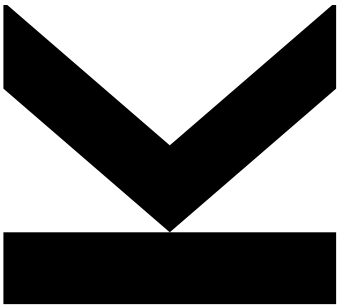
UK 066/863

CURRICULUM FOR THE MASTER'S PROGRAM IN **BIOLOGICAL CHEMISTRY.**



Joint Master's Program
in cooperation with
Faculty of Science
University of South Bohemia in Budweis
Czech Republic
(in English)

JOHANNES KEPLER
UNIVERSITY LINZ

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§ 1 Qualification Profile

(1) The cross-border joint Master's program „Biological Chemistry“ at the Faculty of Engineering and Natural Sciences (TNF) at the Johannes Kepler University Linz (JKU) and the Faculty of Science (PRF) of the University of South Bohemia (USB) in České Budějovice (joint study program) is an interdisciplinary combination of chemistry, biochemistry, biology and biophysics. The Master's program is held in English language and builds upon the joint Bachelor's curriculum „Biological Chemistry“ at these two universities. For graduates of the Bachelor's program „Chemistry and Chemical Technology“ (formerly: "Technische Chemie" and "Chemistry") at JKU and equivalent curricula a direct admission through a biological bridge subject and with lower ECTS points in the compulsory and elective subjects from chemistry is possible.

(2) In the Master's program „Biological Chemistry“ education and training in the following fields are offered:

- Extended Fundamentals in areas of bio-analytical chemistry, organic chemistry, physical chemistry, biochemistry, biology, molecular biology, genetics, biophysics, and structural biology with a scientific orientation
- Specialization corresponding to the state-of-the art of science by participation in research projects during the Master's thesis
- Experience with modern bio-analytical and preparative techniques and the appropriate safety standards
- Problem solving competences in chemical-biological context, professional inter-disciplinary points of view, and communication skills in an international research environment
- Soft skills, i.e. general skills and competences in the fileds of foreign languages, presentation, team work, law and gender questions

(3) Graduating from this Master's program provides a broad scientific base for demanding professional activities in research, development and management in the following areas and beyond:

- Life Sciences
- Molecular and structural biology
- White biotechnology (bio-processing and bio-production)
- Red biotechnology (biomedicine)
- Green biotechnology (phytochemistry and –biotechnology)
- Biological and environmental analysis
- Medical diagnostics and technologies

(4) Professional activities will therefore be possible in enterprises in the following fields:

- Biotechnology industry
- Chemical industry
- Pharmaceutical industry
- Food and food processing industry
- Private and public research institutions
- Regional, national and international monitoring organizations and agencies

(5) It is expected that graduates of this Master's program will contribute significantly to the development of sustainable and “green” processes in industry. The versatility of the education provides ideal prerequisites for rapid and flexible adaptation to new scientific and technological developments in the fields of life sciences and biotechnologies. The students obtain a differentiated training, as apart from the compulsory base modules in Biology and Chemistry, two chemical and two biological elective subjects have to be completed. Combining the strongly complimentary chemical and biological educational subjects shall open novel approaches to the challenges arising from sustainable production and “green technologies”. Through the bilateral implementation of the

curriculum and through using English as the course language competences are created in multidisciplinary, international, scientific communication during the courses and the scientific work.

§ 2 Admissions

(1) In accordance with § 54 para. 1 UG the Master's program "Biological Chemistry" belongs to the category of degrees in natural sciences and is taught in English.

(2) Admission to the Master's program "Biological Chemistry" requires a Bachelor degree in one of the following or equivalent study programs. Depending on the previously passed curriculum there are different variants in the compulsory and elective courses in this Master's program.

