Julius-Maximilians-
UNIVERSITÄT
WÜRZBURG

Annex SFB

Studienfachbeschreibung (subject description, SFB) for the subject Biochemistry as a Bachelor's with 1 major

with the degree "Bachelor of Science" (180 ECTS credits)

Responsible: Faculty of Medicine — Examination regulations version: 2017
Responsible: Faculty of Chemistry and Pharmacy — Examination regulations version: 2017

Abbreviations used:

Course types: **E** = field trip, **K** = colloquium, **O** = conversatorium, **P** = placement/lab course, **R** = project, **S** = seminar, **T** = tutorial, **Ü** = exercise, **V** = lecture

Term: **SS** = summer semester, **WS** = winter semester

Methods of grading: **NUM** = numerical grade, **B/NB** = (not) successfully completed

Regulations: **(L)ASPO** = general academic and examination regulations (for teaching-degree programmes), **FSB** = subject-specific provisions, **SFB** = list of modules

Other: **A** = thesis, **LV** = course(s), **PL** = assessment(s), **TN** = participants, **VL** = prerequisite(s)

Conventions for the modules in this SFB:

Unless otherwise stated, courses and assessments will be held in German, assessments will be offered every semester and modules are not creditable for bonus.

Information on assessment procedures:

Should there be the option to choose between several methods of assessment, the lecturer will agree with the module coordinator on the method of assessment to be used in the current semester by two weeks after the start of the course at the latest and will communicate this in the customary manner.

Should a module comprise more than one graded assessment, all assessments will be equally weighted, unless otherwise stated below.

Should the assessment comprise several individual assessments, successful completion of the module will require successful completion of all individual assessments.

In accordance with the general regulations governing the degree subject described in this module catalogue:

ASPO2015

associated official publications (FSB (subject-specific provisions)/SFB (list of modules)):

20-Apr-2017 (2017-28) except for mandatory elective 10-M-MCB-152 replaced by 10-M-MCH-172 in Fast Track procedure at a later time

05-Jul-2017 (2017-42)

22-Dec-2021 (2021-87)

??-???-2024 (2024-??)

This module handbook seeks to render, as accurately as possible, the data that is of statutory relevance according to the examination regulations of the degree subject. However, only the FSB (subject-specific provisions) and SFB (list of modules) in their officially published versions shall be legally binding. In the case of doubt, the provisions on, in particular, module assessments specified in the FSB/SFB shall prevail.

Every module will be described using the following form:

Abbreviation	**Module title**							
	ECTS		Duration	(in semesters)	Method of grading		Module level	
	Courses	To be specified in the form X (y) with course type X abbreviated as specified above and number of weekly contact hours y						
	Method of assessment							
	Only after successful completion of	if applicable						
	Other prerequisites	if applicable						
	Participants and allocation of places	if applicable						
	Additional information	if applicable						
	Referred to in LPO I	if applicable (examination regulations for teaching-degree programmes)						

Compulsory Courses (115 ECTS credits)								
03-5S2ST-BC-152-m01	**Structural Biology**							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (6)					
	Method of assessment		written examination (approx. 60 minutes) Language of assessment: German and/or English					
07-1A1ZO-BC-152-m01	**General Biology for Biochemistry Students**							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (5)					
	Method of assessment		written examination (approx. 180 minutes)					
08-AC1-152-m01	**Principles of Inorganic Chemistry**							
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (4) + V (2)					
	Method of assessment		a) written examination (approx. 90 to 180 minutes) or b) oral examination of one candidate each (20 to 30 minutes) or c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or d) log (approx. 20 pages) or e) presentation (approx. 30 minutes) Language of assessment: German and/or English					
	Additional Information		according to § 2 para. 2 sentence 2 APOLmCh in conjunction with No. I 2nd letter a) of annex 1 to the APOLmCh and No. 1 of annex 2 to the APOLmCh					
	Referred to in LPO I		§ 42 I Nr. 1 and § 22 II Nr. 1 h) § 62 I Nr. 1					
08-ACP1-BC-152-m01	**Inorganic Chemistry 1 (lab) for Biochemistry students**							
	ECTS	6	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		P (6) + S (2)					
	Method of assessment		[a) assessment [a) written examination (approx. 90 to 180 minutes) or b) oral examination of one candidate each (20 to 30 minutes) or c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or d) log (approx. 20 pages) or e) presentation (approx. 30 minutes)] as well as Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical assignments (2 to 4 random examinations) Language of assessment: German and/or English Assessment offered: Once a year, winter semester					

