Zurich University of Applied Sciences

School of Engineering

# t.OC - Organische Chemie

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| **Person responsible for the course:** | Dirk Penner, penr |
| **Credits:** | 3 |
| **Valid for:** | 2010/2011 |
| **Last saved:** | 12.07.2010 10:30 |

**Learning objectives:**

- Knowledge of organic structure principles and ability of drawing structural formulas
- Estimate physical and chemical properties based on the structural formula
- Relation between structure and reaction
- Knowledge of some important organic chemical reactions and mechanisms
- Knowledge of basic stereochemistry concepts
- Knowledge of IUPAC nomenclature rules

**Course content:**

fossil oil, oil production, refinement, cracking, petrochemistry
Alkanes, isomery, mesomery, aromatics, carbocycles, heterocycles, functional groups
Nomenclature
Stereo chemistry, enantiomeres, diastereomers, optical rotation, CIP, D/L - +/-
NMR
Nucleophilic substitution SN1, SN2
Elimination
Addition
Cycloaddition
Electrophilic aromatic substitution
Carbonyl reactions - reactivity of carbonyls
Esterification, hydrolysis, enzymatic hydrolysis
Fat, oil, wax
Surfactants
Addition of amines, amides, polyamides, peptides
Oxidation - aldehyde/ketone synthesis
Aldol addition
Grignard reaction
Claisen condensation
Wittig reaction
Carbohydrates - sugars, saccharides, polysaccharides

**Previous knowledge:**

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**Teaching method:**

| Type of lesson: | Number of lessons per week: |
|---|---|
| Lecture | 14x3L |
| Tutorial/Practicum | |
| Group teaching | |
| Block instruction | |
| Seminar | |

**Assessment:**

According to the table or as specified in writing by the lecture at the beginning of the semester!

| Number | Type | Weighting |
|---|---|---|
| 1 | End of term exam | |
| | Exam during the semester | |
| | Further assessments | |

**Language of instruction:**

Deutsch

**Instruction material:**

978-3-13-484309-5 Chemie Mortimer Ch.E., Müller U. Thieme 9. 2007

978-3-527-31801-8 Organische Chemie Hart, Craine, Hart, Hadad Wiley-VCH 3. 2007

**Comments:**

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