Modern Synthetic Methods in Organic Chemistry

Lecturer: Prof. Dr. Eric Fillion (University of Waterloo, Canada)

Course description:

This course will familiarize students with some of the modern synthetic methods used in academia and industry for the formation of carbon-carbon σ bonds in organic compounds. An array of anionic, cationic, pericyclic, and organometallic methods will be introduced, namely condensations and alpha substitutions of carbonyl compounds, conjugate addition to α,β-unsaturated carbonyl compounds, Friedel-Crafts alkylation/acylation reactions and related processes, pericyclic reactions (cycloadditions, electrocyclizations, and sigmatropic rearrangements), and organometallic-promoted reactions, with a particular attention to cross-coupling, and C-H functionalization reactions. The importance of carbon-carbon σ bond forming processes in academia and industry will be illustrated by examples selected from the contemporary literature. An emphasis on natural product synthesis and retrosynthetic analysis will allow to broaden some fundamentals of modern synthetic organic chemistry, namely stereoselective synthesis in cyclic and acyclic systems, protective group, and reduction/oxidation strategies. Synthetic planning will be discussed in detail along with some classic and modern total syntheses of natural products.

Syllabus of the lecture:

1. Formation of carbon-carbon σ bonds
2. Organometallic chemistry
3. Stereoselective synthesis

… Natural product synthesis

TERMINY WYKLADÓW			
Data	**Dzień tygodnia**	**Godzina**	**Sala**
12 maj 2014	poniedziałek	9.00-12.00	LUWR (Chemia A)
13 maj 2014	wtorek	9.00-12.00	LUWR (Chemia A)
14 maj 2014	środa	9.00-12.00	LUWR (Chemia A)
15 maj 2014	czwartek	9.00-12.00	LUWR (Chemia A)
16 maj 2014	piątek	9.00-12.00	LUWR (Chemia A)

Projekt „Rozwój interdyscyplinarnych studiów doktoranckich na Politechnice Gdańskiej w zakresie nowoczesnych technologii" jest współfinansowany przez Unię Europejską w ramach Europejskiego Funduszu Społecznego.