

Module title		Abbreviation
Basics and Trends in the Biotechnologies / Biosciences (not für students of Bioscientific curricula)		07-ASQ-GTB-182-m01
Module coordinator		Module offered by
holder of the Chair of Biotechnology		Faculty of Biology
ECTS	Method of grading	Only after succ. compl. of module(s)
3	(not) successfully completed	--
Duration	Module level	Other prerequisites
1 semester	undergraduate	--
Contents		
This module (lecture and seminar) will provide students with an overview of instrument-based methods in biotechnology and biomedicine and the underlying physical principles. It will discuss modern methods for the analysis of biological matter on the molecular and cellular level. These methods include light microscopy, fluorescence spectroscopy, electron microscopy, atomic force microscopy, flow cytometry and microfluidics.		
Intended learning outcomes		
Students will gain an overview of key methods in biotechnology and their respective advantages and disadvantages. They will learn to decide what method is most suitable for addressing a particular issue.		
Courses (type, number of weekly contact hours, language – if other than German)		
S (2)		
Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)		
presentation (20 to 30 minutes) Language of assessment: German and/or English		
Allocation of places		
min. 4, max. 20 places (lot)		
Additional information		
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Workload		
90 h		
Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		
Bachelor' degree (1 major) Biology (2011) Bachelor' degree (1 major) Chemistry (2010) Bachelor' degree (1 major) Geography (2010) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Physics (2012) Bachelor' degree (1 major) Psychology (2010) Bachelor' degree (1 major) Economathematics (2012) Bachelor' degree (1 major) Media Communication (2012) Bachelor' degree (1 major) Political and Social Studies (2011) Bachelor' degree (1 major) Romanic Languages (French/Spanish) (2013) Bachelor's degree (1 major, 1 minor) Pedagogy (2011) Bachelor's degree (1 major, 1 minor) Pedagogy (2009) Bachelor's degree (1 major, 1 minor) Pedagogy (2013) Bachelor's degree (1 major, 1 minor) French Studies (2013) Bachelor's degree (1 major, 1 minor) History (2010)		

Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2013)
 Bachelor's degree (1 major, 1 minor) Philosophy (2013)
 Bachelor's degree (1 major, 1 minor) Pre- and Protohistoric Archaeology (2012)
 Bachelor's degree (1 major, 1 minor) Spanish Studies (2010)
 Bachelor's degree (1 major, 1 minor) Philosophy and Religion (2014)
 Bachelor's degree (1 major, 1 minor) Political and Social Studies (2013)
 Bachelor's degree (1 major, 1 minor) Museology and material culture (2013)
 Bachelor's degree (1 major, 1 minor) English and American Studies (2010)
 Bachelor's degree (1 major, 1 minor) Russian Language and Culture (2008)
 Bachelor's degree (1 major, 1 minor) Gallo-Roman philology (2010)
 Bachelor's degree (1 major, 1 minor) German Language and Literature (2013)
 Bachelor's degree (1 major, 1 minor) German Language and Literature (2010)
 Bachelor's degree (1 major, 1 minor) Italian Studies (2010)
 Bachelor's degree (2 majors) Egyptology (2011)
 Bachelor's degree (2 majors) Classical Archaeology (2013)
 Bachelor's degree (2 majors) Pedagogy (2013)
 Bachelor's degree (2 majors) Protestant Theology (2009)
 Bachelor's degree (2 majors) History of Medieval and Modern Art (2013)
 Bachelor's degree (2 majors) Philosophy (2013)
 Bachelor's degree (2 majors) Special Education (2009)
 Bachelor's degree (2 majors) Digital Humanities (2012)
 Bachelor's degree (2 majors) Political and Social Studies (2011)
 Bachelor's degree (2 majors) Russian Language and Culture (2012)
 Bachelor's degree (2 majors) European Ethnology (2013)
 Magister Theologiae Catholic Theology (2013)
 Bachelor's degree (2 majors) Spanish Studies (2013)
 Bachelor's degree (2 majors) Spanish Studies (2009)
 Bachelor's degree (2 majors) English and American Studies (2009)
 Bachelor's degree (2 majors) Gallo-Roman philology (2009)
 Bachelor's degree (2 majors) German Language and Literature (2013)
 Bachelor's degree (2 majors) Italian Studies (2009)
 Bachelor' degree (1 major) Biochemistry (2015)
 Bachelor' degree (1 major) Biology (2015)
 Bachelor' degree (1 major) Chemistry (2015)
 Bachelor' degree (1 major) Geography (2015)
 Bachelor' degree (1 major) Computer Science (2015)
 Bachelor' degree (1 major) Food Chemistry (2015)
 Bachelor' degree (1 major) Mathematics (2015)
 Bachelor' degree (1 major) Musicology (2015)
 Bachelor' degree (1 major) Physics (2015)
 Bachelor' degree (1 major) Psychology (2015)
 Bachelor' degree (1 major) Business Management and Economics (2015)
 Bachelor' degree (1 major) Nanostructure Technology (2015)
 Bachelor' degree (1 major) Econometrics (2015)
 Bachelor' degree (1 major) Business Information Systems (2015)
 Bachelor' degree (1 major) Biomedicine (2015)
 Bachelor' degree (1 major) Mathematical Physics (2015)
 Bachelor' degree (1 major) Human-Computer Systems (2015)
 Bachelor' degree (1 major) Modern China (2015)
 Bachelor' degree (1 major) Music Education (2015)
 Bachelor' degree (1 major) Computational Mathematics (2015)
 Bachelor' degree (1 major) Aerospace Computer Science (2015)
 Bachelor' degree (1 major) Political and Social Studies (2015)

