



Curriculum

for the Bachelor Study

BIOLOGICAL CHEMISTRY

at the *Johannes Kepler University, Linz, Austria*

and the

Faculty of Science (Přírodovědecká fakulta) at the University of South Bohemia (Jihočeská univerzita) in Budweis (České Budějovice), Czech Republic (Česka republika)

as a cross-border, interuniversity study

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§1 Qualification Profile

The goal of the Bachelor study program of Biological Chemistry at the Faculty for Technology and Natural Science (*Technisch-Naturwissenschaftlichen Fakultät, TNF*) of the Johannes Kepler Universität Linz and the Faculty of Science at the University of South Bohemia in Budweis (PRF), is to provide a scientific and application-oriented vocational education of biologically oriented chemists. An emphasis is placed on all these areas of chemistry that are relevant for understanding the function and analysis of biological systems in general, and on the areas of Biology in which chemical events are of significance. In order to reach the educational goal, it is necessary to substantially deepen the training in biochemistry and biology in comparison to the major of Technical Chemistry. The study places an emphasis on the following areas of chemistry: general chemistry, biochemistry, inorganic, analytical, organic and physical chemistry. In the field of biology, a focus is placed on molecular-, bio- and analytical topics is placed after an initial basic biological training. The language of instruction in English, and for this reason an in-depth education in English is compulsory. Students possessing sufficient English competence can alternatively participate in a language education program that is not their mother tongue (eg. Czech for German natives who possess good English abilities, or German for Czech natives with good English abilities).

The instruction is complemented by the professional competences of both the Faculty for Technology and Natural Science of the University Linz (Chemistry, Biophysics, Mathematics, and Computer Science) and the Faculty of Science at the University of South Bohemia (focus on biological subjects including Biochemistry).

The whole study implements, as far as possible, the principles of “learning by research” and research-driven instruction. These measures should ensure that the graduates of the major Biological Chemistry possess (in addition to the carefully selected factual knowledge) primarily problem-solving competence, which is a prerequisite to solve complex interdisciplinary problems and allowed them to keep pace with the rapid development taking place in the field of biological chemistry.

The study not only prepares the students for the numerous application-oriented occupational areas in which today and increasingly in the future biological chemists will be employed in, but also prepares the students for basic research in biology and chemistry, making them qualified to work in public and private research institutes, especially of an international context. Some examples are biomedical research, pharmaceutical research, biological and environmental analytics, medical-diagnostic laboratories, including biotechnology, but also public administration and international research organizations.

The successful completion of Biological Chemistry with a Bachelor of Science (BSc in Austria) or a Bachelor (Bc in the Czech Republic) enables the graduates to assume qualified occupational tasks as laboratory managers, project- and research assistants. Due to the international character of the study and the English language of instruction, the graduates are especially qualified to work in a multi-national environment (such as institutions of the European Union or international companies).

In addition to subject specific competencies, the study places an emphasis on the development of social competence and the ability to cooperate with co-workers and superiors in an international and multilingual setting. The study aims to develop, promote and encourage cross-border communication and interdisciplinary professional development of the students by encouraging teamwork in the practical laboratory training. The study should therefore contribute to the development of personality and social competence, which are prerequisites for cooperation in multinational and interdisciplinary teams.

§2 Admission Requirements

- (1) The general admission requirements of university studies apply.
- (2) Sufficient English competence (corresponding to level B2 of the Common European Framework of Reference for Languages, CEFR) is recommended.