1. Students who graduated in the Bachelor's program "Biological Chemistry" (UK033/663) at JKU and USB will be assigned to variant B.
2. Students who successfully completed the Bachelor's program "Chemistry and Chemical Technology" (formerly: "Technische Chemie" and "Chemistry") (UK033/290) or the Diploma program "Technische Chemie" (K800) or the Diploma program "Wirtschaftsingenieurwesen Technische Chemie" (K840) at JKU or the Bachelor's program "Technische Chemie" at the Vienna University of Technology are admitted to the Master's program in variant T.
3. Students who graduated in the Bachelor's programs "Chemie" at the University of Vienna, the Graz University of Technology or the University of Graz, or the University of Innsbruck are admitted to the Master's program in variant C.
4. Students who graduated in the Bachelor's programs "Molekulare Biowissenschaften" (UK033/665) at JKU and University of Salzburg are admitted to the Master's program in variant M.

(3) Graduates of related programs at Universities, Universities of Applied Sciences and other recognised national or international post-secondary educational institutions can be admitted to the Master's program if their degree programs are equivalent in content and scope to the Bachelor's programs in "Biological Chemistry" or the alternatively listed study programs. Equivalent programs are those in which the following subjects have been successfully completed in the stated minimum scope, whereby at least 24 ECTS points must be in chemical laboratory practical courses (chemistry laboratory work comprised of the student's own experimental activities):

(a) for variant B:

- General and Inorganic Chemistry (14 ECTS points)
- Analytical Chemistry (16 ECTS points)
- Biochemistry, Molecular Biology, Biotechnology and Genetics (30 ECTS points)
- Biology (15 ECTS Points)
- Mathematics and Physics (14 ECTS points)
- Organic Chemistry (17 ECTS points)
- Physical Chemistry, Theoretical Chemistry, and Biophysics (17 ECTS points)

(b) for variant T:

- General and Inorganic Chemistry (22 ECTS points)
- Analytical Chemistry (20 ECTS points)
- Biochemistry, Molecular Biology, Biotechnology and Genetics (3 ECTS points)
- Mathematics and Physics (18 ECTS points)
- Organic Chemistry (25 ECTS points)
- Physical Chemistry, Theoretical Chemistry, and Biophysics (24 ECTS points)

(c) for variant C:

- General and Inorganic Chemistry (30 ECTS points)
- Analytical Chemistry (20 ECTS points)
- Biochemistry, Molecular Biology, Biotechnology and Genetics (16 ECTS points)
- Biology (3 ECTS Points)
- Mathematics and Physics (14 ECTS points)
- Organic Chemistry (25 ECTS points)
- Physical Chemistry, Theoretical Chemistry, and Biophysics (24 ECTS points)

(d) for variant M:

- General and Inorganic Chemistry (10 ECTS points)
- Analytical Chemistry (12 ECTS points)
- Biochemistry, Molecular Biology, Biotechnology and Genetics (18 ECTS points)
- Biology (34 ECTS Points)
- Mathematics and Physics (8 ECTS points)
- Organic Chemistry (15 ECTS points)
- Physical Chemistry, Theoretical Chemistry, and Biophysics (10 ECTS points)

(4) In the event of admission according to para. 3, it must be determined during the official admission process whether equivalent standard has been met in accordance to para. 3 figure a, b, c, or d and/or if the prerequisites for graduates of the Bachelor's program in "Biological Chemistry" or the alternatively listed chemical studies specified in para. 2 have to be applied.

(5) If the applicant's first degree basically fulfils the requirements, except for a few specific individual courses, the rectorate can allow applicants to pass these specific courses while already following the Master's program, however only to the maximum extent of 40 ECTS points.

(6) Graduates of a Diploma program with a longer duration than a Bachelor's program can obtain recognition for examinations of the Master's program (see § 78 UG) to the extent by which the Diploma program (excluding the diploma thesis) exceeds the Bachelor's program.

