

Module title		Abbreviation
Green and sustainable (organic) chemistry		o8-GC-242-m01
Module coordinator		Module offered by
lecturer of lecture "Grüne und nachhaltige (organische) Chemie"		Institute of Organic Chemistry
ECTS	Method of grading	Only after succ. compl. of module(s)
5	numerical grade	--
Duration	Module level	Other prerequisites
1 semester	undergraduate	--
Contents		
<p>The module provides an overview of the fundamental principles of green and sustainable chemistry. A focus will be on the twelve principles of green chemistry with examples from organic chemistry complemented by current environmental topics. Furthermore, life cycle assessment and aspects of sustainability beyond the directly chemistry related ones will be discussed.</p>		
Intended learning outcomes		
<p>The student understands the principles of green and sustainable chemistry and can use this knowledge as fundament to critically assess chemical reactions and processes. He/She acquired basic knowledge in life cycle assessments and is aware of sustainability aspects beyond chemistry itself. He/She can transfer the learnings to a defined topic area and analyze this in detail.</p>		
Courses (type, number of weekly contact hours, language – if other than German)		
V (2) + Ü (1) Module taught in: German or English		
Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)		
<p>a) portfolio (approx. approx. 40 hours total) or b) written examination (approx. 60 to 90 minutes) Language of assessment: German and/or English Assessment offered: Once a year, winter semester</p>		
Allocation of places		
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Additional information		
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Workload		
150 h		
Teaching cycle		
Teaching cycle: Once a year, winter semester		
Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		
<p>First state examination for the teaching degree Grundschule History (2015) Bachelor's degree (1 major) Chemistry (2015) First state examination for the teaching degree Grundschule English (2015) First state examination for the teaching degree Grundschule Biology (2015) First state examination for the teaching degree Grundschule Chemistry (2015) First state examination for the teaching degree Grundschule Geography (2015) First state examination for the teaching degree Grundschule German (2015) First state examination for the teaching degree Grundschule Catholic Theology (2015)</p>		

First state examination for the teaching degree Grundschule Mathematics (2015)
 First state examination for the teaching degree Grundschule Pedagogy of Primary Education (2015)
 First state examination for the teaching degree Grundschule Physics (2015)
 First state examination for the teaching degree Grundschule Social Science (2015)
 First state examination for the teaching degree Grundschule Didactics in English (Primary School) (2015)
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 First state examination for the teaching degree Gymnasium Russian (2015)
 First state examination for the teaching degree Gymnasium Social Science (2015)
 First state examination for the teaching degree Gymnasium Spanish Studies (2015)
 First state examination for the teaching degree Gymnasium Science of Sport (2015)
 First state examination for the teaching degree Sonderpädagogik Pedagogy of Primary Education (2015)
 First state examination for the teaching degree Sonderpädagogik Didactics in German (Primary School) (2015)

- First state examination for the teaching degree Sonderpädagogik Didactics in Catholic Theology (Primary School) (2015)
- First state examination for the teaching degree Sonderpädagogik Art Education in Primary School (2015)
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- First state examination for the teaching degree Sonderpädagogik Music Education in Primary School (2015)
- First state examination for the teaching degree Sonderpädagogik Didactics in English (Middle School) (2015)
- First state examination for the teaching degree Sonderpädagogik Ergonomics (Teaching at the German Mittelschule) (2015)
- First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2015)
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- First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2015)
- First state examination for the teaching degree Sonderpädagogik Didactics in Social Science (Middle School) (2015)
- First state examination for the teaching degree Sonderpädagogik Teaching at the German Mittelschule (2015)
- First state examination for the teaching degree Mittelschule English (2015)
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- First state examination for the teaching degree Mittelschule Chemistry (2015)
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- First state examination for the teaching degree Mittelschule Didactics in History (Middle School) (2015)
- First state examination for the teaching degree Mittelschule Didactics in Catholic Theology (Middle School) (2015)
- First state examination for the teaching degree Mittelschule Art Education in Middle School (2015)