§3 Duration, Scope and Organization of the Study

- (1) The normal study duration (*Regelstudium*) is six semesters. In correspondence with the internationally recommended three-stage academic education program (Bachelor – Master – PhD), the study of Biological Chemistry represents the introductory stage, the Bachelor study, giving the students vocational training.
- (2) The study comprises a total of 132 semester credit hours (*Semesterstunden, SSt.*), this corresponds to 180 ECTS points. The European Credit Transfer System (*Europäische System zur Anrechnung von Studienleistungen*) allocates the national semester credit hours to ECTS credit points, taking the actual work load of the individual courses into consideration. The ECTS points specify the relative part of the individual workload whereby the work load of one semester correspond to 30 ECTS points. The credit points therefore reflect the quantitative workload in relation to the required total volume of work that is required for the successful completion of the study. The ECTS points take a range of different tasks into consideration. Besides the work load represented by the actual course hours spent at university, the points consider the work required at home, the writing of scientific reports, as well as examinations and other forms of assessment.
- (3) Mandatory subjects (*Pflichtfächer*) have to be taken in a total of 125 Semester credit hours, this corresponds to 172.3 ECTS points. Elective courses (*freie Lehrveranstaltungen*) have to be taken in the amount of 7 semester credit hours. Bachelor theses are allocated 8 ECTS points.
- (4) 19.4 ECTS points (15 semester credit hours, SSt.) are allocated to the initial study phase (*Studieneingangsphase*), which has to be completed within the first two semesters. The corresponding courses are indicated with an (E) after the course type in the course overview table.
- (5) This curriculum is offered as a cross-border study (Linz, Austria - České Budějovice, Czech Republic) by the Johannes Kepler University, Linz, Austria and the Faculty of Science (PRF) of the University of South Bohemia. Refer to the appendix to obtain information on the distribution of the courses between the two

universities (the abbreviation JKU is used for the Johannes Kepler University and SBU for University of South Bohemia, Jihočeská univerzita, in Budweis. Please note that other publications use the abbreviations SBU, JCU and JU for this university). The courses that are offered by the University of Linz are primarily intended for the the 1st, 2nd and 5th semester of the Bachelor study. Due to organizational reasons the courses of the two universities can also deviate from the recommended semester plan.

- (6) The bachelor study encompasses the courses that are indicated in §6.
- (7) The allocation of the semester credit hours (ECTS points) to the individual courses and course types is indicated in §§6 and 7.
- (8) The two bachelor theses can be written, starting semester 4, either at the JKU or the SBU, in the context of a course in subject-specific projects, whereby one thesis should be written at the JKU the other one at USB.
- (9) All courses are taught using the English language. Where appropriate, translations into other languages can be offered to the students.

§4 Courses

(1) Lectures (VO)

Lectures give an overview of the subject area or a part of the subject. The communication of information occurs primarily through a lecture of the course leader. The students have the possibility to ask questions to the lecturer. At the end of the course, there is an oral or written final examination. Students also have to possibility to complete or complement the course with the use of electronic learning aids (e-learning, "Open Distance Learning", electronic data transfer ("streaming") between the campuses). In these cases the students and lecturers should be given an opportunity for regular personal meetings.

(2) Exercises (UE)

Exercise courses are assessed throughout the duration of course, they possess "intrinsic" (*prüfungsimmanent*) assessment. During exercise courses students are confronted with problems that they are to solve. Attendance is generally mandatory and the assessment is based on class participation throughout the whole course and on the assessment guidelines announced by the teacher at the beginning of the course.

(3) Lectures with Exercises (combined courses, KV)

Lectures with exercise lessons represent a combination of these two course types. Their assessment is intrinsic (*prüfungsimmanent*) and their objective is both information transfer as well as application of the knowledge and the learning of problem solving skills. The lecture and exercise parts are linked to each other and they can not be attended separately. Attendance is mandatory throughout the duration of the whole course. The assessment is like the one for practice courses.

(4) Laboratory Courses (PR)

Laboratory courses are courses with intrinsic assessment and with a strong focus on learning practical laboratory skills. The students are required to solve practical problems. Attendance is generally mandatory. The assessment is based on participation throughout the whole course and on the assessment guidelines announced by the teacher at the beginning of the course. The students have to write a lab report, a protocol, which is also considered for the assessment of the course. The teacher may additionally demand a final examination. The student must pass this exam to obtain an overall passing grade.

