optical systems as constituent parts of complex mechatronic systems.

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

Prisms and mirrors (Reflective prisms; Dispersive prisms; Plane mirrors; Plane mirrors in the shape of a plate; Design of prism systems and reflector systems; Analysis of manufacturing errors).

Basic optical instruments and devices (Afocal systems; Telescopes; Simple microscope; Magnifying glass; Compound microscope; Photometric devices; Radiometric and detection devices; Fibre optic devices).

Optical systems (Camera lenses; Achromatic telescope objectives; Cooke triplet anastigmats; Techniques of optical system design without computers; Techniques of computer-aided optical system design; Telescopic systems and oculars; Microscopic objectives; Photographic objectives; Condenser systems; Reflector systems).

Programming packages for optical system design (ZEMAX;PARAX).

Language of Instruction

Serbian (complete course) English (complete course) Other _____ (complete course)

Serbian with English mentoring Serbian with German mentoring

Assessment Methods and Criteria

Pre exam Duties	Points	Final Exam	Points
Activity During Lectures	5	Written Examination	30
Practical Teaching	5	Oral Examination	30
Teaching Colloquia	30	Overall Sum	100

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