08-OC1-152-m01	**Organic Chemistry 1**							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (3) + Ü (1)					
	Method of assessment		a) written examination (approx. 90 to 180 minutes) or b) oral examination of one candidate each (20 to 30 minutes) or c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or d) log (approx. 20 pages) or e) presentation (approx. 30 minutes) Language of assessment: German and/or English					
	Additional Information		according to § 2 para. 2 sentence 2 APOLmCh in conjunction with No. I 2nd letter b) of annex 1 to the APOLmCh and No. 2 of annex 2 to the APOLmCh					
	Referred to in LPO I		§ 62 I Nr. 2					
08-OC2-152-m01	**Organic Chemistry 2 and analytical methods in organic chemistry**							
	ECTS	9	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (3) + Ü (1) + V (2)					
	Method of assessment		a) written examination (approx. 90 to 180 minutes) or b) oral examination of one candidate each (20 to 30 minutes) or c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or d) log (approx. 20 pages) or e) presentation (approx. 30 minutes) Language of assessment: German and/or English					
08-OCP1-BC-152-m01	**Organic chemistry - laboratory course for Biochemistry students**							
	ECTS	7	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		P (12)					
	Method of assessment		Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations) Language of assessment: German and/or English					
	Modules successfully completed		08-OC1 and 08-ACP1-BC					
08-PC-MBS-152-m01	**Molecular structure and spectroscopy**							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (2)					
	Method of assessment		a) written examination (approx. 90 to 180 minutes) or b) oral examination of one candidate each (20 to 30 minutes) or c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or d) log (approx. 20 pages) or e) presentation (approx. 30 minutes) Language of assessment: German and/or English creditable for bonus					
	Referred to in LPO I		§ 62 I Nr. 1					

08-PC-TKE-152-m01	**Thermodynamics, Kinetics, Electrochemistry**							
	ECTS	9	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (4) + Ü (2)					
	Method of assessment		a) written examination (approx. 90 to 180 minutes) or b) oral examination of one candidate each (20 to 30 minutes) or c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or d) log (approx. 20 pages) or e) presentation (approx. 30 minutes) Language of assessment: German and/or English creditable for bonus					
	Referred to in LPO I		§ 62 I Nr. 1					
08-PCP-BC-152-m01	**Practical course of Physical Chemistry for Biochemistry Students**							
	ECTS	6	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		P (4)					
	Method of assessment		Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations) Language of assessment: German and/or English Assessment offered: Once a year, winter semester					
	Modules successfully completed		08-PC-MBS or 08-PC-TKE					
08-BAN-152-m01	**Bioanalytics**							
	ECTS	9	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (1) + Ü (1) + P (5)					
	Method of assessment		a) written examination (approx. 45 to 90 minutes) or b) log (10 to 20 pages) or c) oral examination of one candidate each (20 to 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 15 to 20 minutes per candidate) or e) presentation (20 to 30 minutes) or f) practical examination (on average approx. 2 hours; time to complete will vary according to subject area but will not exceed a maximum of 4 hours) Language of assessment: German and/or English					
08-BC1-152-m01	**Biochemistry 1**							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (1)					
	Method of assessment		written examination (approx. 60 to 90 minutes)					
	Additional Information		according to § 2 para. 2 sentence 2 APOLmCh in conjunction with No. II 2nd letter e) and No. II 1st letter c) of annex 1 to the APOLmCh and No. 3 of annex 3 to the APOLmCh					
	Referred to in LPO I		§ 42 I Nr. 2 § 62 I Nr. 2					

08-BC2-152-m01	**Biochemistry 2**							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (1)					
	Method of assessment		written examination (approx. 60 to 90 minutes)					
	Additional Information		Pursuant to Section 2 Subsection 2 Sentence 2 Verordnung über die Ausbildung und Prüfung der Staatlich geprüften Lebensmittelchemikerinnen und Lebensmittelchemiker (Regulation on the training and examination of state-certified food chemists, APOLmCh) in conjunction with No. II 2. Letter e) and No. II 1. Letter c) of Annex 1 of APOLmCh and No. 3 of Annex 3 of APOLmCh.					
08-BCP-152-m01	**Practical course of Biochemistry**							
	ECTS	5	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		P (6)					
	Method of assessment		Log (approx. 30 pages) Assessment offered: Once a year, summer semester					
	Modules successfully completed		08-BC1					
	Participants and allocation of places		Students of the Bachelor's degree programme Biochemie (Biochemistry, 180 ECTS credits): no restrictions with regard to available places. Students of the Bachelor's degree programme Chemie (Chemistry, 180 ECTS credits): no more than 6 places; places will be allocated according to the number of subject semesters, among applicants with the same number of subject semesters, places will be allocated by lot; a waiting list will be maintained and places re-allocated by lot as they become available.					
08-BC-MOL-152-m01	**Molecular Biology**							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (1) + V (1)					
	Method of assessment		a) written examination (approx. 45 to 90 minutes) or b) log (10 to 20 pages) or c) oral examination of one candidate each (20 to 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 15 to 20 minutes per candidate) or e) presentation (20 to 30 minutes) or f) practical examination (on average approx. 2 hours; time to complete will vary according to subject area but will not exceed a maximum of 4 hours) Language of assessment: German and/or English					
10-M-MCH-172-m01	**Mathematics for students in Chemistry and Biochemistry**							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (3) + Ü (2)					
	Method of assessment		written examination (approx. 90 to 120 minutes) and written exercises (approx. 25)					

