

## Pflichtmodule

### BIO.08775.01 - Research project module 'Molecular and Cellular Biosciences'

BIO.08775.01		30 CP
<b>Module label</b>	Research project module 'Molecular and Cellular Biosciences'	
<b>Module code</b>	BIO.08775.01	
<b>Semester of first implementation</b>		
<b>Module used in courses of study / semesters</b>	<ul style="list-style-type: none"> <li>Molecular and Cellular Biosciences (MA120 LP) (Master) &gt; Biologie MoCeBioMA120, Version of accreditation valid from SoSe 2026 &gt; Pflichtmodule</li> </ul>	
<b>Responsible person for this module</b>		
<b>Further responsible persons</b>	Professors of the study program	
<b>Prerequisites</b>	At least 75 credit points /// * <b>Students will have to submit the application form for the module in the examination office ('Prüfungsamt') prior to the start of the module *</b>	
<b>Skills to be acquired in this module</b>	<ul style="list-style-type: none"> <li>Students will gain the ability to tackle a complex scientific problem, to plan, execute and analyze the data and document the data in an objective and scientific manner.</li> <li>Students will learn how to write a scientific thesis independently.</li> <li>Students will learn how to document and communicate their own scientific data.</li> <li>Students will learn how to present document their acquired results in a written scientific format.</li> </ul>	
<b>Module contents</b>	<ul style="list-style-type: none"> <li>Use of project-specific literature and databases to support one's results</li> <li>Learn to use the appropriate data analysis tools to analyze and evaluate critically data</li> <li>Learn how to present document acquired results in a written scientific format</li> <li>Learn how to present and discuss results in the form of a scientific talk</li> </ul>	
<b>Forms of instruction</b>	Course Course Course Course	
<b>Languages of instruction</b>	German, English	
<b>Duration (semesters)</b>	1 Semester Semester	
<b>Module frequency</b>	jedes Semester	
<b>Module capacity</b>	unrestricted	
<b>Time of examination</b>		
<b>Credit points</b>	30 CP	
<b>Share on module final degree</b>	Course 1: %; Course 2: %; Course 3: %; Course 4: %.	
<b>Share of module grade on the course of study's final grade</b>	1	
<b>Examination</b>	<b>Exam prerequisites</b>	<b>Type of examination</b>
<b>Course 1</b>		
<b>Course 2</b>		
<b>Course 3</b>		
<b>Course 4</b>		
<b>Final exam of module</b>	Written Master thesis, Oral presentation and public defense	
<b>Exam repetition information</b>		

Module course label	Course type	Course title	SWS	Workload of compulsory attendance	Workload of preparation / homework etc	Workload of independent learning	Workload (examination and preparation)	Sum workload
<b>Course 1</b>	Course	Experimental work and literature search						0
<b>Course 2</b>	Course	Analysis of the data and assessment of the literature						0
<b>Course 3</b>	Course	Writing of the thesis						0
<b>Course 4</b>	Course	Preparation of the talk and public defense of the thesis						0
<b>Workload by module</b>						900		900
<b>Total module workload</b>								900

## BIO.07011.03 - Research internship 'Molecular and Cellular Biosciences'

BIO.07011.03 15 CP

**Module label** Research internship 'Molecular and Cellular Biosciences'

**Module code** BIO.07011.03

**Semester of first implementation**

**Module used in courses of study / semesters**

- Molecular and Cellular Biosciences (MA120 LP) (Master) > Biologie MoCeBioMA120, Version of accreditation valid from SoSe 2026 > Pflichtmodule
- Molecular and Cellular Biosciences (MA120 LP) (Master) > Biologie MoCeBioMA120, Version of accreditation (WS 2020/21 - WiSe 2025/26) > Pflichtmodule

**Responsible person for this module**

**Further responsible persons** Professors of the study program

**Prerequisites** Successful completion of the module Fundamentals in Molecular and Cellular Biosciences and of at least one project module /// \* **Students will have to submit the application form for the module in the examination office ('Prüfungsamt') prior to the start of the module \***

**Skills to be acquired in this module**

- Acquisition of practical skills and competence necessary to work independently on a scientific project. The internship will be supervised.
- Learn how to develop a research project independently, and how to design and plan experiments to expand the current scientific knowledge.
- Learn how to document and appraise critically one's own experimental findings.
- Develop technical skills specific to the project.
- Learn how to appraise independently and critically the scientific literature.
- Learn how to evaluate scientific results.
- Discussion of scientific results in lab meetings.

**Module contents**

- The assigned project will be related to an on-going research topic in the laboratory of choice, and will be in one of the departments assigned to the MSc Molecular and Cellular Biology program.
- Students will learn methods and skills specific and appropriate to research performed in laboratory settings.
- Students will receive instruction in critical data analysis.
- Students will participate in lab seminars and discuss their scientific results.
- Students will learn how to prepare their data for scientific publication.

**Forms of instruction** Practical training (14 SWS)  
Course  
Course  
Seminar (1 SWS)  
Course

**Languages of instruction** German, English

**Duration (semesters)** 3 Monate Semester

**Module frequency** jedes Semester

**Module capacity** unrestricted

**Time of examination**

**Credit points** 15 CP

**Share on module final degree** Course 1: %; Course 2: %; Course 3: %; Course 4: %; Course 5: %.

**Share of module grade on the course of study's final grade** 1

Examination Exam prerequisites Type of examination

**Course 1**

**Course 2**

Examination			Exam prerequisites			Type of examination		
<b>Course 3</b>								
<b>Course 4</b>								
<b>Course 5</b>								
<b>Final exam of module</b>						Written scientific report		
<b>Exam repetition information</b>								
Module course label	Course type	Course title	SWS	Workload of compulsory attendance	Workload of preparation / homework etc	Workload of independent learning	Workload (examination and preparation)	Sum workload
<b>Course 1</b>	Practical training	Practical work and analysis of scientific data		14				0
<b>Course 2</b>	Course	Literature search literature search						0
<b>Course 3</b>	Course	Private study						0
<b>Course 4</b>	Seminar	Lab seminar		1				0
<b>Course 5</b>	Course	Writing of a scientific report						0
<b>Workload by module</b>						450		450
<b>Total module workload</b>								450