First state examination for the teaching degree Mittelschule Didactics in Science of Sport (Middle School) (2015)
 First state examination for the teaching degree Mittelschule Didactics in Mathematics (Middle School) (2015)
 First state examination for the teaching degree Mittelschule Music Education in Middle School (2015)
 First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2015)
 First state examination for the teaching degree Mittelschule Didactics in Social Science (Middle School) (2015)
 First state examination for the teaching degree Mittelschule Science of Sport (2015)
 First state examination for the teaching degree Mittelschule Teaching at the German Mittelschule (2015)
 First state examination for the teaching degree Grundschule Protestant Theology (2015)
 First state examination for the teaching degree Grundschule Music (2015)
 First state examination for the teaching degree Grundschule Didactics in Protestant Theology (Primary School) (2015)
 First state examination for the teaching degree Realschule Music (2015)
 First state examination for the teaching degree Gymnasium Music (2015)
 First state examination for the teaching degree Gymnasium Music Education, Advanced Studies (2015)
 First state examination for the teaching degree Sonderpädagogik Didactics in Protestant Theology (Primary School) (2015)
 First state examination for the teaching degree Mittelschule Music (2015)
 First state examination for the teaching degree Gymnasium French Studies (2016)
 First state examination for the teaching degree Gymnasium Italian Studies (2016)
 First state examination for the teaching degree Gymnasium Spanish Studies (2016)
 First state examination for the teaching degree Realschule French Studies (2016)
 First state examination for the teaching degree Grundschule English (2016)
 First state examination for the teaching degree Grundschule Didactics in English (Primary School) (2016)
 First state examination for the teaching degree Realschule English (2016)
 First state examination for the teaching degree Gymnasium English (2016)
 First state examination for the teaching degree Mittelschule English (2016)
 First state examination for the teaching degree Mittelschule Didactics in English (Middle School) (2016)
 First state examination for the teaching degree Sonderpädagogik Didactics in English (Middle School) (2016)
 Bachelor's degree (1 major) Biochemistry (2017)
 Bachelor's degree (1 major) Chemistry (2017)
 First state examination for the teaching degree Gymnasium Greek Philology (2018)
 First state examination for the teaching degree Grundschule Physics (2018)
 First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2018)
 First state examination for the teaching degree Realschule Physics (2018)
 First state examination for the teaching degree Gymnasium Physics (2018)
 First state examination for the teaching degree Mittelschule Physics (2018)
 First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2018)
 First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2018)
 First state examination for the teaching degree Gymnasium Mathematics (2019)
 First state examination for the teaching degree Mittelschule Biology (2020 (Prüfungsordnungsversion 2015))
 First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))
 First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))
 First state examination for the teaching degree Mittelschule Chemistry (2020 (Prüfungsordnungsversion 2015))
 First state examination for the teaching degree Mittelschule Didactics in Chemistry (Middle School) (2020 (Prüfungsordnungsversion 2015))
 First state examination for the teaching degree Mittelschule German (2020 (Prüfungsordnungsversion 2015))
 First state examination for the teaching degree Mittelschule Didactics in German (Middle School) (2020 (Prüfungsordnungsversion 2015))
 First state examination for the teaching degree Mittelschule English (2020 (Prüfungsordnungsversion 2016))
 First state examination for the teaching degree Mittelschule Didactics in English (Middle School) (2020 (Prüfungsordnungsversion 2016))

First state examination for the teaching degree Mittelschule Protestant Theology (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Mittelschule Didactics in Protestant Theology (Middle School) (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Mittelschule Geography (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Mittelschule Didactics in Geography (Middle School) (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Mittelschule History (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Mittelschule Didactics in History (Middle School) (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Mittelschule Catholic Theology (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Mittelschule Didactics in Catholic Theology (Middle School) (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Mittelschule Mathematics (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Mittelschule Didactics in Mathematics (Middle School) (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Mittelschule Art Education in Middle School (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Mittelschule Science of Sport (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Mittelschule Didactics in Science of Sport (Middle School) (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Mittelschule Music (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Mittelschule Music Education in Middle School (2020 (Prüfungsordnungsversion 2015))

