

Study Programmes at the Faculty of Chemistry and Chemical Technology

in 2021/2022

University study Programmes

- Chemistry (1st and 2nd cycle)
- Biochemistry (1st and 2nd cycle)
- Chemical Engineering (1st and 2nd cycle)
- Technical Safety (1st and 2nd cycle)
- Chemical Education (2nd cycle)

Professional Programme

- Chemical Technology



University of Ljubljana
Faculty of *Chemistry and Chemical Technology*



Dear international student

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Welcome to the Faculty of Chemistry and Chemical Technology, University of Ljubljana. If you are interested in chemistry, you are in the right place. Let us tell you something about the history of our Faculty, and our activities. Of course, the main two activities of our institution are education and research, but we manage to keep some other activities as well. In this brochure you will find a list of the study programmes and courses we offer. We hope you will find them attractive enough to apply for the Erasmus mobility programme, or some other programmes to take studies at our faculty.

Chemistry studies at the University of Ljubljana have a long tradition. With already 100-year history

behind us, an enormous development has been achieved and numerous bachelor, master and doctoral degrees have been awarded so far. Many generations of students have learned how to transfer their knowledge to their jobs, either in industries, research laboratories at institutes, or in educational institutions such as schools and universities. Have a look at this brochure and see what we offer, and learn about the life in our country. If you decide to take studies at our Faculty, we wish you an enjoyable and enriching experience.

Dean of the Faculty
International Coordinator
International Affairs Office

Study at FKKT

Student service

Student affairs office

Location: Večna pot 113

E-mail address: referat@fkkt.uni-lj.si

International affairs

Location: Večna pot 113, Student Affairs Office

E-mail address: stojka.oman@fkkt.uni-lj.si

About academic studies

Academic calendar

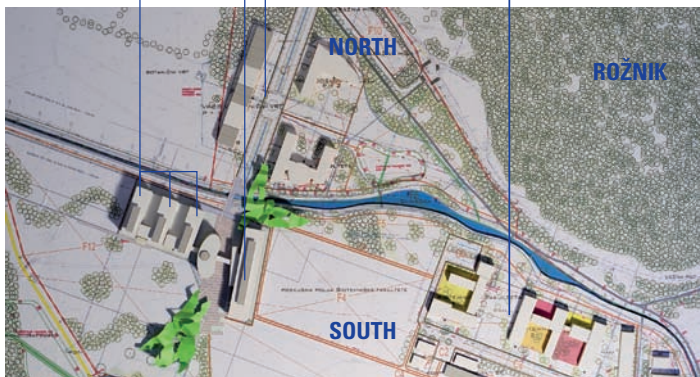
Academic year starts on 1st October and ends at the end of September. It is divided into two semesters. The first semester starting on October 1st and ending in the middle of January, and the second semester from mid February until the end of September. There are three examination periods - winter, summer and autumn.

■ Faculty of chemistry and chemical technology

■ Faculty of computing and informatics

■ Biological center

■ Faculty of Biotechnology



ECTS credits and grades

Each of the courses in the 1st and the 2nd cycle has 5 credit points per semester. One credit point means 25–30 hours of student's workload.

Grading System

10 = exceptional knowledge with negligible faults = A

9 = outstanding knowledge but showing some faults = B

8 = solid knowledge = C

7 = good knowledge but showing some major faults = D

6 = knowledge meeting minimum criteria = E

5 = knowledge not meeting minimum criteria = F

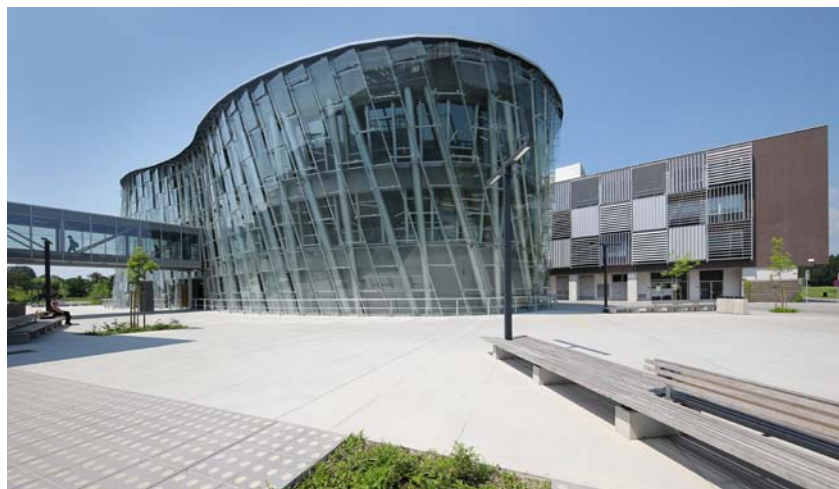
Language of lectures and instructions

All the lectures are given in Slovene language with some exceptions in the 2nd and 3rd cycle. Our teachers will be more than happy to give you instructions and explanations in English.

