

**Course title:** Innovative research directions in organic chemistry – ~~selectable~~ / regular course

**Number of contact hours:** 30 hours (lectures)

**ETCS credits:** 2

**Course description:** The lecture concerns mainly the topics related to current development directions in organic chemistry. Other issues discussed in the course are planning and conducting advanced organic syntheses, especially reaction mechanisms. The lecture also concentrates on obtaining compounds with potential biological activity. Another subject discussed is a wide range of spectroscopic methods used in physicochemical research and for determining structure, stereochemistry, and conformation of organic compounds. The course also concerns a range of topics on “green chemistry” and unconventional techniques of practical organic chemistry.

**Education effects** (P6S\_UW, P6S\_WG, P7S\_UW, P7S\_WG):

- **knowledge:** the student knows basic topics of current organic chemistry, both synthesis and methods of structure determination.

- **skills:** the student can present several basic synthesis methods used in the current organic synthesis and evaluate the reasons for the use of spectroscopic methods within determination of compound structures.

- **social:** the student can search for topic-related, specialised literature independently and in a group.

**Literature:**

[1 ] M. B. Smith, J. March March's Advanced Organic Chemistry: Reactions, Mechanisms, and Structure, Wiley & Sons 2006.

[2] R. Bruckner Organic Mechanisms: Reactions, Stereochemistry and Synthesis, Springer-Verlag, Berlin Heidelberg, 2010.

[3] Organic Structural Spectroscopy; J.B. Lambert, H.F. Lightner, R.G. Cooks

**Assessment method:** Final test

**Prerequisites:** Basic knowledge in organic chemistry and technology

**Primary target group:** All specialties students

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