Adam Mickiewicz University in Poznań

Doctoral School of Exact Sciences AMU

Research Workshop

prof. dr hab. Mariusz Makowski

Field of science	Chemistry
Teaching method	Lecture and seminar
Language	English
Numbers of hours	18
Aims of the course	**The course includes the following objectives:** • planning and delivering by each PhD student a presentation, substantively correct, on the research workshop addressing the main theses pursued in their doctoral research; • planning and delivering by each PhD student a presentation, substantively correct, on a topic indicated by the instructor, using available tools; • independent collection and processing of scientific information based on literature searches; • independent preparation of substantively and formally correct oral presentations using multimedia techniques and available tools.
Course contents	**The program content is diverse and tailored to the scope of the research carried out by each individual PhD student.** It includes, among others, issues related to: • the current state of knowledge in the doctoral student's research area, • advantages and risks of using artificial intelligence, • the individual research plan, • responsibility in scientific activity and in the popularization of science, • transfer and protection of intellectual property, • open access, • ethics of scientific work.
Prerequisites and co-requisites	NONE

Learning outcomes

E_W02: at an advanced level research methodology appropriate for the discipline of science in which education takes place, which allows for proper selection of research theories and tools and their effective application and modification within the framework of own research; (P8U_W; P8S_WG)

E_W04: legal, ethical and other relevant conditions of scientific activity; (P8U_W; P8S_WK)

E_U01: use knowledge from various disciplines of science to creatively identify, formulate and innovatively solve complex research problems or perform advanced research tasks. In particular, he/she is able to:
- define the objectives and the subject of scientific research,
- formulate research hypotheses,
- develop research methods, techniques and tools and apply them creatively and effectively,
- draw conclusions on the basis of scientific evidence; (P8U_U; P8S_UW)

E_K01: critical evaluation of the work in the field of the scientific discipline within which the education is provided and its own contribution to the development of this discipline; (P8U_K; P8S_KK).

On completion of the course PhD candidates will be able to:	Assessment mode
• plan and deliver a substantively correct presentation on their research workshop addressing the main theses of their doctoral dissertation; • plan and deliver a substantively correct presentation on a topic assigned by the instructor, using available tools; • independently collect and process scientific information based on literature searches; • independently prepare and deliver substantively and formally correct oral presentations using multimedia techniques and available tools; • demonstrate awareness of key aspects of responsible research practice, including research ethics, open access, popularization of science, and the transfer and protection of intellectual property.	• **in accordance with the Regulations of the Doctoral Schools of Adam Mickiewicz University** • **pass**

Literature	Selected books and scientific articles relevant to the doctoral student's research area.
Additional information	**Forms of course credit:** preparation and delivery of at least two presentations by each participant. **Basic assessment criteria or examination requirements:** a substantively correct and well-delivered multimedia presentation. **Methods of verifying the intended learning outcomes within the course:** • **Verification of knowledge acquisition:** Assessment of the two prepared presentations in terms of research methodology and the use of research techniques and tools. During presentations, attention is paid to responsibility in scientific activity and in the popularization of science; transfer and protection of intellectual property; open access; and research ethics. • **Verification of skills acquisition:** Assessment of independently prepared and delivered multimedia presentations. Evaluation of the correctness of the planned research and measurements. Group discussion. • **Verification of social competences acquisition:** Observation of the student during classes and evaluation of their individual work as well as their participation in discussions during classes.