11-EFNF-152-m01	**Introduction to Physics for Students of other Disciplines**							
	ECTS	7	Duration	2 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (4) + V (3)					
	Method of assessment		written examination (60 to 120 minutes)					
	Additional Information		according to § 2 para. 2 sentence 2 APOLmCh in conjunction with No. I 2nd letter d) and No. I 1st letter d) of annex 1 to the APOLmCh and No. 4 of annex 2 to the APOLmCh					
11-PFNF-152-m01	**Laboratory Course Physics for Students of other Disciplines**							
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		P (4)					
	Method of assessment		a) practical assignment with oral test (approx. 15 minutes, during experiments) and b) written examination (approx. 90 minutes). Each experiment comprises preparation, performance and evaluation. Test as well as performance of experiments can each be repeated once.					
	Participants and allocation of places		Only as part of pool of general transferable skills (ASQ): 10 places (lottery)					
	Additional Information		according to § 2 para. 2 sentence 2 APOLmCh in conjunction with No. I 2nd letter d) and No. I 1st letter d) of annex 1 to the APOLmCh and No. 4 of annex 2 to the APOLmCh					
Compulsory Electives (30 ECTS credits)								
03-4S1IMM-BC-152-m01	**Immunology for biochemistry students**							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (1) + Ü (1) + P (3)					
	Method of assessment		written examination (approx. 45 minutes) Assessment offered: Once a year, summer semester					
	Participants and allocation of places		Biochemie (Biochemistry), Bachelor's: 16 places. Selection process Biochemie (Biochemistry), Bachelor's (180 ECTS credits): Should the number of applications exceed the number of available places, places will be allocated according to the following quotas: Quota 1 (two thirds of places): current average grade of successfully completed modules; among applicants with the same average grade, places will be allocated by lot. Quota 2 (one third of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. A waiting list will be maintained and places re-allocated as they become available.					

03-4S1VIR-BC-152-mo1	**Virology for biochemistry students**							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (1) + S (1) + P (3)					
	Method of assessment		a) written examination (approx. 45 to 90 minutes) or b) log (10 to 20 pages) or c) oral examination of one candidate each (20 to 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 15 to 20 minutes per candidate) or e) presentation (20 to 30 minutes) or f) practical examination (on average approx. 2 hours; time to complete will vary according to subject area but will not exceed a maximum of 4 hours) Language of assessment: German and/or English Assessment offered: Once a year, summer semester					
	Participants and allocation of places		Biochemie (Biochemistry), Bachelor's: 18 places. Selection process Biochemie (Biochemistry), Bachelor's (180 ECTS credits): Should the number of applications exceed the number of available places, places will be allocated according to the following quotas: Quota 1 (two thirds of places): current average grade of successfully completed modules; among applicants with the same average grade, places will be allocated by lot. Quota 2 (one third of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. A waiting list will be maintained and places re-allocated as they become available.					
03-VIR2-BC-171-mo1	**Virology 2 for Biochemistry Students**							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + P (3)					
	Method of assessment		a) written examination (approx. 45 to 90 minutes) or b) log (10 to 20 pages) or c) oral examination of one candidate each (20 to 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 15 to 20 minutes per candidate) or e) presentation (20 to 30 minutes) or f) practical examination (on average approx. 2 hours; time to complete will vary according to subject area but will not exceed a maximum of 4 hours) Language of assessment: German and/or English Assessment offered: Once a year, winter semester					
	Participants and allocation of places		Biochemie (Biochemistry) Bachelor's: 255 places.					