Foreign students are offered free Slovene language courses within Year Plus module. A bonus study year is obtained upon meeting certain requirements. E-mail address: letoplus@uni-lj.si

Course catalogue

You will find the descriptions of the courses and the directions about the study on the web address: <http://www.fkkt.uni-lj.si/en>



University study programme of CHEMISTRY

University study programme of CHEMISTRY – 1st cycle

Year 1

1st semester

- Mathematics
- Physics
- General Chemistry
- Laboratory Practice in General and Inorganic Chemistry
- Molecular Fundamentals of Life Sciences
- Elective General Course

2nd semester

- Mathematics
- Physics
- Inorganic Chemistry
- Laboratory Practice in General and Inorganic Chemistry
- Structure and Properties of Solids
- Analytical Chemistry I

Year 2

3rd semester

- Analytical Chemistry II
- Practical Course in Analytical Chemistry
- Organic Chemistry I
- Physical Chemistry
- Structure of Atoms and Molecules
- Introduction to Programming

4th semester

- Organic Chemistry II
- Practical Course in Organic Chemistry
- Physical Chemistry
- Practical Course in Physical Chemistry
- Spectroscopy
- Elective Professional Course

Year 3

5th semester

- Organic Chemistry III
- Organic Analysis
- Instrumental Methods
- Biological Chemistry
- Instrumental Analysis
- Practical Course in Instrumental Methods and Instrumental Analysis

6th semester

- Principles of Chemical Engineering for Chemists
- Elective General Course
- Elective Professional Course
- Diploma Work

The list of electives is published on the web site: www.fkkt.uni-lj.si/en



Master study programme of CHEMISTRY – 2nd cycle

Year 1

1st semester

- Inorganic Chemistry
- Numerical Methods in Chemistry
- Mathematics II
- Advanced Methods of Instrumental Analysis
- Elective Professional Course*
- Elective Professional Course*

2nd semester

- Organic Chemistry
- Physical Chemistry II
- Modern Inorganic Materials and Catalysts
- Electrochemistry
- Photochemistry and Radicals
- Elective General Course*

Year 2

3rd semester

- Molecular Modelling
- Elective Professional Course*
- Master Thesis Work

4th semester

- Master Thesis Work

*The list of electives is published on the web site: www.fkkt.uni-lj.si/en



University study programme of BIOCHEMISTRY

University study programme of BIOCHEMISTRY – 1st cycle

Year 1

1st semester

- Mathematics
- Physics
- General Chemistry
- Practical Course in Chemistry
- General Biology
- Elective General Course

2nd semester

- Mathematics
- Physics
- Inorganic Chemistry
- Organic Chemistry I
- Fundamentals in Biochemistry
- Practical Course in Biochemistry

Year 2

3rd semester

- Organic Chemistry II
- Physical Chemistry
- Cell Biology
- Biochemistry
- Instrumental Analytical Methods
- Introduction to Programming

4th semester

- Physical Chemistry
- Molecular Biology
- Protein Structure
- Introduction to Biomolecular Structure
- Microbiology
- Biochemical Informatics

Year 3

5th semester

- Spectroscopic Methods in Biochemistry
- Molecular Cloning
- Enzymology
- Cell and Molecular Immunology
- Fundamentals of Genetics
- Elective Professional Course

6th semester

- Fundamentals of Physiology
- Elective General Course
- Elective Professional Course
- Diploma Work

The list of electives is published on the web site: www.fkkt.uni-lj.si/en



Master study programme of BIOCHEMISTRY – 2nd cycle

Year 1

1st semester

- DNA Technology
- Methods for Determining 3D Macromolecular Structure
- Biophysical Chemistry I
- Biochemistry of Heterocellular Systems
- Bioorganic Chemistry
- Interactions of Biological Molecules

2nd semester

- Bioinorganic Chemistry
- Molecular Human Genetics
- Bionanotechnology
- Synthetic Biology
- Elective Course 1
- Elective Course 2

