

LO1. KNOWLEDGE AND REASONING

- LO1.1. To interpret contemporary chemical knowledge on the factual and conceptual level in accordance with the most recent scientific knowledge and in correlation with related scientific disciplines (mathematics, physics, biology)
- LO1.2. To create and value new experimental and theoretical principles related to specific branches of chemistry
- LO1.3. To critically analyze and apply various research procedures and methods within a selected branch of chemistry

LO2. COMPREHENSION SKILLS

- LO2.1. To select a theoretical framework and methodology for independent research
- LO2.2. To select relevant scientific and professional publications on a given topic
- LO2.3. To design and perform advanced, complex chemical experiments and research procedures

LO3. PSYCHOMOTOR SKILLS

- LO3.1. To conduct complex laboratory procedures with the use of modern instruments and techniques
- LO3.2. To develop and creatively use new models for the interpretation of experimental results
- LO3.3. To have the capacity of critical analysis, evaluation and synthesis of new and complex ideas

LO4. SOCIAL SKILLS

- LO4.1. To summarize and explain own research and a research from reference works
- LO4.2. To write down the results of independent research in given format – in form of a scientific article, poster, presentation
- LO4.3. To defend hypotheses, methods, attitudes, results and conclusions of own research

LO5. INDEPENDENCE

- LO5.1. To organize and participate in a research team and to adjust to the requirements of work environment with individuals and groups of various affiliations and various cultural and ethnic background
- LO5.2. To use scientific and professional reference works independently and to present scientific topics in oral and in written form
- LO5.3. To independently monitor the development of new knowledge in the field of chemistry and to provide expert opinion about its reach and possible applications

LO6. RESPONSIBILITY

- LO6.1. To responsibly approach the implementation and performance of tasks
- LO6.2. To apply ethical principles of research
- LO6.3. To evaluate critically the role of chemistry in the society including the awareness of health, safety and environmental impact of chemistry