

Title Nanotechnology and Nanoengineer (Nanotechn i nanoinż)	Code 1010402221010410675
Field TECHNICAL PHYSICS	Year / Semester 1 / 2
Specialty -	Course core
Hours Lectures: 3 Classes: 2 Laboratory: - Projects / seminars: -	Number of credits 5
	Language polish

Lecturer:

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Faculty:

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Status of the course in the study program:

Core course of the study for Technical Physics, Faculty of Technical Physics.

Assumptions and objectives of the course:

Based on the current literature expose students to: (1) novel physical and chemical phenomena and processes in nanoscale and, (2) novel materials for nanotechnological applications. Developing skills in: (1) reading and understanding current scientific literature, (2) effectively transfer knowledge, and (3) conceptual work as a team member.

Contents of the course (course description):

The topics discussed includes advances in Quantum Mechanics of Materials, Solid State Physics, Surface Physics, as well as Nanosystems and their engineering; current scientific and technological challenges in nanoscience and nanotechnology.

Introductory courses and the required pre-knowledge:

Previous courses in Quantum Mechanics, Solid State Physics, Surface Physics and Introduction to Nanotechnology.

Courses form and teaching methods:

Lectures and Tutorials. The latter includes individual student?s presentations based on their team work (3 students per team) promoting team work as well as individual work in searching and selecting the needed material. Typical tutorials also include individual work with students.

Form and terms of complete the course - requirements and assessment methods:

Assessment is progressive and includes: In-class quizzes (based on lecture material and in-class exercises) ? 33%, individual, in-class student?s presentations and discussions (33%), and the final exam (34%). To attempt the final exam, performance at a minimum of 50% for each of the assessment item is required.

Basic Bibliography:

1. Detailed Lecture notes in Power Point (available in pdf format)
2. Selected publications from: The American Journal of Physics, Nature Physics, Nature Nantotechnology, Nano Letter, Science.

Additional Bibliography:

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