08-BGV-171-m01	**Imaging methods in life-sciences**							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + S (1)					
	Method of assessment		a) written examination (approx. 45 to 90 minutes) or b) log (10 to 20 pages) or c) oral examination of one candidate each (20 to 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 15 to 20 minutes per candidate) or e) presentation (20 to 30 minutes) or f) practical examination (on average approx. 2 hours; time to complete will vary according to subject area but will not exceed a maximum of 4 hours) Language of assessment: German and/or English Assessment offered: Once a year, winter semester					
	Participants and allocation of places		Biochemie (Biochemistry) Bachelor's: 25 places.					
03-4S1HUG-BC-152-m01	**Human genetics for biochemistry students**							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (1) + Ü (1.5) + S (0.5)					
	Method of assessment		written examination (approx. 30 minutes)					
	Participants and allocation of places		Biochemie (Biochemistry), Bachelor's: 5 places. Selection process Biochemie (Biochemistry), Bachelor's (180 ECTS credits): Should the number of applications exceed the number of available places, places will be allocated according to the following quotas: Quota 1 (two thirds of places): current average grade of successfully completed modules; among applicants with the same average grade, places will be allocated by lot. Quota 2 (one third of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. A waiting list will be maintained and places re-allocated as they become available.					

<table>
<tr><td>03-PBC-152-m01</td><td colspan="8">Pathobiochemistry</td></tr>
<tr><td></td><td>ECTS</td><td>5</td><td>Duration</td><td>1 semester</td><td>Method of grading</td><td>numerical grade</td><td>Modul level</td><td>undergraduate</td></tr>
<tr><td></td><td colspan="2">Courses</td><td colspan="6">V (1) + Ü (1) + P (3)</td></tr>
<tr><td></td><td colspan="2">Method of assessment</td><td colspan="6">a) written examination (approx. 45 to 90 minutes) or
b) log (10 to 20 pages) or
c) oral examination of one candidate each (20 to 30 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 15 to 20 minutes per candidate) or
e) presentation (20 to 30 minutes) or
f) practical examination (on average approx. 2 hours; time to complete will vary according to subject area but will not exceed a maximum of 4 hours)
Language of assessment: German and/or English
Assessment offered: Once a year, summer semester</td></tr>
<tr><td></td><td colspan="2">Participants and allocation of places</td><td colspan="6">Biochemie (Biochemistry), Bachelor's: 6 places.
Selection process Biochemie (Biochemistry), Bachelor's (180 ECTS credits): Should the number of applications exceed the number of available places, places will be allocated according to the following quotas: Quota 1 (two thirds of places): current average grade of successfully completed modules; among applicants with the same average grade, places will be allocated by lot. Quota 2 (one third of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. A waiting list will be maintained and places re-allocated as they become available.</td></tr>
<tr><td>08-BC-MOLP-152-m01</td><td colspan="8">Molecular Biology laboratory course</td></tr>
<tr><td></td><td>ECTS</td><td>10</td><td>Duration</td><td>1 semester</td><td>Method of grading</td><td>numerical grade</td><td>Modul level</td><td>undergraduate</td></tr>
<tr><td></td><td colspan="2">Courses</td><td colspan="6">P (5)</td></tr>
<tr><td></td><td colspan="2">Method of assessment</td><td colspan="6">a) written examination (approx. 45 to 90 minutes) or
b) log (10 to 20 pages) or
c) oral examination of one candidate each (20 to 30 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 15 to 20 minutes per candidate) or
e) presentation (20 to 30 minutes) or
f) practical examination (on average approx. 2 hours; time to complete will vary according to subject area but will not exceed a maximum of 4 hours)
Language of assessment: German and/or English
Assessment offered: Once a year, winter semester</td></tr>
<tr><td></td><td colspan="2">Participants and allocation of places</td><td colspan="6">Biochemie (Biochemistry), Bachelor's: 24 places.
Selection process Biochemie (Biochemistry), Bachelor's (180 ECTS credits): Should the number of applications exceed the number of available places, places will be allocated according to the following quotas: Quota 1 (two thirds of places): current average grade of successfully completed modules; among applicants with the same average grade, places will be allocated by lot. Quota 2 (one third of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. A waiting list will be maintained and places re-allocated as they become available.
Chemie (Chemistry), Master's: 6 places. Selection process Chemie (Chemistry), Bachelor's (120 ECTS credits): Places will be allocated according to the number of subject semesters. Among applicants with the same number of subject semesters, places will be allocated by lot. A waiting list will be maintained and places re-allocated by lot as they become available.</td></tr>
</table>