§ 3 Structure and Outline

(1) The Master's program in "Biological Chemistry" is offered as a cross-border joint study program between the Faculty of Engineering and Natural Sciences (TNF) at the Johannes Kepler University Linz (JKU) and the Faculty of Science (PRF) of the University of South Bohemia (USB) in České Budějovice. The Master's program covers five semesters and consists of 150 ECTS points. The Master's program is structured so that usually the first two semesters majoring in chemistry are passed at the JKU, the third and fourth semesters with a focus on biology are to be completed at the USB. A change of this sequence is not ruled out. The 5th Semester is dedicated to the master's thesis, which is optionally carried out on one of the two locations or (eg in cooperative projects) at both locations.

(2) The 150 ECTS points are assigned to the following subjects:

(a) For graduates of the Bachelor's program "Biological Chemistry" (variant B):

Subjects	ECTS
Mandatory Subjects	67
(chemical 17.5; biological 30; support 4.5; Pool 15)	
Elective Subjects	41

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Subjects	ECTS
(chemical 16; biological 25)	
Master's Thesis (incl. Master's Thesis Seminar)	26
Master's Examination	1
Free Electives	15
Total	150

(b) variant T specified in § 2 para. 3:

Subjects	ECTS
Mandatory Subjects	75
(chemical 11; fundamentals 23; biological 30; support 4.5; Pool 6.5)	
Elective Subjects	33
(chemical 8; biological 25)	
Master's Thesis (incl. Master's Thesis Seminar)	26
Master's Examination	1
Free Electives	15
Total	150

(c) variant C specified in § 2 para. 3:

Subjects	ECTS
Mandatory Subjects	75
(chemical 7.5; fundamentals 23; biological 30; support 4.5; Pool 10)	
Elective Subjects	33
(chemical 8; biological 25)	
Master's Thesis (incl. Master's Thesis Seminar)	26
Master's Examination	1
Free Electives	15
Total	150

(d) variant M specified in § 2 para. 3:

Subjects	ECTS
Mandatory Subjects	75
(chemical 29; biological 30; support 4.5; Pool 11.5)	
Elective Subjects	33
(chemical 8; biological 25)	
Master's Thesis (incl. Master's Thesis Seminar)	26
Master's Examination	1
Free Electives	15

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continuation

Subjects	ECTS
Total	150

(3) For free electives students have to pass examinations corresponding to the given amount of ECTS points to complete, which can be chosen from any recognized national or international post-secondary educational institution. The free electives shall provide additional skills beyond "Biological Chemistry" and can be taken anytime during the Master's study program.

(4) The recommended free electives courses are courses taught in the Master's programs "Bioinfomatics", "Biophysics", "Molecular Biology ", "Polymer Chemistry", "Chemistry and Chemical Technology", "Management in Chemical Technologies", and "Biology" at JKU or the University of South Bohemia.

(5) The four recommended courses of study are shown in the annex.

§ 4 Mandatory Subjects/Modules

(1) Students have to complete the following mandatory subjects: the labels (L) or (B) indicate the venue Linz or Budweis.

(a) For graduates of the Bachelor's program "Biological Chemistry" (variant B):

Subject Code	Name	ECTS
863CTBC19	Chemistry and Technology for Bachelors of Biological Chemistry (L)	17.5
863BIBC18	Biology and Biochemistry (B)	30.0
863SOCO19	Support Courses (L)	4.5
863PSEC19	Pool of specific elective courses (L)	15.0
	Total Mandatory Subjects:	67.0

(b) variant T specified in § 2 para. 3:

Subject Code	Name	ECTS
863CTTC19	Chemistry and Technology for Bachelors of technology oriented chemistry programs (L)	11.0
863FBNB19	Fundamentals of Biology for non Biological Chemists (B)	23.0
863BIBC18	Biology and Biochemistry (B)	30.0
863SOCO19	Support Courses (L)	4.5
863PSEC19	Pool of specific elective courses (L)	6.5
	Total Mandatory Subjects (incl. Bridge Subject)	75.0

(c) variant C specified in § 2 para. 3:

Subject Code	Name	ECTS
863CTCH19	Chemistry and Technology for Bachelors of Chemistry (L)	7.5
863FBNB19	Fundamentals of Biology for non Biological Chemists (B)	23.0