Bachelor' degree (1 major) Functional Materials (2015)
 Bachelor' degree (1 major) Academic Speech Therapy (2015)
 Bachelor' degree (1 major) Indology/South Asian Studies (2015)
 Bachelor's degree (1 major, 1 minor) Egyptology (2015)
 Bachelor's degree (1 major, 1 minor) Classical Archaeology (2015)
 Bachelor's degree (1 major, 1 minor) Pedagogy (2015)
 Bachelor's degree (1 major, 1 minor) History (2015)
 Bachelor's degree (1 major, 1 minor) Italian Studies (2015)
 Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2015)
 Bachelor's degree (1 major, 1 minor) Musicology (2015)
 Bachelor's degree (1 major, 1 minor) Philosophy (2015)
 Bachelor's degree (1 major, 1 minor) Pre- and Protohistoric Archaeology (2015)
 Bachelor's degree (1 major, 1 minor) Ancient World (2015)
 Bachelor's degree (1 major, 1 minor) Music Education (2015)
 Bachelor's degree (1 major, 1 minor) Philosophy and Religion (2015)
 Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2015)
 Bachelor's degree (1 major, 1 minor) Theological Studies (2015)
 Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2015)
 Bachelor's degree (1 major, 1 minor) Political and Social Studies (2015)
 Bachelor's degree (1 major, 1 minor) Museology and material culture (2015)
 Bachelor's degree (1 major, 1 minor) English and American Studies (2015)
 Bachelor's degree (1 major, 1 minor) Russian Language and Culture (2015)
 Bachelor's degree (1 major, 1 minor) German Language and Literature (2015)
 Bachelor's degree (2 majors) Egyptology (2015)
 Bachelor's degree (2 majors) Classical Archaeology (2015)
 Bachelor's degree (2 majors) Pedagogy (2015)
 Bachelor's degree (2 majors) Protestant Theology (2015)
 Bachelor's degree (2 majors) History of Medieval and Modern Art (2015)
 Bachelor's degree (2 majors) Musicology (2015)
 Bachelor's degree (2 majors) Philosophy (2015)
 Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2015)
 Bachelor's degree (2 majors) Special Education (2015)
 Bachelor's degree (2 majors) Pre- and Protohistoric Archaeology (2015)
 Bachelor's degree (2 majors) Latin Philology (2015)
 Bachelor's degree (2 majors) Music Education (2015)
 Bachelor's degree (2 majors) Philosophy and Religion (2015)
 Bachelor's degree (2 majors) Theological Studies (2015)
 Bachelor's degree (2 majors) Digital Humanities (2015)
 Bachelor's degree (2 majors) Political and Social Studies (2015)
 Bachelor's degree (2 majors) Russian Language and Culture (2015)
 Bachelor's degree (2 majors) Greek Philology (2015)
 Bachelor's degree (2 majors) European Ethnology (2015)
 Bachelor's degree (2 majors) Indology/South Asian Studies (2015)
 Bachelor's degree (2 majors) Ancient Near Eastern Studies (2015)
 Bachelor's degree (2 majors) Geography (2015)
 Bachelor's degree (2 majors) French Studies (2015)
 Bachelor's degree (2 majors) History (2015)
 Bachelor's degree (2 majors) Sport Science (Focus on health and Pedagogics in Movement) (2015)
 Bachelor's degree (2 majors) German Language and Literature (2015)
 Bachelor' degree (1 major) Mathematical Physics (2016)
 Bachelor' degree (1 major) Human-Computer Systems (2016)
 Bachelor's degree (2 majors) Theological Studies (2011)
 Bachelor's degree (1 major, 1 minor) French Studies (2016)