Year 2

3rd semester

- Master Thesis Work

4th semester

- Elective Course 3
- Elective Course 4
- Master Thesis Work

The list of electives is published on the web site: www.fkkt.uni-lj.si/en

University study programme of CHEMICAL ENGINEERING

University study programme of CHEMICAL ENGINEERING – 1st cycle

Year 1

1st semester

- Mathematics
- Physics
- General Chemistry
- Molecular Fundamentals of Life Sciences
- Engineering Fundamentals
- Introduction to Programming

2nd semester

- Mathematics
- Physics
- Physics Laboratory
- Inorganic Chemistry
- Practical Course in General and Inorganic Chemistry
- Chemical Engineering I

Year 2

3rd semester

- Mathematics II
- Organic Chemistry
- Chemical Thermodynamics
- Instrumental Methods of Analysis
- Practical Course in Instrumental Methods of Analysis
- Elective General Course

4th semester

- Chemical Engineering II
- Fluid Mechanics
- Materials for Engineers
- Quantum Mechanics
- Chemical and Process Safety
- Elective Professional Course

Year 3

5th semester

- Heat and Mass Transfer
- Chemical Reaction Engineering
- Chemical Engineering Thermodynamics
- Chemical Product Engineering
- Elective General Course
- Elective Professional Course

6th semester

- Separation Processes
- Practical Course in Chemical Engineering
- Diploma Work

The list of electives is published on the web site: www.fkkt.uni-lj.si/en



Master study programme of CHEMICAL ENGINEERING – 2nd cycle

Year 1

1st semester

- Catalysis and Heterogeneous Reaction Systems
- Nanomaterials and Composites
- Bioprocess Engineering
- Environmental Protection Technology Processes
- Research Work
- Elective General Course

2nd semester

- Chemical Engineering Dynamics
- Elective Professional Course
- Elective Professional Course
- Research Work

Year 2

3rd semester

- Chemical Microprocess Engineering
- Management and Process Economics
- Elective Professional Course
- Elective Professional Course
- Master Thesis Work

4th semester

- Elective Professional Course
- Elective General Course
- Master Thesis Work

The list of electives is published on the web site: www.fkkt.uni-lj.si/en



University study programme of TECHNICAL SAFETY

University study programme of TECHNICAL SAFETY – 1st cycle

Year 1

1st semester

- Mathematics I
- Physics I
- Chemistry
- Introduction to Health Care
- Elective Course

2nd semester

- Mathematics II
- Physics II
- Introduction to Technical and Fire Safety
- Safety in Mechanical Engineering
- Elective Course

Year 2

3rd semester

- Legal Concepts of Safety
- Working Environment
- Numerical and Computer Tools in Safety
- Machine and Construction Elements
- Fundamentals of Process Engineering
- Environmental Protection I

4th semester

- Working Environment
- Fundamentals of Materials
- Fire and Fire Dynamics
- Occupational Health
- Elective Course
- Elective Course

Year 3

5th semester

- Safety Statistics
- Risk Analysis
- Electrical Engineering and Safety
- Dangerous Substances
- Ergonomics and Ergonomic Measurements
- Occupational Psychology

6th semester

- Fire Detection and Suppression
- Practical Course I
- Elective Course
- Diploma Work

The list of electives is published on the web site: www.fkkt.uni-lj.si/en



Master study programme of TECHNICAL SAFETY – 2nd cycle

Year 1

1st semester

- Numerical Methods in Safety II
- Risk Management
- Process Safety
- Vulnerability of Systems
- Elective General Course

2nd semester

- Interventions and Rescue
- Human and Organisational Factors
- Elective Professional Course
- Research Work

Year 2

3rd semester

- Environmental Risk
- Fire safety
- Management and Process Economics
- Elective Professional Course
- Master Thesis Work

4th semester

- Technical safety
- Elective Professional Course
- Master Thesis Work

The list of electives is published on the web site: www.fkkt.uni-lj.si/en

University study programme of CHEMICAL EDUCATION

Master study programme of CHEMICAL EDUCATION – 2nd cycle

Year 1

1st semester

- Educational Psychology
- Inorganic Chemistry
- Advanced Methods of Instrumental Analysis
- Methodology of Teaching Chemistry for Secondary Schools I
- Biophysical Chemistry I

2nd semester

- Pedagogics and Andragogics
- Organic Chemistry
- School Experiments in General and Inorganic Chemistry
- School Experiments in Organic Chemistry
- Experiments in Analytical Chemistry for Schools
- Elective Course