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continuation

Subject Code	Name	ECTS
863BIBC18	Biology and Biochemistry (B)	30.0
863SOCO19	Support Courses (L)	4.5
863PSEC19	Pool of specific elective courses (L)	10.0
	Total Mandatory Subjects (incl. Bridge Subject)	75.0

(d) variant M specified in § 2 para. 3:

Subject Code	Name	ECTS
863CTMB19	Chemistry and Technology for Bachelors of Molecular Biosciences (L)	29.0
863BIBC18	Biology and Biochemistry (B)	30.0
863SOCO19	Support Courses (L)	4.5
863PSEC19	Pool of specific elective courses (L)	11.5
	Total Mandatory Subjects	75.0

(2) The pool of specific elective courses (L) consists of the courses listed in the study handbook of JKU plus courses from the chemical specialisations not choosen in the elective subject. Courses that where part of a previously completed study programme are excluded.

§ 5 Elective Subjects/Modules

Students have to complete the following elective subjects: the labels (L) or (B) indicate the venue Linz or Budweis:

(1) Within the **Chemical Specialisation**, the following subjects with the specified ECTS points must be chosen from (L):

(a) Students in variant B specified in § 2 para. 3 have to choose two of the three chemical specialisations taught at JKU. (total of 16 ECTS points)

Subject Code	Name	ECTS
863ADCH19	Chemical Specialisation: Advanced Chemistry (L)	8
863APCB19	Chemical Specialisation: Advanced Physical Chemistry and Biophysics (L)	8
863STBC19	Chemical Specialisation: Structural Biochemistry (L)	8
	Total sum of ECTS points	16

(b) Students in variants T, C, and M specified in § 2 para. 3 have to choose one of the three chemical specialisations taught at JKU. (total of 8 ECTS points)

Subject Code	Name	ECTS
863ADCH19	Chemical Specialisation: Advanced Chemistry (L)	8
863APCB19	Chemical Specialisation: Advanced Physical Chemistry and Biophysics (L)	8

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Subject Code	Name	ECTS
863STBC19	Chemical Specialisation: Structural Biochemistry (L)	8
	Total sum of ECTS points	8

(2) Within the **Biological Electives**, the following subjects with the specified ECTS points must be chosen from (B):

Each student must choose a total of 25 ECTS points from two of the three biological electives, with at least 10 ECTS points from each of the chosen electives.

Subject Code	Name	ECTS
863ABIB18	Biological Elective: Advanced Biology and Biochemistry (B)	>=10
863MODB14	Biological Elective: Molecular and Developmental Biology (B)	>=10
863STBT14	Biological Elective: Structural Biology Techniques Module (B)	>=10
	Total sum of ECTS points within two of the three subjects above	25

§ 6 Courses

(1) The names and the types of all courses of the Mandatory subjects taught at the Johannes Kepler University (JKU), as well as their ECTS points, their duration in hours per week, their codes, their registration requirements, and their admission procedures (in case of limited availability of places) are described in the study handbook of JKU (studienhandbuch.jku.at).

(2) The possible types of courses as well as the examination regulations are described in §§ 13 and 14 of the JKU statute (Section "Studienrecht").

(3) For courses taught at the University of South Bohemia, the regulations of the University of South Bohemia apply.

§ 7 Replacement of Subjects and Courses

Mandatory and elective subjects according to §§ 4 and 5 as well as Courses according to § 6 para. 1 may be replaced to a total extent of 18 ECTS points by other study specific subjects and courses upon student’s request, provided that the purpose of academic professional preparatory training is not affected and the choice of the proposed subjects and courses seems reasonable with regard to the defined aims in the qualification profile, the academic context, as well as to the addition to the professional preparatory training. The application of replacing subjects and courses has to be filed by the Vice Rector of Academic Affairs.

§ 8 Master's Thesis

(1) Students of the Master's program in "Biological Chemistry" must complete a Master's thesis according to § 81 UG and § 36 of the JKU statute (Section "Studienrecht").