03-ZBP-152-m01	**Cell biology**							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		P (4) + S (2)					
	Method of assessment		written examination (approx. 60 minutes) Language of assessment: German and/or English					
	Participants and allocation of places		Biochemie (Biochemistry), Bachelor's: 12 places. Selection process Biochemie (Biochemistry), Bachelor's (180 ECTS credits): Should the number of applications exceed the number of available places, places will be allocated according to the following quotas: Quota 1 (two thirds of places): current average grade of successfully completed modules; among applicants with the same average grade, places will be allocated by lot. Quota 2 (one third of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. A waiting list will be maintained and places re-allocated as they become available.					
07-5S2Mi-Z2-BC-152-m01	**Specific Microbiology 2 for Students in Biochemistry**							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (1) + S (1) + Ü (3)					
	Method of assessment		a) written examination (approx. 45 to 90 minutes) or b) log (10 to 20 pages) or c) oral examination of one candidate each (20 to 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 15 to 20 minutes per candidate) or e) presentation (20 to 30 minutes) or f) practical examination (on average approx. 2 hours; time to complete will vary according to subject area but will not exceed a maximum of 4 hours)					
	Participants and allocation of places		Biochemie (Biochemistry), Bachelor's: 6 places. Selection process Biochemie (Biochemistry), Bachelor's (180 ECTS credits): Should the number of applications exceed the number of available places, places will be allocated according to the following quotas: Quota 1 (two thirds of places): current average grade of successfully completed modules; among applicants with the same average grade, places will be allocated by lot. Quota 2 (one third of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. A waiting list will be maintained and places re-allocated as they become available.					
08-OC4-152-m01	**Organic Chemistry 4**							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (2)					
	Method of assessment		a) written examination (approx. 90 to 180 minutes) or b) oral examination of one candidate each (20 to 30 minutes) or c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or d) log (approx. 20 pages) or e) presentation (approx. 30 minutes) Language of assessment: German and/or English					
	Referred to in LPO I		§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 62 I Nr. 2					

08-OCP2-152-m01	**Organic Chemistry - advanced laboratory course for students of chemistry**							
	ECTS	5	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		P (11)					
	Method of assessment		Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations) Language of assessment: German and/or English					
	Modules successfully completed		08-OC2 and (08-OCP1 or OCP1-BC)					
07-4BFMZ4-BC-152-m01	**Bioinformatics for advanced Students in Biochemistry**							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (1) + Ü (4)					
	Method of assessment		Log (10 to 20 pages) Language of assessment: German and/or English					
	Participants and allocation of places		Biochemie (Biochemistry), Bachelor's: 4 places. Selection process Biochemie (Biochemistry), Bachelor's (180 ECTS credits): Should the number of applications exceed the number of available places, places will be allocated according to the following quotas: Quota 1 (two thirds of places): current average grade of successfully completed modules; among applicants with the same average grade, places will be allocated by lot. Quota 2 (one third of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. A waiting list will be maintained and places re-allocated as they become available.					
03-98-PGN-152-m01	**Introduction to Neurobiology**							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + S (3) Course type: S might be offered in Ü format					
	Method of assessment		written examination (90 minutes) and successful completion of seminar/exercise					

08-BC-AMP-152-m01	**Current Methods of Protein Chromatography**							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		P (5)					
	Method of assessment		a) written examination (approx. 45 to 90 minutes) or b) log (10 to 20 pages) or c) oral examination of one candidate each (20 to 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 15 to 20 minutes per candidate) or e) presentation (20 to 30 minutes) or f) practical examination (on average approx. 2 hours; time to complete will vary according to subject area but will not exceed a maximum of 4 hours) Language of assessment: German and/or English Assessment offered: Once a year, winter semester					
	Participants and allocation of places		Biochemie (Biochemistry), Bachelor's: 24 places. Selection process Biochemie (Biochemistry), Bachelor's (180 ECTS credits): Should the number of applications exceed the number of available places, places will be allocated according to the following quotas: Quota 1 (two thirds of places): current average grade of successfully completed modules; among applicants with the same average grade, places will be allocated by lot. Quota 2 (one third of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. A waiting list will be maintained and places re-allocated as they become available.					
08-AVP5-BC-152-m01	**Advanced lab (abridged)**							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		P (8)					
	Method of assessment		Log (approx. 20 pages) Language of assessment: German and/or English					
	Additional Information		Additional information on module duration: approx. 3 weeks.					
08-AVP10-BC-152-m01	**Advanced lab**							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		P (16)					
	Method of assessment		Log (approx. 30 pages) Language of assessment: German and/or English					
	Additional Information		Additional information on module duration: approx. 6 weeks.					

