

Modern Trends in Nano-Optics

Course Workload		Assessment form (examination/ graded test/ ungraded test)
ECTS	Hours	
6	216	Exam

As of 2018, according to a UNESCO report, the number of scientists in the world is approaching 9 million, publishing more than 1 million research papers per year in all scientific disciplines. One of the leaders in terms of the amount of published data is nanophotonics, covering disciplines from biophysics to theoretical mechanics. However, how and why should we, as scientists, process and understand this sea of data? Which of the published articles really deserves our attention and can be considered a certain trend? How to critically and independently assess the importance of someone else's scientific work and understand its relevance? This course will help you with these issues, aimed at developing critical thinking, analyzing the hidden details of scientific articles and then presenting modern trends through a presentation in a simple language accessible to a broad audience. The discipline is designed to develop critical scientific thinking, skills in parsing new scientific material and searching for the real meaning of research work, as well as teaching students the skills of presenting relevant scientific results in a public language for a professional and broad audience, which may include scientific and pop speeches, interviews, and diploma theses. In case of successful completion of the course, the results of training will be

- Acquiring critical scientific thinking skills
- Acquiring the skill of analyzing the details of scientific texts
- Acquiring the skill of scientific speaking in front of a broad audience
- Acquisition of the skill of presentations constructing
- Acquiring the skill of scientific discussion and scientific criticism
- Skill in using modern databases for targeted search and selection of scientific articles
- Skill in using modern information technologies for visualization and presentation of information.

Course structure:

1. Introduction

1.1. The current situation in the scientific community as a competitive social environment

1.2. Substantiation of the importance of conveying information using accessible methods

1.3. Who needs to hear me and why?

1.4. Methods for communicating information to a wide audience

2. Demonstration

2.1. Demonstration scientific talk for a wide audience, containing intentional errors and omissions

2.2. Demonstration of a critical analysis of a scientific talk and topic

2.3. Demonstration of critical scientific discussion

3. Training

3.1. Choosing a scientific topic for analysis

3.2. Critical analysis of the content of a scientific work (article) and additional materials

3.3. Work on the content of the talk

3.4. Work on the presentation
