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| **Title and code** of the subject:  **Organic chemistry, MTBE7002A** | **ECTS Credit Points: 3** |
| **Type** of the subject: **compulsory** / optional | |
| **Ratio of theory and practice: 66%-33%** (credit%) | |
| **Type and number of classes per semester**: 2 hour(s) lecture and 1 hour(s) practice per **semester** | |
| **Type of exam**: examng the semester, written exam) | |
| **Subject in the curriculum:** **semester 1** | |
| Preliminary requirements:- | |
| Objectives: This course gives basic knowledge for the subsequent biochemistry and food chemistry subjects.  **Schedule:**  Week 1: C-hybrid states. Classification of organic compounds by carbon skeleton and functional groups. Bond line drawing.  Week 2: Intermolecular forces, polarity, physical properties of organic molecules  Week 3: Hydrocarbons. Major types of organic chemical reactions (substitution, addition, polymerization). Dienes, polyenes (terpenes). The chemical properties of terpens. Week 4: Benzene, aromatic compoumds,  Week 5: Alcohols.. ethers, tiols,  Week 6: Aldehydes , ketones  Week 7: Carboxylic acids and their derivatives  Week 8: Carbohydrates, monosaccharides,  Week 9: Carbohydrates, disaccharides, oligosaccharides and polysaccharides  Week 10. Amino acids, peptides and proteins  Week 11: Lipids I , hydrolisable lipids  Week 12: LipidsII. Non hydrolisable lipids  Week 13: Pyridine and pyrimidine and their derivatives. Purine and its derivatives. Lactim-lactam tautomerism. Structure of nucleosides and nucleotides  Week 14: Primary structure, secondary structure of nucleic acids. Relationship between the structure and biological function of nucleic acids. | |
| Skills: problem solving skills  In almost every lesson students write a test, that gives feedback about their knowledge.  Drawing Lewis structural formula and bond line formula, recognizing the different types of isomers.   1. Test + Exercises related to the intermolecular forces and physical properties 2. Test + Exercises related to hybridization and nomenclature and chemical reactions of hydrocarbons 3. Test + Exercises related to, aromatic compounds, alcohols, ethers, aldehydes, ketones, carboxylic acid. 4. Test + Exercises related to carbohydrates 5. Test + Exercises related to amino acids, proteins and lipids 6. Test + Exercises related to nucleic acids, review questions 7. Final test | |
| **Literature, handbooks in English** | |
| * + - 1. Frederick A. Bettelheim, Mary K. Campbell, Shawn O. Farrell, William H. Brow       2. Introduction to General, Organic and Biochemistry ISBN-13-9780495110699  1. [T. W. Graham Solomons](https://www.amazon.com/T.-W.-Graham-Solomons/e/B001H6O6KQ/ref=dp_byline_cont_book_1), [Craig B. Fryhle](https://www.amazon.com/s/ref=dp_byline_sr_book_2?ie=UTF8&text=Craig+B.+Fryhle&search-alias=books&field-author=Craig+B.+Fryhle&sort=relevancerank) [Scott A. Snyder](https://www.amazon.com/s/ref=dp_byline_sr_book_3?ie=UTF8&text=Scott+A.+Snyder&search-alias=books&field-author=Scott+A.+Snyder&sort=relevancerank) Organic chemistry ISBN-13: 978-1118133576 2. David R, Klein Organic chemistry as a second language 2004, John Wiley and Sons Inc, ISBN 0-471-27235-3 | |
| **Competencies gained** *(acc. to the Regulation on training and outcome requirements)* | |
| 1. **Knowledge:**  * Students gain basic chemical knowledge and English chemical terminology  1. **Skills:**  * Students gain skills and knowledge that are necessary for their further biochemistry and food chemistry studies * Students gain critical thinking and they will be capable to apply their scientific knowledge in practice   **c, Attitude**:  Students strive to analyze and solve problems in their environment  Students have healthy attitudes towards food   1. **Autonomy and responsibility:**  * Students get a sense of responsibility and can reflect on their mistakes | |

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| **Responsible lecturer: Erdeiné dr. Kremper Rita** |
| **Other lecturer(s): -** |

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| **Terms of course completion:** |
| 1. Completing tests 2. Submitting homeworks |
| **Form of examination:** |
| The results of the tests + homeworks are summarized and give the final grade. If students fail to do it they have to take a written exam. |
| **Requirement(s) to get signature:** |
| To fulfill the 35% of the tests (get signature for the practise) If the student fulfills the tests with a result of more than 50%, a grade is offered, which can be improved in a written exam. |