(5) Seminars (SE)

Seminars are courses with intrinsic assessment. The student has to perform independent work on scientific problems and present his or her findings in a written and oral form. Attendance is generally mandatory and the assessment is based on participation throughout the whole course and on the assessment guidelines announced by the teacher at the beginning of the course. During seminars the students obtain the possibility to practically learn and apply their factual knowledge and skills, such as literature search, writing of summarizing and comparing reports, including reviews and overviews and presentation techniques.

§ 5 General and Special Regulations concerning Approval, Admission and Course Design

(1) General Regulations

- (1) The approval of courses from other universities is conducted by the legal office of the university institution that is offering the equivalent courses (i.e. Studies and Examination Department for JKU), independent of the language of instruction in which the courses were taught.
- (2) All courses are offered in the English language. The written or oral contributions have to be in English for all courses that have an intrinsic assessment.
- (3) Alternatively and with the agreement between the examiner and the student, the exams during the first year of study can take place in the mother tongue of the student.
- (4) During the first year of study the students are trained in the understanding of verbal and written subject-specific English texts, in the last year of the study an emphasis is placed on presentations and on written documentations in English. The English language must be used for writing seminar reports, as well as for the presentation and writing of the Bachelor's theses.
- (5) We attempt to consider, if possible, requests concerning time arrangements of the courses for students who are employed, who have to take care of their children, or with other care-taking responsibilities. Relevant evaluation results should be considered for the following study year, taking feasibility and university statutes into consideration.

- (6) Students with physical disabilities should not be disadvantaged in their studies. They may apply for examination procedures that take their special needs into consideration. This application must be approved (§ 59, Abs. 1, Z. 12 UG 2002), provided that the examination meets the academic and content requirements of the examined subject.
- (7) As a rule, the students have to register for courses and exams using the appropriate registration procedure of the corresponding university.
- (8) The following maximum group sizes apply for courses with intrinsic evaluation (refer to §4 of this curriculum): KV (combined courses), UE (practice courses) during the first three semesters: 20. Exceptions are UE Mathematics: 30, UE Informatics: 35, UE Chemistry: 15, and PR Chemistry and Biology: 10. Group sizes for UE and PR from the 4th semester onwards are 10 and for SE (seminars): 20.
- (9) In the case of an urgent need for more places and in the case of resource constraints, it may be necessary to increase the group sizes. This measure can only be taken after agreement with the course leaders of the corresponding course. It must be taken into consideration that the increase in group size does not result in an unacceptable reduction in learning success of the students. The group size may not be increased if security and/or liability issues are a concern.
- (10) In order to determine the sequence of registrations (*Reihenfolge der Anmeldungen*) for courses with a limited number of participants, the registration procedure of the equivalent course of the curriculum with the highest expected number of participants is to be used.

(2) Special Regulations for Admission to Courses in the Bachelor's Study Biological Chemistry

- (1) The admission to courses with intrinsic assessment (laboratory courses) is dependent on the previous successful completion of introductory courses, as indicated in the following table:

<i>A positive mark on/ positive Beurteilung von</i>	<i>ist Voraussetzung für/ is prerequisite for</i>
Einstiegsklausur/ Entrance exam	Praktikum aus Allgemeiner Chemie/ Laboratory in General Chemistry (PR)
Praktikum aus Allgemeiner Chemie/ Laboratory in General Chemistry (PR) + Einführung in das Analytische Praktikum/ Introduction to the Analytical Laboratory (VO)	Praktikum aus Analytischer Chemie 1/ Laboratory in Analytical Chemistry 1 (PR)
Praktikum aus Analytischer Chemie 1/ Laboratory in Analytical Chemistry 1 (PR)	Instrumentelle Analyse Praktikum/ Laboratory of Instrumental Analysis (PR)
Organische Chemie 1 Organic Chemistry 1 (VO)	Praktikum aus Organischer Chemie 1/ Laboratory in Organic Chemistry 1 (PR)
Praktikum aus Allgemeiner Chemie und entweder Physikalische Chemie 1 oder einer Einstiegsklausur/ Laboratory in General Chemistry (PR) and either Physical Chemistry 1 (VO) or an entrance exam	Praktikum aus Physikalischer Chemie 1/ Laboratory in Physical Chemistry 1 (PR)
Biochemie 1/ Biochemistry 1 (VO) and Praktikum aus Allgemeiner Chemie/ Laboratory in General Chemistry (PR)	Biochemisches Praktikum/ Biochemistry Laboratory (PR)
Biostatistik/ Biostatistics (VO)	Biostatistik/ Biostatistics (PR)
Biologie der Mikroorganismen/ Biology of Microorganisms (VO)	Praktikum zur Biologie der Mikroorganismen/ Biology of Microorganisms Laboratory (PR)
Umweltchemie/ Environmental Chemistry (VO)	Umweltchemisches Praktikum/ Environmental Chemistry Laboratory (PR)
Molecular Biology & Genetics 1 (VO)	Praktikum zu Methoden der Molekularbiologie/ Methods in Molecular Biology Laboratory (PR)
Klinische Biochemie/ Clinical biochemistry (VO)	Klinische Biochemie/ Clinical biochemistry (PR)