(2) The Master's thesis consists usually of experimental research, the results of which must be documented in the form of a written paper. The amount of work of the thesis is corresponding to an effort of 21 ECTS points.

(3) The Master's thesis serves as a proof that graduates are able to perform scientific work autonomously, systematically and correctly in content. The topic of the thesis must be taken from the Mandatory subjects listed in § 4 with the exception of the subject "Support Courses" or the Elective Subjects listed in § 5 para. 1 or para. 2 and must permit completion within a period of 6 months.

(4) The Curricular Committee for "Biological Chemistry" may specify guidelines for the formal structure of a Master's thesis.

(5) The Master's thesis is a scientific piece of work which must be written and presented in English, and for which the general ethical principles of science apply.

(6) In addition to the Master's thesis, students must pass the Master's thesis seminar (5 ECTS points). Within the master's thesis seminar the students are asked to put their results up for critical discussion.

(7) The thesis of the Master's Program in "Biological Chemistry" is usually supervised by a scientist with habilitation within the scientific field of the thesis. In interdisciplinary work, a second supervisor is possible. If the master's thesis carried out at both locations, then at each location a supervisor with appropriate habilitation subject is required. The assessment of the thesis is carried out jointly by both supervisors in this case.

(8) If the master's thesis is composed exclusively at the South Bohemian University, the University of South Bohemia regulations apply.

§ 9 Examination Regulations

(1) The regulations for subject examinations and course examinations performed at JKU are described in the study handbook of JKU (studienhandbuch.jku.at).

(2) The examination regulations of the University of South Bohemia apply for examinations at the University of South Bohemia.

(3) The Master's program in "Biological Chemistry" is concluded by a Master's examination.

(4) The Master's examination consists of two parts: The first part of the Master's Examination is the successful completion of the mandatory and elective subjects according to § 4 and § 5.

(5) The second part of the Master's examination is a comprehensive oral exam (1 ECTS point) conducted by an examination committee. Prior to being admitted to the Master's examination, students must complete the first part of the Master's examination, the Master's thesis, the Master's thesis seminar, and the Free Electives. Usually the second part of the Master's examination is to be completed at that university where the major part of the thesis was composed.

(6) The second part of the Master's examination starts with a presentation and defense of the Master's thesis, followed by an oral exam that covers the contents of the following subjects:

- Biology and Biochemistry (863BIBC18)
- Depending on the subjects successfully completed by the student one of the following subjects:

  - Chemistry and Technology for Bachelors of Biological Chemistry (863CTBC19)
  - Chemistry and Technology for Bachelors of technology oriented chemistry programs (863CTTC19)
  - Chemistry and Technology for Bachelors of Chemistry (863CTCH19)
  - Chemistry and Technology for Bachelors of Molecular Biosciences (863CTMB19)
  - Chemical Specialisation: Advanced Chemistry (863ADCH19)
  - Chemical Specialisation: Advanced Physical Chemistry and Biophysics (863APCB19)
  - Chemical Specialisation: Structural Biochemistry (863STBC19)
- As well as the contents of another field of study chosen by the student, standing in a close scientific or technical relation with the topic of the thesis.

(7) The examination committee consists of at least three members and is formed by the Vice Rector of Academic Affairs. The candidate may submit a proposal for the committee members, wherein at least one examiner should be from the partner university. Usually the advisor of the Master's thesis is a member of the examination committee. The head of the committee suggests the assessment of the presentation and the defense of the thesis. The other examiners suggest the assessments of the respective specific subject exams.

(8) If the master's examination takes place at the University of South Bohemia, the regulations of the University of South Bohemia apply.

(9) It is desirable that the Master's examination of the Master's program "Biological Chemistry" always involves examiners from both universities.

(10) The respective partner university must be notified of the composition of the examination committee.