08-BC-SFBM-212-m01	**Structure and Function of Biological Membranes and Membrane Proteins**							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + S (1) + P (5)					
	Method of assessment		a) written examination (approx. 45 to 90 minutes) or b) term paper (8 to 12 pages) or c) oral examination of one candidate each (20 to 30 minutes) or d) presentation (20 to 30 minutes) Language of assessment: German and/or English Assessment offered: Once a year, winter term					
	Participants and allocation of places		Biochemie (Biochemistry), Bachelor's: 12 places. Selection process Biochemie (Biochemistry), Bachelor's (180 ECTS credits): Should the number of applications exceed the number of available places, places will be allocated according to the following quotas: Quota 1 (two thirds of places): current average grade of successfully completed modules; among applicants with the same average grade, places will be allocated by lot. Quota 2 (one third of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. A waiting list will be maintained and places re-allocated as they become available.					
Transferable Skills (20 ECTS credits)								
General Key Skills (5 ECTS credits) Students may select any of the modules offered as part of the pool of general transferable skills (ASQ) of JMU.								
Subject-specific Key Skills (15 ECTS credits)								
07-M-BST-152-m01	**Mathematical Biology and Biostatistics**							
	ECTS	4	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (2)					
	Method of assessment		written examination (approx. 60 minutes) creditable for bonus					
41-IK-BM-152-m01	**Information Literacy (Basic Level)**							
	ECTS	2	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		Ü (0.5)					
	Method of assessment		presentation (approx. 15 minutes) with written elaboration (approx. 2 pages)					
	Additional Information		Additional information on module duration: usually block taught during semester break.					
	Referred to in LPO I		§ 99 I Nr. 1 (2 ECTS credits)					

06-Ph-B-P2/1-152-m01	**Philosophical principles of sciences I**							
	ECTS	5	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		V (2)					
	Method of assessment		written examination (45 minutes)					
	Participants and allocation of places		Only as part of pool of general transferable skills (ASQ): max. 20 places. Should the number of applications exceed the number of available places, places will be allocated according to the number of subject semesters. Among applicants with the same number of subject semesters, places will be allocated by lot. A waiting list will be maintained and places re-allocated by lot as they become available.					
07-3A3BI-152-m01	**Bioinformatics**							
	ECTS	2	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (1) + S (1)					
	Method of assessment		written examination (approx. 20 minutes)					
03-TR-152-m01	**Toxicology and legal studies**							
	ECTS	3	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (1) + V (1)					
	Method of assessment		written examination (approx. 90 minutes)					
	Additional Information		according to § 2 para. 2 sentence 2 APOLmCh in conjunction with No. II 2nd letter g) and i) and No. II 1st letter d) of annex 1 to the APOLmCh and No. 5 and 6 of annex 3 to the APOLmCh					
	Referred to in LPO I		§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)					
03-FOR-BC-152-m01	**Contemporary research in biochemistry**							
	ECTS	2	Duration	2 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		V (2)					
	Method of assessment		Wrap-up report (approx. 1 page)					
03-Phys-152-m01	**Physiology**							
	ECTS	3	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (3)					
	Method of assessment		written examination (approx. 60 minutes)					
08-EP-152-m01	**Practical Course - external**							
	ECTS	10	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		P (0)					
	Method of assessment		Log (approx. 30 pages) Language of assessment: German and/or English					
	other prerequisites		Please consult with course advisory service in advance.					
	Additional Information		Additional information on module duration: approx. 6 weeks.					

08-EPK-152-m01	**Practical Course - external (abridged)**							
	ECTS	5	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		P (0)					
	Method of assessment		Log (approx. 20 pages) Language of assessment: German and/or English					
	other prerequisites		Please consult with course advisory service in advance.					
	Additional Information		Additional information on module duration: approx. 3 weeks.					
08-AP-152-m01	**Practical Course - abroad**							
	ECTS	10	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		P (0)					
	Method of assessment		Log (approx. 30 pages) Language of assessment: German and/or English					
	other prerequisites		Please consult with course advisory service in advance.					
	Additional Information		Additional information on module duration: approx. 6 weeks.					
08-APK-152-m01	**Practical Course - abroad (abridged)**							
	ECTS	5	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		P (0)					
	Method of assessment		Log (approx. 20 pages) Language of assessment: German and/or English					
	other prerequisites		Please consult with course advisory service in advance.					
	Additional Information		Additional information on module duration: approx. 3 weeks.					
08-LP-152-m01	**Practical Lab Course**							
	ECTS	10	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		P (16)					
	Method of assessment		Log (approx. 30 pages) Language of assessment: German and/or English					
	other prerequisites		Please consult with course advisory service in advance.					
	Additional Information		Additional information on module duration: approx. 6 weeks.					
08-LPK-152-m01	**Practical Lab Course (abridged)**							
	ECTS	5	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		P (8)					
	Method of assessment		Log (approx. 20 pages) Language of assessment: German and/or English					
	other prerequisites		Please consult with course advisory service in advance.					
	Additional Information		Additional information on module duration: approx. 3 weeks.					

