

Pflichtmodule

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

BIO.08775.01		30 CP
Module label	Research project module 'Molecular and Cellular Biosciences'	
Module code	BIO.08775.01	
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	
Responsible person for this module		
Further responsible persons	Professors of the study program	
Prerequisites	At least 75 credit points /// * 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 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. - Students will learn how to write a scientific thesis independently. - Students will learn how to document and communicate their own scientific data. - Students will learn how to present document their acquired results in a written scientific format.	
Module contents	- Use of project-specific literature and databases to support one's results - Learn to use the appropriate data analysis tools to analyze and evaluate critically data - Learn how to present document acquired results in a written scientific format - Learn how to present and discuss results in the form of a scientific talk	
Forms of instruction	Course Course Course Course	
Languages of instruction	German, English	
Duration (semesters)	1 Semester Semester	
Module frequency	jedes Semester	
Module capacity	unrestricted	
Time of examination		
Credit points	30 CP	
Share on module final degree	Course 1: %; Course 2: %; Course 3: %; Course 4: %.	
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		
Final exam of module	Written Master thesis, Oral presentation and public defense	
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
Course 1	Course	Experimental work and literature search						0
Course 2	Course	Analysis of the data and assessment of the literature						0
Course 3	Course	Writing of the thesis						0
Course 4	Course	Preparation of the talk and public defense of the thesis						0
Workload by module						900		900
Total module workload								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			
Course 3									
Course 4									
Course 5									
Final exam of module						Written scientific report			
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
Course 1	Practical training	Practical work and analysis of scientific data		14					0
Course 2	Course	Literature search literature search							0
Course 3	Course	Private study							0
Course 4	Seminar	Lab seminar		1					0
Course 5	Course	Writing of a scientific report							0
Workload by module							450		450
Total module workload									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
Course 1		
Course 2		
Course 3		
Course 4		
Course 5		
Final exam of module	Oral presentation of literature data	Oral or written or electronic examination
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
Course 1	Lecture	Lectures		10				0
Course 2	Course	Data analysis						0
Course 3	Seminar	Research seminars		4				0
Course 4	Course	Literature search and analysis						0
Course 5	Seminar	Oral presentation and discussion		1				0
Workload by module						450		450
Total module workload								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
Course 1	Seminar	Seminar: Analysis of scientific data		6				0
Course 2	Seminar	Lab seminar		2				0
Course 3	Course	Literature search						0
Course 4	Course	Private study: Data analysis (project-based)						0
Course 5	Course	Private study						0
Course 6	Course	Preparation of the oral presentation						0
Workload by module						450		450
Total module workload								450