§6 Denotation and Extent of the Subjects and Courses

(0) The following abbreviations are used:

SSt... weekly hours in one semester (semester credit hours)

n/a... not applicable

Course Type :

PR...Laboratory Exercise

SE...Seminar

UE...Exercise

VO...Lecture

KV... Combined Course

(E)... Part of the „initial study phase“

Mode of Examination:

S... written

M... oral

I..... intrinsic

K.... combined (*)

(*) This includes a written and an oral component. To obtain a passing mark, the total performance must be positive.

(1) Subjects

	SSt	ECTS
<i>General and Inorganic Chemistry</i>	11	14.2
<i>Analytical Chemistry</i>	15	18.6
<i>Biochemistry</i>	27	34.7
<i>Biology</i>	14	18.4
<i>Informatics</i>	8	11.6
<i>Communication and Ethics</i>	8	11.2
<i>Mathematics and Physics</i>	14	20.4
<i>Molecular Biology</i>	8	10.0
<i>Organic Chemistry</i>	11	13.6
<i>Physical Chemistry</i>	9	11.6
<i>Bachelor theses</i>		8.0
<i>Elective subjects</i>	7	≥7.7
Total	132	180.0

(2) Mandatory Courses

The mandatory courses are categorized by subject in the following table:

Allgemeine und Anorganische Chemie/ General and Inorganic Chemistry

	SSt	Typ/ Type	Prüfg./ Exam	ECTS
<i>Allgemeine und Anorganische Chemie/ General and Inorganic Chemistry</i>	11			14.2
Einführung in die Allgemeine Chemie/ Introduction to General Chemistry	2	VO(E)	K	2.6
Chemisches Rechnen/ Chemical Calculations	1	KV(E)	I	1.6
Praktikum aus Allgemeiner Chemie/ Laboratory in General Chemistry	4	PR(E)	I	4.8
Allgemeine und Anorganische Chemie 1/ General and Inorganic Chemistry 1	4	VO(E)	S	5.2

Analytische Chemie/ Analytical Chemistry

	SSt	Typ/ Type	Prüfg./ Exam	ECTS
<i>Analytische Chemie/ Analytical Chemistry</i>	15			18.6
Einführung in das Analytische Praktikum/ Introduction to the Analytical Laboratory	1	VO(E)	K	1.3
Analytische Chemie 1/ Analytical Chemistry 1	3	VO(E)	S	3.9
Praktikum aus Analytischer Chemie 1/ Laboratory in Analytical Chemistry 1	7	PR	I	8.4
Instrumentelle Analyse/ Instrumental Analysis	2	VO	M	2.6
Instrumentelle Analyse Praktikum/ Laboratory of Instrumental Analysis	2	PR	I	2.4