## BIO.06927.02 - Fundamentals in Molecular and Cellular Biosciences

BIO.06927.02 15 CP

**Module label** Fundamentals in Molecular and Cellular Biosciences

**Module code** BIO.06927.02

**Semester of first implementation**

**Module used in courses of study / semesters**

- Molecular and Cellular Biosciences (MA120 LP) (Master) > Biologie MoCeBioMA120, Version of accreditation valid from SoSe 2026 > Pflichtmodule
- Molecular and Cellular Biosciences (MA120 LP) (Master) > Biologie MoCeBioMA120, Version of accreditation (WS 2020/21 - WiSe 2025/26) > Pflichtmodule

**Responsible person for this module**

**Further responsible persons** Professors of the study program

**Prerequisites**

**Skills to be acquired in this module**

- Fundamental knowledge in animal and human physiology
- Fundamental knowledge in biochemistry
- Fundamental knowledge in cell biology
- Fundamental knowledge in genetics
- Fundamental knowledge in microbiology
- Fundamental knowledge in plant physiology

**Module contents**

- Structure and organization of prokaryotic and eukaryotic cells
- Organization, expression and inheritance of genetic information
- Primary and secondary metabolism
- Evolution and development
- Biogenesis and structure of cellular components
- Molecular and cellular basis of physiological processes

**Forms of instruction** Lecture (10 SWS)  
Course  
Seminar (4 SWS)  
Course  
Seminar (1 SWS)

**Languages of instruction** German, English

**Duration (semesters)** 6 Wochen Semester

**Module frequency** jedes Semester

**Module capacity** unrestricted

**Time of examination**

**Credit points** 15 CP

**Share on module final degree** Course 1: %; Course 2: %; Course 3: %; Course 4: %; Course 5: %.

**Share of module grade on the course of study's final grade** 1

Examination	Exam prerequisites	Type of examination
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**Course 1**

**Course 2**

**Course 3**

**Course 4**

**Course 5**

<b>Final exam of module</b>	Oral presentation of literature data	Oral or written or electronic examination
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**Exam repetition information**

Module course label	Course type	Course title	SWS	Workload of compulsory attendance	Workload of preparation / homework etc	Workload of independent learning	Workload (examination and preparation)	Sum workload
<b>Course 1</b>	Lecture	Lectures		10				0
<b>Course 2</b>	Course	Data analysis						0
<b>Course 3</b>	Seminar	Research seminars		4				0
<b>Course 4</b>	Course	Literature search and analysis						0
<b>Course 5</b>	Seminar	Oral presentation and discussion		1				0
<b>Workload by module</b>						450		450
<b>Total module workload</b>								450

## BIO.07040.03 - Project study 'Molecular and Cellular Biosciences'

BIO.07040.03 15 CP

**Module label** Project study 'Molecular and Cellular Biosciences'

**Module code** BIO.07040.03

**Semester of first implementation**

**Module used in courses of study / semesters**

- Molecular and Cellular Biosciences (MA120 LP) (Master) > Biologie MoCeBioMA120, Version of accreditation valid from SoSe 2026 > Pflichtmodule
- Molecular and Cellular Biosciences (MA120 LP) (Master) > Biologie MoCeBioMA120, Version of accreditation (WS 2020/21 - WiSe 2025/26) > Pflichtmodule

**Responsible person for this module**

**Further responsible persons** Professors of the study program

**Prerequisites** Successful completion of the module 'Fundamentals in Molecular and Cellular Biosciences', of at least two project modules and the research internship /// \*  
**Students will have to submit the application form for the module in the examination office ('Prüfungsamt') prior to the start of the module \***

**Skills to be acquired in this module**

- Students will learn how to search and evaluate the scientific literature and how to interpret scientific data

**Module contents**

- The assigned project will be related to on-going research in the laboratory of choice in one of the departments assigned to the MSc Molecular and Cellular Biology program
- Students will participate in lab seminars and give a scientific presentation, detailing their research

**Forms of instruction** Seminar (6 SWS)  
 Seminar (2 SWS)  
 Course  
 Course  
 Course  
 Course

**Languages of instruction** German, English

**Duration (semesters)** 3 Monate Semester

**Module frequency** jedes Semester

**Module capacity** unrestricted

**Time of examination**

**Credit points** 15 CP

**Share on module final degree** Course 1: %; Course 2: %; Course 3: %; Course 4: %; Course 5: %; Course 6: %.

**Share of module grade on the course of study's final grade** 1

Examination Exam prerequisites Type of examination

**Course 1**

**Course 2**

**Course 3**

**Course 4**

**Course 5**

**Course 6**

**Final exam of module** Oral presentation

**Exam repetition information**

Module course label	Course type	Course title	SWS	Workload of compulsory attendance	Workload of preparation / homework etc	Workload of independent learning	Workload (examination and preparation)	Sum workload
<b>Course 1</b>	Seminar	Seminar: Analysis of scientific data		6				0
<b>Course 2</b>	Seminar	Lab seminar		2				0
<b>Course 3</b>	Course	Literature search						0
<b>Course 4</b>	Course	Private study: Data analysis (project-based)						0
<b>Course 5</b>	Course	Private study						0
<b>Course 6</b>	Course	Preparation of the oral presentation						0
<b>Workload by module</b>						450		450
<b>Total module workload</b>								450