08-WIRE1-152-m01	**Scientific lecturing 1**							
	ECTS	5	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		T (0)					
	Method of assessment		Wrap-up report (approx. 2 pages) Language of assessment: German and/or English					
08-WIRE2-152-m01	**Scientific lecturing 2**							
	ECTS	5	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		T (0)					
	Method of assessment		Wrap-up report (approx. 2 pages) Language of assessment: German and/or English					
08-AFBC1-152-m01	**Contemporary Research in Biochemistry 1**							
	ECTS	3	Duration	2 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + S (1)					
	Method of assessment		presentation (approx. 10 minutes) Language of assessment: German and/or English					
08-AFBC2-152-m01	**Contemporary Research in Biochemistry 2**							
	ECTS	3	Duration	2 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + S (1)					
	Method of assessment		presentation (approx. 10 minutes) Language of assessment: German and/or English					
08-AFBC3-152-m01	**Contemporary Research in Biochemistry 3**							
	ECTS	3	Duration	2 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + S (1)					
	Method of assessment		presentation (approx. 10 minutes) Language of assessment: German and/or English					
08-BPS1-152-m01	**Biochemical Practical Seminar 1**							
	ECTS	1	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		S (1)					
	Method of assessment		Wrap-up report (approx. 1 page) Language of assessment: German and/or English					
08-BPS2-152-m01	**Biochemical Practical Seminar 2**							
	ECTS	1	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		S (1)					
	Method of assessment		Wrap-up report (approx. 1 page) Language of assessment: German and/or English					

08-BPS3-152-m01	**Biochemical Practical Seminar 3**							
	ECTS	1	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		S (1)					
	Method of assessment		Wrap-up report (approx. 1 page) Language of assessment: German and/or English					
08-AWA-152-m01	**Guidance in scientific practice**							
	ECTS	5	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		T (0)					
	Method of assessment		Wrap-up report (approx. 1 page) Language of assessment: German and/or English					
08-AC-ELO-152-m01	**Elemental Organic Chemistry**							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (1)					
	Method of assessment		a) written examination (approx. 90 to 180 minutes) or b) oral examination of one candidate each (20 to 30 minutes) or c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or d) log (approx. 20 pages) or e) presentation (approx. 30 minutes) Language of assessment: German and/or English					
	Referred to in LPO I		§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)					
08-ACP2-152-m01	**Inorganic Chemistry 2 (lab)**							
	ECTS	5	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		P (12)					
	Method of assessment		Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations) Language of assessment: German and/or English					
	Modules successfully completed		(08-ACP1 or 08-ACP1-BC) and 08-AC1 and 08-AS1					
08-PC-SBL-152-m01	**Symmetry, chemical bonding and light**							
	ECTS	9	Duration	2 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (3) + Ü (2) + V (2) + Ü (2)					
	Method of assessment		a) written examination (approx. 90 to 180 minutes) or b) oral examination of one candidate each (20 to 30 minutes) or c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or d) log (approx. 20 pages) or e) presentation (approx. 30 minutes) Language of assessment: German and/or English					

08-AS1-152-m01	**Inorganic Chemistry of the Elements**							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + V (2)					
	Method of assessment		a) written examination (approx. 90 to 180 minutes) or b) oral examination of one candidate each (20 to 30 minutes) or c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or d) log (approx. 20 pages) or e) presentation (approx. 30 minutes) Language of assessment: German and/or English					
	Additional Information		according to § 2 para. 2 sentence 2 APOLmCh in conjunction with No. I 2nd letter a) of annex 1 to the APOLmCh and No. 1 of annex 2 to the APOLmCh					
	Referred to in LPO I		§ 62 I Nr. 1					
08-ANP-152-m01	**Analytical Chemistry (lab)**							
	ECTS	6	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		P (12) + S (1)					
	Method of assessment		Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations) Language of assessment: German and/or English Assessment offered: Once a year, summer semester					
	Additional Information		according to § 2 para. 2 sentence 2 APOLmCh in conjunction with No. I 1st letter a) of annex 1 to the APOLmCh and No. 1 of annex 2 to the APOLmCh					
08-OC4-152-m01	**Organic Chemistry 4**							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (2)					
	Method of assessment		a) written examination (approx. 90 to 180 minutes) or b) oral examination of one candidate each (20 to 30 minutes) or c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or d) log (approx. 20 pages) or e) presentation (approx. 30 minutes) Language of assessment: German and/or English					
	Referred to in LPO I		§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 62 I Nr. 2					