Biochemie/ Biochemistry

	SSt	Typ/ Type	Prüfg./ Exam	ECTS
Biochemie/ Biochemistry	27			34.7
Biochemie 1/ Biochemistry 1	2	VO	K	2.6
Biochemie 2/ Biochemistry 2	2	VO	K	2.6
Biochemisches Praktikum/ Biochemistry Laboratory	6	PR	I	7.2
Umweltchemie/ Environmental Chemistry	2	VO	K	2.6
Umweltchemisches Praktikum/ Environmental Chemistry Laboratory	2	PR	I	2.4
Klinische Biochemie/ Clinical Biochemistry	3	VO	K	3.9
Praktikum aus klinische Biochemie/ Clinical Biochemistry Practical	2	PR	I	2.4
WHO/EU laboratory procedure administration	2	VO	K	2.6
Biologisch-Chemisches Wahlfach/ Biological Chemical Elective subject	4		n/a	5.2
Seminar in Biologischer Chemie/ Biological Chemistry Seminar	2	SE	I	3.2

The *Biological Chemical Elective Subjects (Biologisch-Chemische Wahlfach)* can be chosen from the following courses, with a minimum of 5.2 ECTS points total:

	SSt	Typ/ Type	Prüfg./ Exam	ECTS
<i>Biologisch-Chemische Wahlfach/ Biological Chemical Elective Subjects</i>				≥5.2
Principles of anticancer and antiviral drug development 1	2	VO	M	2.6
Principles of anticancer and antiviral drug development 2	2	VO	M	2.6
Computational chemistry	2	VO	M	2.6
Biopharmacy	2	VO	M	2.6
Biomolecular NMR spectroscopy	2	VO	K	2.6
Scientific English/ German/ French/ Spanish/ Czech (#)	2	VO	M	2.

(#) The elected course may not be the mother tongue of the student.

Biologie/ Biology

	SSt	Typ/ Type	Prüfg./ Exam	ECTS
Biologie/ Biology	14			18.4
Biostatistik/ Biostatistics	2	VO	K	2.6
Übungen zu Biostatistik/ Biostatistics Exercises	2	UE	I	3.2
Biologie der Mikroorganismen/ Biology of Microorganisms	2	VO	M	2.6
Praktikum zur Biologie der Mikroorganismen/ Biology of Microorganisms Laboratory	4	PR	I	4.8
Biologie der Pflanzen/ Biology of Plants	2	VO	K	2.6
Biologie der Tiere/ Biology of Animals	2	VO	K	2.6

Informatik/ Informatics

	SSt	Typ/ Type	Prüfg./ Exam	ECTS
Informatik/ Informatics	8			11.6
Software Entwicklung 1/ Software Development 1	2	VO	S	2.6
Software Entwicklung 1 für Chemiker/ Software Development 1 for Chemists	2	UE	I	3.2
Bioinformatik/ Bioinformatics	2	VO	S	2.6
Bioinformatik Übungen/ Exercises in Bioinformatics	2	UE	I	3.2

Kommunikation und Ethik/ Communications and Ethics

	SSt	Typ/ Type	Prüfg./ Exam	ECTS
Kommunikation und Ethik/ Communications and Ethics	8			11.2
English for Scientists 1 (understanding)	2	KV	I	2.6
English for Scientists 2 (understanding)	2	KV	I	2.6
Scientific English 1 (writing & presenting)	1	KV	I	1.4
Scientific English 2 (writing & presenting)	1	UE	I	1.6
Ethics and Gender Studies	2	VO	S	3.0

Mathematik und Physik/ Mathematics and Physics

	SSt	Typ/ Type	Prüfg./ Exam	ECTS
Mathematik und Physik/ Mathematics and Physics	14			20.4
Mathematik für Chemiker 1/ Mathematics for Chemists 1	2	VO	S	2.6
Übungen zu Mathematik für Chemiker 1/ Exercises in Mathematics for Chemists 1	1	UE	I	1.6
Mathematik für Chemiker 2/ Mathematics for Chemists 2	2	VO	M	2.6
Übungen zu Mathematik für Chemiker 2/ Exercises in Mathematics for Chemists 2	1	UE	I	1.6
Physik/ Physics	3	VO	M	4.5
Übungen zu Physik/ Exercises in Physics	1	UE	I	1.5
Biophysik/ Biophysics	2	VO	S	3.0
Biophysik Praktikum/ Biophysics Laboratory	2	PR	I	3.0