(11) Following conversion is used to translate grades from the University of South Bohemia (USB):

Grades at USB	**Grades at JKU**
excellent 1	sehr gut 1
excellent minus 1–	sehr gut 1
very good 2	gut 2
very good minus 2–	befriedigend 3
good 3	genügend 4
unsatisfactory 4	nicht genügend 5
successful participation	mit Erfolg teilgenommen
unsuccessful participation	ohne Erfolg teilgenommen

(12) Following conversion is used to translate grades from the Johannes Kepler University Linz (JKU):

Grades at JKU	**Grades at USB**
sehr gut 1	excellent 1
gut 2	very good 2
befriedigend 3	very good minus 2–
genügend 4	good 3

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Grades at JKU	Grades at USB
nicht genügend 5	unsatisfactory 4
mit Erfolg teilgenommen	successful participation
ohne Erfolg teilgenommen	unsuccessful participation

(13) For the purpose of assigning grades in the certificate, above conversion of grades of the University of South Bohemia (para. 11) will be used for subjects completed at the University of South Bohemia (USB).

§ 10 Academic Degree

(1) Graduates of the Master's program in "Biological Chemistry" are awarded the academic degree „Master of Science“, abbreviated „MSc“ or "MSc (JKU)" at the Johannes Kepler University Linz and the academic degree "Magistr" (Mgr.) at the University of South Bohemia.

(2) The certificate of the Austrian academic degree is issued in German and in English translation.

(3) The certificate has to express that the Master's program in “Biological Chemistry” is a joint study program of the Johannes Kepler University and the University of South Bohemia taught in English.

§ 11 Legal Validity

(1) This curriculum comes into effect on October 1, 2019.

(2) The curriculum of the Master's program in “Biological Chemistry” in the version published in the official newsletter of Johannes Kepler University Linz on June 18, 2014, 24th piece, item 176, as last amended by the official newsletter of Johannes Kepler University Linz on June 22, 2018, 26th piece, item 270, expires by the end of September 30, 2019 with the exception of the transitional arrangements.

(3) § 2 para. 2 and annexes 1a, 1b, 1c and 1d as published in the official newsletter of the Johannes Kepler University Linz on May 19th, 2020, 23rd piece, item 251 will take effect on October 1st, 2020.

§ 12 Transitional Provisions

(1) For students who have passed examinations within the curriculum of the Master's program in “Biological Chemistry” in a previous version, the equivalences listed in the study handbook of JKU (studienhandbuch.jku.at) apply.

(2) In addition to the equivalences given in the study handbook of JKU, following equivalences are effective:

Package of subjects / subjects in the Master's program Biological Chemistry 2018	**equivalent package of subjects / subjects in the Master's program Biological Chemistry 2019**
863SOSK10: Support Courses (5.6 ECTS) + 863CHWF14: Chemical Electives (26.1 ECTS) + 863FRST14: Free Electives (16.5 ECTS)	863SOCO19: Support Courses (4.5 ECTS) + 863PSEC19: Pool of specific elective courses (15 ECTS) + 863CHSP19: Chemical Specialisation (16 ECTS) + 863FRST19: Free Electives (15 ECTS)
863FCTB10: Fundamentals of Chemistry and Technology for Biological Chemists (17.8 ECTS)	863CTBC19: Chemistry and Technology for Bachelors of Biological Chemists (17.5 ECTS)
863FBTC14: Bridge subject: Fundamentals of Biology for Technical Chemists (16 ECTS) + 863FCTC10: Fundamentals of Chemistry and Technology for Technical Chemists (9.2 ECTS) + 863SOSK10: Support Courses (5.6 ECTS) + 863CHWF14: Chemical Electives (18.2 ECTS) + 863FRST14: Free Electives (17 ECTS)	863FBNB19: Fundamentals of Biology for non Biological Chemists (23 ECTS) + 863CTTC19: Chemistry and Technology for Bachelors of technology oriented chemistry programs (11 ECTS) + 863SOCO19: Support Courses (4.5 ECTS) + 863PSEC19: Pool of specific elective courses (6.5 ECTS) + 863CHSP19: Chemical Specialisation (8 ECTS) + 863FRST19: Free Electives (15 ECTS)

