Course Specifications
Valid as from the academic year 2015-2016

Advanced Supermolecular Chemistry and Self-Assembly (C002570)

Course size

<table>
<thead>
<tr>
<th>Credits</th>
<th>Study time</th>
<th>Contact hrs</th>
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<tbody>
<tr>
<td>3.0</td>
<td>75 h</td>
<td>15.0 h</td>
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</tbody>
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Course offerings and teaching methods in academic year 2017-2018

A (semester 1) 
lecture 

15.0 h

Lecturers in academic year 2017-2018

Hoogenboom, Richard 
WE07 lecturer-in-charge

Offered in the following programmes in 2017-2018

- Master of Science in Chemistry
  - crdts: 3
  - offering: A
- Master of Science in Sustainable Materials Engineering
  - crdts: 3
  - offering: A
- Exchange Programme in Chemistry (master's level)
  - crdts: 3
  - offering: A

Teaching languages

English

Keywords

Supramolecular chemistry, self-assembly, advanced materials, responsive materials

Position of the course

This course is situated in the first or second master and continues on previous gained knowledge on organic chemistry and polymer chemistry, including: 'Inleiding tot organische structuren' (Ba1); 'Organische chemie: reactiviteit 1', 'Organische chemie: reactiviteit 2', 'Organische chemie: reactiviteit 3' en 'Structuuranalyse'(Ba2); 'Synthesemethoden in organische chemie'(Ba3).

It is recommended that the course 'Trends in Organic Chemistry' has already been followed.

The aim of this course is to teach the main principles of contemporary supramolecular chemistry by providing an overview and critical evaluation of recent developments in this area.

Contents

- Ionic interactions; multiple hydrogen bonding: self-complementary and complimentary hydrogen bonding arrays; metal coordination: homoleptic, heteroleptic and grid-like metal complexes; supramolecular polymers: chain-extended polymers and block copolymers; principles of surfactant self-assembly; polymer self-assembly; responsive polymer self-assembly: pH, temperature and chemoresponsive micellization; polymer-peptide conjugate assembly; supramolecular polymer assembly.

Initial competences

Passed the courses 'Inleiding tot organische structuren' (Ba1); 'Structuuranalyse'(Ba2) and 'Synthesemethoden in organische chemie' (Ba3).

Final competences

1. Gain insight in recent developments in scientific research on supramolecular chemistry and the most frequently used supramolecular binding units, as well as the most common methods to analyze these systems.
2. Able to critically evaluate and judge binding constants for different supramolecular interactions.

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences

(Approved)
Assessment

Conditions for exam contract
This course unit cannot be taken via an exam contract

Teaching methods
Lecture

Learning materials and price
Available on Minerva

References
Supramolecular Chemistry, Steed and Atwood ISBN978-0-470-51234-0

Course content-related study coaching
Through questions during the course and individual explanations on request

Evaluation methods
end-of-term evaluation

Examination methods in case of periodic evaluation during the first examination period
Written examination with open questions, oral examination

Examination methods in case of periodic evaluation during the second examination period
Written examination with open questions, oral examination

Examination methods in case of permanent evaluation

Possibilities of retake in case of permanent evaluation
not applicable

Calculation of the examination mark
Periodic evaluation 100%