Molekularbiologie/ Molecular Biology

	SSt	Typ/ Type	Prüfg./ Exam	ECTS
Molekularbiologie/ Molecular Biology	8			10.0
Molekularbiologie und Genetik 1/ Molecular Biology & Genetics 1	2	VO	M	2.6
Molekularbiologie und Genetik 2/ Molecular Biology & Genetics 2	2	VO	M	2.6
Praktikum zu Methoden der Molekularbiologie/ Methods in Molecular Biology Laboratory	4	PR	I	4.8

Organische Chemie/ Organic Chemistry

	SSt	Typ/ Type	Prüfg./ Exam	ECTS
Organische Chemie/ Organic Chemistry	11			13.6
Organische Chemie 1/ Organic Chemistry 1	4	VO	K	5.2
Praktikum aus Organischer Chemie 1/ Laboratory in Organic Chemistry 1	7	PR	I	8.4

Physikalische Chemie/ Physical Chemistry

	SSt	Typ/ Type	Prüfg./ Exam	ECTS
Physikalische Chemie/ Physical Chemistry	9			11.6
Physikalische Chemie 1/ Physical Chemistry 1	4	VO	M	5.2
Übungen aus Physikalischer Chemie 1/ Exercises in Physical Chemistry 1	1	UE	I	1.6
Praktikum aus Physikalischer Chemie 1/ Laboratory in Physical Chemistry 1	4	PR	I	4.8

Bachelor theses

The subject area of the two Bachelor theses can be selected from the list in §6(1), with the exception of "Communication and Ethics". The theses can be completed in the context of the courses that are allocated to the types KV, UE, PR, and SE. The topic is selected by the course leader. The topic must be from the area of Biological Chemistry. At least one of the two theses must be based on practical participation in a research project. The Bachelor theses must be written in the English language and be presented in English in the course "Biological Chemistry Seminar" (this course is offered in both universities).

		Typ/ Type	Prüfg./ Exam	ECTS
Bachelorarbeiten/ Bachelor theses				8.0
Bachelor thesis 1		N/A	S	4.0
Bachelor thesis 2		N/A	S	4.0

(3) Elective Subjects:

Students have to choose elective subjects with a minimum of 7 SSt during semesters 1- 6.

Elective Subjects

		Typ/ Type	Prüfg./ Exam	ECTS
<i>Freifächer/ Elective subjects</i>	7		n/a	≥7.7

§ 7 Recommended Study Plan for the Bachelor Study Biological Chemistry

The recommended semester and locations (JKU or SBU) of the individual courses are indicated in a separate table in the appendix. The courses of the 1st, 2nd and 5th semester are normally taught at the Johannes Kepler University in Linz, the courses of the 3rd and 4th semester are generally taught at the University of South Bohemia. During semester 6, there are courses at both locations. If possible, these courses should be blocked in such a way that the first 8 weeks of the semester can be completed at the JKU, the second 8 weeks at either SBU or JKU. As a rule, the Bachelor theses and completion of the study should occur during this second part of the semester.

§ 8 Examination Regulations

- (1) For Bachelor studies, the exams have to be taken for the individual mandatory and elective courses, these exams are eligible as Bachelor exams. The Bachelor study is completed when the student has passed all of these exams and the Bachelor theses.
- (2) Courses with an intrinsic assessment are not assessed with a single examination, but by considering participation, the written reports as well as one or several oral or written contributions during the semester. A final examination over the whole material covered during the course is permitted and can be included for determining the final mark.
- (3) The assessment of courses, including those without intrinsic assessment, must occur in such a time period so that there is no delay of the study, as the courses, including those without intrinsic assessment, must be assessed in a time frame that does not cause delays in the study for the student.
- (4) Oral examinations are public.
- (5) The language of examinations is generally English. Exceptions are possible according to § 5, paragraph 1.3.
- (6) Students of this curriculum are eligible to sit examinations of completed courses at the partner university, even if they did not attend courses at this university during the semester.
- (7) The marking system of both universities is identical (1-5), a conversion of marks is therefore not necessary.