08-TC-152-m01	**Quantum Chemistry**							
	ECTS	3	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (1)					
	Method of assessment		a) written examination (approx. 90 to 180 minutes) or b) oral examination of one candidate each (20 to 30 minutes) or c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or d) log (approx. 20 pages) or e) presentation (approx. 30 minutes) Language of assessment: German and/or English creditable for bonus					
	Referred to in LPO I		§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)					
08-GC-242-m01	**Green and sustainable (organic) chemistry**							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (1) Module taught in: German or English					
	Method of assessment		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					
08-BC-E-212-m01	**Ethics of Molecular Life Sciences**							
	ECTS	2	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (1) + S (1)					
	Method of assessment		a) written examination (approx. 45 to 90 minutes) or b) term paper (8 to 12 pages) or c) oral examination of one candidate each (20 to 30 minutes) or d) presentation (20 to 30 minutes) Language of assessment: German and/or English					

08-BC-PHIL-212-m01	**Philosophical Aspects of the Sciences**							
	ECTS	3	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		S (2)					
	Method of assessment		a) written examination (approx. 45 to 90 minutes) or b) term paper (8 to 12 pages) or c) oral examination of one candidate each (20 to 30 minutes) or d) presentation (20 to 30 minutes) Language of assessment: German and/or English Assessment offered: Once a year, winter term					
	Participants and allocation of places		Biochemie (Biochemistry), Bachelor's: 30 places. Selection process Biochemie (Biochemistry), Bachelor's (180 ECTS credits): Should the number of applications exceed the number of available places, places will be allocated according to the following quotas: Quota 1 (two thirds of places): current average grade of successfully completed modules; among applicants with the same average grade, places will be allocated by lot. Quota 2 (one third of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. A waiting list will be maintained and places re-allocated as they become available.					
08-BC-ZQN3-152-m01	**Additional Qualification in Natural Sciences 3**							
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		Ü (0)					
	Method of assessment		a) written examination (approx. 45 to 90 minutes) or b) log (10 to 20 pages) or c) oral examination of one candidate each (20 to 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 15 to 20 minutes per candidate) or e) presentation (20 to 30 minutes) or f) practical examination (on average approx. 2 hours; time to complete will vary according to subject area but will not exceed a maximum of 4 hours) Language of assessment: German or English					
	other prerequisites		Please consult with course advisory service in advance.					
08-BC-ZQN5-152-m01	**Additional Qualification in Natural Sciences 5**							
	ECTS	5	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		Ü (0)					
	Method of assessment		a) written examination (approx. 45 to 90 minutes) or b) log (10 to 20 pages) or c) oral examination of one candidate each (20 to 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 15 to 20 minutes per candidate) or e) presentation (20 to 30 minutes) or f) practical examination (on average approx. 2 hours; time to complete will vary according to subject area but will not exceed a maximum of 4 hours) Language of assessment: German or English					
	other prerequisites		Please consult with course advisory service in advance.					

08-BC-EQN3-152-m01	**Completive Qualification in Natural Sciences 3**							
	ECTS	3	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		Ü (0)					
	Method of assessment		a) written examination (approx. 45 to 90 minutes) or b) log (10 to 20 pages) or c) oral examination of one candidate each (20 to 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 15 to 20 minutes per candidate) or e) presentation (20 to 30 minutes) or f) practical examination (on average approx. 2 hours; time to complete will vary according to subject area but will not exceed a maximum of 4 hours) Language of assessment: German or English					
	other prerequisites		Please consult with course advisory service in advance.					
08-BC-EQN5-152-m01	**Completive Qualification in Natural Sciences 5**							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		Ü (0)					
	Method of assessment		a) written examination (approx. 45 to 90 minutes) or b) log (10 to 20 pages) or c) oral examination of one candidate each (20 to 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 15 to 20 minutes per candidate) or e) presentation (20 to 30 minutes) or f) practical examination (on average approx. 2 hours; time to complete will vary according to subject area but will not exceed a maximum of 4 hours) Language of assessment: German or English					
	other prerequisites		Please consult with course advisory service in advance.					
Thesis Area (15 ECTS credits)								
08-BA-BC-152-m01	**Bachelor Thesis in Biochemistry**							
	ECTS	12	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		No courses assigned to module					
	Method of assessment		Bachelor's thesis (50 to 70 pages) Language of assessment: German or English					
	Additional Information		Time to complete: 10 weeks.					
08-KOLL-BC-152-m01	**Defense of the Bachelor Thesis in Biochemistry**							
	ECTS	3	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		K (0)					
	Method of assessment		final colloquium (approx. 30 minutes) Language of assessment: German or English					