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First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Primary School) (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Sonderpädagogik Pedagogy of Primary Education (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Sonderpädagogik Didactics in Protestant Theology (Primary School) (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Sonderpädagogik Didactics in Catholic Theology (Primary School) (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2020)

First state examination for the teaching degree Grundschule Physics (2020)

First state examination for the teaching degree Gymnasium Physics (2020)

First state examination for the teaching degree Realschule Physics (2020)

First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2020)

First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2020)

First state examination for the teaching degree Mittelschule Physics (2020)

First state examination for the teaching degree Grundschule Political and Social Studies (2020)

First state examination for the teaching degree Grundschule Didactics in Political and Social Studies (Primary School) (2020)

First state examination for the teaching degree Sonderpädagogik MS-Didaktik Career and Economics (2020)

First state examination for the teaching degree Sonderpädagogik Didactics in Political and Social Studies (Secondary School) (2020)

First state examination for the teaching degree Mittelschule MS-Didaktik Career and Economics (2020)

First state examination for the teaching degree Mittelschule Didactics in Political and Social Studies (Secondary School) (2020)

First state examination for the teaching degree Mittelschule Political and Social Studies (2020)

First state examination for the teaching degree Gymnasium Political and Social Studies (2020)

First state examination for the teaching degree Grundschule History (2021)

First state examination for the teaching degree Gymnasium History (2021)

First state examination for the teaching degree Realschule History (2021)

First state examination for the teaching degree Mittelschule History (2021)

First state examination for the teaching degree Grundschule Pedagogy of Primary Education (2021)

First state examination for the teaching degree Gymnasium English (2021)

First state examination for the teaching degree Gymnasium Philosophy and Ethics (2021)

First state examination for the teaching degree Sonderpädagogik Pedagogy of Primary Education (2021)

Bachelor's degree (1 major) Biochemistry (2022)

First state examination for the teaching degree Gymnasium Philosophy and Ethics (2022)

First state examination for the teaching degree Gymnasium Russian (2023)

First state examination for the teaching degree Gymnasium Mathematics (2023)

First state examination for the teaching degree Gymnasium English (2023)

First state examination for the teaching degree Realschule English (2023)

First state examination for the teaching degree Grundschule English (2023)

First state examination for the teaching degree Grundschule Didactics in English (Primary School) (2023)

First state examination for the teaching degree Mittelschule English (2023)

First state examination for the teaching degree Mittelschule Didactics in English (Middle School) (2023)

First state examination for the teaching degree Sonderpädagogik Didactics in English (Middle School) (2023)

First state examination for the teaching degree Gymnasium Geography (2023)

First state examination for the teaching degree Realschule Geography (2023)

First state examination for the teaching degree Grundschule Geography (2023)
 First state examination for the teaching degree Mittelschule Geography (2023)
 First state examination for the teaching degree Grundschule German (2024)
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 First state examination for the teaching degree Sonderpädagogik Music Education in Primary School (2024)
 First state examination for the teaching degree Mittelschule Music Education in Middle School (2024)
 First state examination for the teaching degree Sonderpädagogik Music Education in Middle School (2024)
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 First state examination for the teaching degree Gymnasium German (2025)
 First state examination for the teaching degree Mittelschule German (2025)
 First state examination for the teaching degree Realschule Computer Science (2025)
 First state examination for the teaching degree Gymnasium Computer Science (2025)
 First state examination for the teaching degree Grundschule Psychology with a specialization in school psychology (2025)
 First state examination for the teaching degree Mittelschule Psychology with a specialization in school psychology (2025)
 First state examination for the teaching degree Realschule Psychology with a specialization in school psychology (2025)
 First state examination for the teaching degree Gymnasium Psychology with a specialization in school psychology (2025)
 First state examination for the teaching degree Gymnasium Russian (2026)
 First state examination for the teaching degree Realschule French Studies (2026)
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