§ 9 Academic Degree

- (1) Upon successful completion of the Bachelor study (§8 Par 1) the student is awarded the academic degree “Bachelor of Science (BSc) by the Johannes Kepler University Linz as well as the the academic degree “Bachelor (Bc)” by the University of South Bohemia. The name of the study “Biological Chemistry” is to be indicated on the diploma.

§ 10 Coming into Effect

- (1) The curriculum comes into effect on the 1st September, 2007.
- (2) The changes concerning the award of the academic degree based on the decision of the senate from April 1st, 2008 and announced in the JKU bulletin *of April 9th, 2008 (JKU Mitteilungsblatt)* come into effect on the day following the announcement.

APPENDIX TO THE BACHELOR CURRICULUM OF BIOLOGICAL CHEMISTRY

Recommended Semester Plan

The column Sem./Loc indicates the semester in which the attendance of the corresponding course is recommended and the university (JKU = Johannes Kepler Universität, SBU = University of South Bohemia) in which the course is offered.

Individual courses that do not have a mandatory attendance can also be offered location- and time-independent, using electronic media (e-learning).

	Sem./ Loc.
Biological Chemical Elective Subject	
Principles of anticancer and antiviral drug development 1	3-4/ SBU
Principles of anticancer and antiviral drug development 2	3-4/ SBU
Computational chemistry	3-4/ SBU
Biopharmacy	3-4/ SBU
Biomolecular NMR spectroscopy	3-6/ SBU, JKU
Scientific English/German/French/ Spanish/Czech (VO)	3-6/ SBU, JKU

	Sem./Loc
Bachelor theses	
Bachelor thesis 1	4-6/SBU, JKU
Bachelor thesis 2	4-6/SBU, JKU

	Sem./ Loc.
Freifächer/ Elective subjects	1-6/SBU, JKU

	Sem./ Loc.
Allgemeine und Anorganische Chemie/General and Inorganic Chemistry	
Einführung in die Allgemeine Chemie/ Introduction to General Chemistry	1/JKU
Chemisches Rechnen/ Chemical Calculations	1/JKU
Praktikum aus Allgemeiner Chemie/ Laboratory in General Chemistry	1/JKU
Allgemeine und Anorganische Chemie 1/ General and Inorganic Chemistry 1	1/JKU

	Sem./ Loc
Analytische Chemie/ Analytical Chemistry	
Einführung in das Analytische Praktikum/ Introduction to the Analytical Laboratory	1/JKU
Analytische Chemie 1/ Analytical Chemistry 1	2/JKU
Praktikum aus Analytischer Chemie 1/ Laboratory in Analytical Chemistry 1	2/JKU
Instrumentelle Analyse/ Instrumental Analysis	5/JKU
Instrumentelle Analyse Praktikum/ Laboratory of Instrumental Analysis	5/JKU

	Sem. / Loc.
Biochemie/ Biochemistry	
Biochemie 1/ Biochemistry 1	3/SBU
Biochemie 2/ Biochemistry 2	4/SBU
Biochemisches Praktikum/ Biochemistry Laboratory	4/SBU
Umweltchemie/ Environmental Chemistry	3/SBU
Umweltchemisches Praktikum/ Environmental Chemistry Laboratory	4/SBU
Klinische Biochemie/ Clinical Biochemistry	3/SBU
Praktikum aus klinische Biochemie/ Clinical Biochemistry Practical	3/SBU
WHO/EU laboratory procedure administration	4/SBU
Biologisch-Chemisches Wahlfach/ Biological Chemical Elective Subject	3,4/SBU 5,6/JKU
Seminar in Biologischer Chemie/ Biological Chemistry Seminar	4,5,6/SBU,JKU