Course in the Master's program Biological Chemistry 2018	**equivalent course in the Master's program Biological Chemistry 2019**
TCBPEVOINBT: VL Industrial Biotechnology (2.6 ECTS)	491CTOMABTV19: VL Advanced Biotechnology (1.5 ECTS)

Annex 1a: Global map of study subjects - Joint Master's Program "Biological Chemistry" for graduates of the Bachelor's program "Biological Chemistry" (variant B) (2020)

1st Semester (WS)		2nd Semester (SS)		3rd Semester (WS)		4th Semester (SS)		5th Semester (WS)	
JKU Linz		**JKU Linz**		**USB Budweis**		**USB Budweis**		**JKU Linz/USB Budweis**	
Subject/Course	**ECTS**	**Subject/Course**	**ECTS**	**Subject**	**ECTS**	**Subject**	**ECTS**	**Subject/Course**	**ECTS**
Chemistry and Technology for Bachelors of Biological Chemists Biocatalysis Biochemical Laboratory Techniques Mass Spectrometry Interpretation of MS and IR Spectra Advanced Organic Chemistry 1 Advanced Biotechnology	10,5	**Chemistry and Technology for Bachelors Biological Chemists** Preparative Chemistry Laboratory for Biological Chemists Advanced Instrumental Analysis	7	**Biology and Biochemistry**	15	**Biology and Biochemistry**	15	**Master's Thesis Biological Chemistry**	21
Support Courses	1,5	**Support Courses**	3						
Chemical Specialisation (2 Specialisations)	8	**Chemical Specialisation** (2 Specialisations)	8	**Biological Electives** (from 2 subjects)	12	**Biological Electives** (from 2 subjects)	13		
Pool of specific elective courses	8	**Pool of specific elective courses**	7					**Master's Thesis Seminar / Master's Examination**	6
Free Electives	2	Free Electives	5	Free Electives	3	Free Electives	2	Free Electives	3
	30		**30**		**30**		**30**		**30**

Total 150

Annex 1b: Global map of study subjects - Joint Master's Program "Biological Chemistry"
for variant T specified in § 2 para. 3 (2020)

1st Semester (WS)		2nd Semester (SS)		3rd Semester (WS)		4th Semester (SS)		5th Semester (WS)	
JKU Linz		**USB Budweis**		**USB Budweis**		**JKU Linz/USB Budweis**		**JKU Linz/USB Budweis**	
Subject/Course	**ECTS**	**Subject/Course**	**ECTS**	**Subject**	**ECTS**	**Subject/Course**	**ECTS**	**Subject/Course**	**ECTS**
Chemistry and Technology for Bachelors of technology oriented chemistry programs Biocatalysis Mass Spectrometry Interpretation of MS and IR Spectra Advanced Organic Chemistry 1 Advanced Biotechnology	9	**Bridge subject: Fundamentals of Biology**	23	**Biology and Biochemistry**	15	**Chemistry and Technology for Bachelor's of technology oriented chemistry programs** Advanced Instrumental Analysis	2		
Chemical Specialisation (1 Specialisation)	8					**Support Courses**	3	**Master's Thesis Biological Chemistry**	21
Support Courses	1,5					**Biology and Biochemistry** (USB)	8		
Pool of specific elective courses	6,5	**Biology and Biochemistry**	7	**Biological Electives** (from 2 subjects)	12	**Biological Electives** (USB) (from 2 subjects)	13		
Free Electives	5							**Master's Thesis Seminar / Master's Examination**	6
				Free Electives	3	Free Electives	4	Free Electives	3
	30		**30**		**30**		**30**		**30**

Total 150

Annex 1c: Global map of study subjects - Joint Master's Program "Biological Chemistry"
for variant C specified in § 2 para. 3 (2020)