Bachelor's degree (2 majors) French Studies (2016)
 Bachelor's degree (1 major, 1 minor) Italian Studies (2016)
 Bachelor's degree (2 majors) Italian Studies (2016)
 Bachelor's degree (1 major, 1 minor) Spanish Studies (2016)
 Bachelor's degree (2 majors) Spanish Studies (2016)
 Bachelor' degree (1 major) Romanic Languages (French/Italian) (2016)
 Bachelor' degree (1 major) Romanic Languages (French/Spanish) (2016)
 Bachelor' degree (1 major) Romanic Languages (Italian/Spanish) (2016)
 Bachelor' degree (1 major) Business Information Systems (2016)
 Bachelor' degree (1 major) Games Engineering (2016)
 Bachelor's degree (1 major, 1 minor) English and American Studies (2016)
 Bachelor's degree (2 majors) English and American Studies (2016)
 Bachelor' degree (1 major) Media Communication (2016)
 Bachelor' degree (1 major) Food Chemistry (2016)
 Bachelor's degree (1 major, 1 minor) Digital Humanities (2016)
 Bachelor' degree (1 major) Biology (2017)
 Bachelor's degree (1 major, 1 minor) Geography (2017)
 Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2017)
 Bachelor's degree (2 majors) History of Medieval and Modern Art (2017)
 Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2017)
 Bachelor' degree (1 major) Aerospace Computer Science (2017)
 Bachelor' degree (1 major) Modern China (2017)
 Bachelor' degree (1 major) Biochemistry (2017)
 Bachelor' degree (1 major) Chemistry (2017)
 Bachelor's degree (1 major, 1 minor) Museology and material culture (2017)
 Bachelor' degree (1 major) Econometrics (2017)
 Bachelor' degree (1 major) Games Engineering (2017)
 Bachelor' degree (1 major) Computer Science (2017)
 Bachelor' degree (1 major) Media Communication (2018)
 Bachelor' degree (1 major) Biomedicine (2018)
 Bachelor' degree (1 major) Human-Computer Systems (2018)
 Bachelor's degree (2 majors) Classical Archaeology (2018)
 Bachelor's degree (1 major, 1 minor) Classical Archaeology (2018)
 Bachelor's degree (1 major, 1 minor) Digital Humanities (2018)
 Bachelor's degree (2 majors) Digital Humanities (2018)
 Bachelor' degree (1 major) Computer Science (2019)
 Bachelor's degree (1 major, 1 minor) English and American Studies (2019)
 Bachelor's degree (1 major, 1 minor) Indology/South Asian Studies (2019)
 Bachelor' degree (1 major) Indology/South Asian Studies (2019)
 Bachelor' degree (1 major) Business Information Systems (2019)
 Bachelor's degree (2 majors) Indology/South Asian Studies (2019)
 Bachelor' degree (1 major) Business Management and Economics (2019)
 Bachelor' degree (1 major) Modern China (2019)
 Bachelor' degree (1 major) Food Chemistry (2019)
 Bachelor' degree (1 major) Biomedicine (2020)
 Bachelor' degree (1 major) Pedagogy (2020)
 Bachelor' degree (1 major) Political and Social Studies (2020)
 Bachelor' degree (1 major) Business Information Systems (2020)
 Bachelor's degree (1 major, 1 minor) Political and Social Studies (2020)
 Bachelor's degree (2 majors) European Ethnology (2020)
 Bachelor's degree (2 majors) Political and Social Studies (2020)
 Bachelor's degree (2 majors) Special Education (2020)
 Bachelor' degree (1 major) Physics (2020)

Bachelor' degree (1 major) Nanostructure Technology (2020)
 Bachelor' degree (1 major) Mathematical Physics (2020)
 Bachelor' degree (1 major) Aerospace Computer Science (2020)
 Bachelor's degree (1 major, 1 minor) Museology and material culture (2020)
 Bachelor's degree (1 major, 1 minor) Pedagogy (2020)
 Bachelor's degree (2 majors) Pedagogy (2020)
 Bachelor' degree (1 major) Psychology (2020)
 Bachelor' degree (1 major) Biology (2021)
 Magister Theologiae Catholic Theology (2021)
 Bachelor's degree (2 majors) History (2021)
 Bachelor's degree (1 major, 1 minor) History (2021)
 Bachelor' degree (1 major) Media Communication (2021)
 Bachelor's degree (2 majors) Theological Studies (2021)
 Bachelor's degree (1 major, 1 minor) Theological Studies (2021)
 Bachelor's degree (1 major, 1 minor) English and American Studies (2021)
 Bachelor's degree (2 majors) English and American Studies (2021)
 Bachelor' degree (1 major) Functional Materials (2021)
 Bachelor' degree (1 major) Computer Science und Sustainability (2021)
 Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2021)
 Bachelor' degree (1 major) Food Chemistry (2021)
 Bachelor' degree (1 major) Quantum Technology (2021)
 Bachelor's degree (2 majors) Special Education (2021)
 Bachelor' degree (1 major) Business Information Systems (2021)
 Bachelor' degree (1 major) Economathematics (2021)
 Bachelor' degree (1 major) Business Management and Economics (2021)
 Bachelor' degree (1 major) Human-Computer Systems (2022)
 Bachelor's degree (1 major, 1 minor) Museology and material culture (2022)
 Bachelor' degree (1 major) Biochemistry (2022)
 Bachelor' degree (1 major) Biology (2022)
 Bachelor' degree (1 major) Economathematics (2022)
 Bachelor' degree (1 major) Mathematical Data Science (2022)
 Bachelor' degree (1 major) Artificial Intelligence and Data Science (2022)
 Bachelor's degree (2 majors) Ancient Near Eastern Archaeology (2022)
 Bachelor's degree (1 major, 1 minor) Ancient World (2022)
 Bachelor's degree (2 majors) Ancient Near Eastern Studies (2022)
 Bachelor' degree (1 major) Franco-German studies: language, culture, digital competence (2022)
 Bachelor' degree (1 major) Midwifery (2022)