	Sem. / Loc
Biologie/ Biology	
Biostatistik/ Biostatistics	3/SBU
Übungen zu Biostatistik/ Biostatistics Exercises	3/SBU
Biologie der Mikroorganismen/ Biology of Microorganisms	3/SBU
Praktikum zur Biologie der Mikroorganismen/ Biology of Microorganisms Laboratory	3/SBU
Biologie der Pflanzen/ Biology of Plants	4/SBU
Biologie der Tiere/ Biology of Animals	4/SBU

	Sem. / Loc.
Informatik/ Informatics	
Software Entwicklung 1/ Software Development 1	2/JKU
Software Entwicklung 1 für Chemiker/ Software Development 1 for Chemists	2/JKU
Bioinformatik/ Bioinformatics	5/JKU
Bioinformatik Übungen/ Exercises in Bioinformatics	5,6/JKU

	Sem. / Loc.
Kommunikation und Ethik/ Communications and Ethics	
English for Scientists 1 (understanding)	1/JKU
English for Scientists 2 (understanding)	2/JKU
Scientific English 1 (writing & presenting)	4/SBU 5/JKU
Scientific English 2 (writing & presenting)	6/JKU 6/SBU
Ethics and Gender Studies	5/JKU 6/SBU

	Sem. / Loc.
Mathematik und Physik/ Mathematics and Physics	
Mathematik für Chemiker 1/ Mathematics for Chemists 1	1/JKU
Übungen zu Mathematik für Chemiker 1/ Exercises in Mathematics for Chemists 1	1/JKU
Mathematik für Chemiker 2/ Mathematics for Chemists 2	1,2/JKU
Übungen zu Mathematik für Chemiker 2/ Exercises in Mathematics for Chemists 2	1,2/JKU
Physik/ Physics	2/JKU
Übungen zu Physik/ Exercises in Physics	2/JKU

Biophysik/ Biophysics	5/JKU
Biophysik Praktikum/ Biophysics Laboratory	5/JKU

	Sem./ Loc
Molekularbiologie/ Molecular Biology	
Molekularbiologie und Genetik 1/ Molecular Biology & Genetics 1	3/SBU
Molekularbiologie und Genetik 2/ Molecular Biology & Genetics 2	4/SBU
Praktikum zu Methoden der Molekularbiologie/ Methods in Molecular Biology Laboratory	4/SBU

	Sem./ Loc
Organische Chemie/ Organic Chemistry	
Organische Chemie 1/ Organic Chemistry 1	2/JKU
Praktikum aus Organischer Chemie 1/ Laboratory in Organic Chemistry 1	5/JKU

	Sem./ Loc.
Physikalische Chemie/ Physical Chemistry	
Physikalische Chemie 1/ Physical Chemistry 1	5/JKU 3/SBU(*)
Übungen aus Physikalischer Chemie 1/ Exercises in Physical Chemistry 1	5/JKU 3 /SBU(*)
Praktikum aus Physikalischer Chemie 1/ Laboratory in Physical Chemistry 1	5/JKU 6/JKU

(*) Possibility of electronic communication from JKU to SBU in the form of „Open-Distance-Learning“.

	Sem./ Loc.
Biologisch-Chemische Wahlfach/ Biological Chemical Elective Subject	
Principles of anticancer and antiviral drug development 1	3-4/ SBU
Principles of anticancer and antiviral drug development 2	3-4/ SBU
Computational chemistry	3-4/ SBU
Biopharmacy	3-4/ SBU
Biomolecular NMR spectroscopy	3-6/ SBU, JKU
Scientific English/German/French/ Spanish/Czech (VO)	3-6/ SBU, JKU

	Sem./Loc
Bachelorarbeiten/ Bachelor theses	
Bachelorarbeit 1/ Bachelor thesis 1	4-6/SBU, JKU
Bachelorarbeit 2/ Bachelor thesis 2	4-6/SBU, JKU

	Sem./ Loc.
Freifächer/ Elective subjects	1-6/SBU, JKU