<table>
<tr><th>1st Semester (WS)</th><th></th><th>2nd Semester (SS)</th><th></th><th>3rd Semester (WS)</th><th></th><th>4th Semester (SS)</th><th></th><th>5th Semester (WS)</th><th></th></tr>
<tr><th>JKU Linz</th><th></th><th>USB Budweis</th><th></th><th>USB Budweis</th><th></th><th>JKU Linz/USB Budweis</th><th></th><th>JKU Linz/USB Budweis</th><th></th></tr>
<tr><th>Subject/Course</th><th>ECTS</th><th>Subject/Course</th><th>ECTS</th><th>Subject</th><th>ECTS</th><th>Subject/Course</th><th>ECTS</th><th>Subject/Course</th><th>ECTS</th></tr>
<tr><td>Chemistry and Technology for Bachelors of Chemistry
Biocatalysis
Biochemical Laboratory Techniques
Advanced Organic Chemistry 1
Advanced Biotechnology</td><td>7,5</td><td rowspan="2">Bridge subject: Fundamentals of Biology</td><td rowspan="2">23</td><td rowspan="3">Biology and Biochemistry</td><td rowspan="3">15</td><td>Support Courses</td><td>4,5</td><td rowspan="4">Master's Thesis Biological Chemistry</td><td rowspan="4">21</td></tr>
<tr><td>Chemical Specialisation
(1 Specialisation)</td><td>8</td><td>Biology and Biochemistry
(USB)</td><td>8</td></tr>
<tr><td rowspan="2">Pool of specific elective courses</td><td rowspan="2">10</td><td rowspan="3">Biology and Biochemistry</td><td rowspan="3">7</td><td rowspan="2">Biological Electives
(from 2 subjects)</td><td rowspan="2">12</td><td rowspan="2">Biological Electives (USB)
(from 2 subjects)</td><td rowspan="2">13</td></tr>
<tr><td rowspan="2">Free Electives</td><td rowspan="2">4,5</td><td>Master's Thesis Seminar / Master's Examination</td><td>6</td></tr>
<tr><td>Free Electives</td><td>3</td><td>Free Electives</td><td>4,5</td><td>Free Electives</td><td>3</td></tr>
<tr><td></td><td>30</td><td></td><td>30</td><td></td><td>30</td><td></td><td>30</td><td></td><td>30</td></tr>
</table>

Total 150

Annex 1d: Global map of study subjects - Joint Master's Program "Biological Chemistry"
for variant M specified in § 2 para. 3 (2020)

1st Semester (WS)		2nd Semester (SS)		3rd Semester (WS)		4th Semester (SS)		5th Semester (WS)	
JKU Linz		**JKU Linz**		**USB Budweis**		**USB Budweis**		**JKU Linz/USB Budweis**	
Subject/Course	**ECTS**	**Subject/Course**	**ECTS**	**Subject**	**ECTS**	**Subject**	**ECTS**	**Subject/Course**	**ECTS**
Chemistry and Technology for Bachelors of Molecular Biosciences Biocatalysis Biochemical Laboratory Techniques Mass Spectrometry Interpretation of MS and IR Spectra Advanced Organic Chemistry 1 NMR Spectroscopy In-depth fundamentals of Preparative Organic Chemistry for Biological Chemistry Organic chemistry laboratory bridge course Advanced Biotechnology	17,5	**Chemistry and Technology for Bachelors of Molecular Biosciences** Organic Chemistry 1 for Biological Chemistry * Preparative Chemistry Laboratory for Biological Chemists Advanced Instrumental Analysis	11,5	**Biology and Biochemistry**	15	**Biology and Biochemistry**	15	**Master's Thesis Biological Chemistry**	21
Support Courses	1,5	**Support Courses**	3						
Chemical Specialisation (1 Specialisation)	4	**Chemical Specialisation** (1 Specialisation)	4	**Biological Electives** (from 2 subjects)	12	**Biological Electives** (from 2 subjects)	13		
Pool of specific elective courses	4	**Pool of specific elective courses**	7,5					**Master's Thesis Seminar / Master's Examination**	6
Free Electives	3	Free Electives	3	Free Electives	3	Free Electives	3	Free Electives	3
	30		**29**		**30**		**31**		**30**

* We recommend to take this course already during the bachelor program.

Total 150