Year 2

3rd semester

- School Experiments in Physical Chemistry
- Chemistry of Natural Compounds
- Information Communication Technology in School
- Teaching Practice
- Elective Course

4th semester

- Methodology of Teaching Chemistry for Secondary Schools II
- Knowledge Assessment
- Elective Course
- Master Thesis Work (Classroom Research)

The list of electives is published on the web site: www.fkkt.uni-lj.si/en

Professional programme CHEMICAL TECHNOLOGY

Year 1

1st semester

- Mathematics and Statistics
- Physics
- General Chemistry
- Fundamentals of Industrial Chemistry
- Practical Course in General Chemistry
- Elective General Course

2nd semester

- Mathematics and Statistics
- Inorganic Chemistry
- Organic Chemistry I
- Fundamentals of Biochemistry with Biotechnology
- Practical Course in Inorganic Chemistry
- Elective General Course

Year 2

3rd semester

- Analytical Chemistry I
- Organic Chemistry II
- Fundamentals of Chemical Engineering
- Processes in Industrial Chemistry
- Practical Course in Organic Chemistry
- Elective Professional Course

4th semester

- Analytical Chemistry II
- Physical Chemistry I
- Unit Operations in Chemical Engineering
- Environmental Chemistry
- Chemical and Process Safety
- Elective Professional Course

Year 3

5th semester

- Analytical Chemistry III
- Basics in Material Science and Engineering
- Mechanical Operations
- Measurements and Fundamentals of Process Control
- Physical Chemistry II
- Practical Course in Chemical Engineering Fundamentals

6th semester

- Industrial Processes and Sustainable Development
- Elective Professional Course
- Practical Training
- Diploma Work

The list of electives is published on the web site: www.fkkt.uni-lj.si/en

Doctoral Programme in Chemical Sciences

The doctoral programme in Chemical sciences lasts four years with the total of 240 ECTS credit points. Course units have been weighted according to the European Credit Transfer System (ECTS) which provides for the recognition of studies abroad and exchange of students within the countries which have adopted the ECTS system.

One credit point is equal to 30 hours of student workload.

The study stream and the area of the doctoral thesis are determined by the course of the student's research work, which also determines the selection of elective courses and the content of other forms of study.

The structure of the programme with credit points and shares:

Table below presents the structure of the programme with ECTS credit points.

Module – contents	1st year	2nd year	3rd year	4th year	Total
Research work	20 ECTS	45 ECTS	60 ECTS	55 ECTS	180 ECTS
Compliance with the conditions*	5 ECTS	5 ECTS		5 ECTS	15 ECTS
Mandatory participation at organised invited lectures	10 ECTS	10 ECTS			20 ECTS
Induction seminar	5 ECTS				5 ECTS
Professional training	5 ECTS				5 ECTS
Elective courses	10 ECTS				10 ECTS
Academic Writing	5 ECTS				5 ECTS
Total	60 ECTS	60 ECTS	60 ECTS	60 ECTS	240 ECTS

* Compliance with the conditions encompasses: public presentation of research hypotheses for doctoral dissertation before enrolment in the 2nd year, obtaining approval for the topic of doctoral dissertation before enrolment in the 3rd year, and submission and defence of the doctoral thesis.



List of elective courses

- Selected Topics in Inorganic Chemistry
- Advanced Methods in Inorganic Synthesis
- Modern Diffraction Techniques
- Frontiers in Analytical Chemistry
- Approaches in Modern Analytical Chemistry
- Selected Topics in Experimental Physical Chemistry
- Theoretical Methods in Physical Chemistry
- Selected Topics in Organic Chemistry
- Selected Topics in Heterocyclic Chemistry
- Study on Mechanisms of Organic Transformations
- Selected Topics in Biochemistry
- Modern Methods and Techniques in Biochemistry
- Modern NMR Approaches in Characterisation of Compounds
- Contemporary Computational Methods in Biochemistry
- Biopharmaceuticals
- Selected Topics in Materials for New Energy Sources
- Selected Topics in Polymer Engineering
- Selected Topics in Separation Processes
- Selected Topics in Rheology and Structure of Complex Fluids
- Selected Topics in Chemical Reaction Engineering
- Selected Topics in Environmental Engineering
- Selected Topics in Transport Phenomena
- Selected Topics in Bioprocess Engineering
- Selected Topics in Materials Engineering

Possibilities of elective courses and mobility

The proposed study programme provides mobility of students and teachers. Students will be able to take elective courses in a foreign institution, while teachers will be exchanged as invited lecturers. There will be other possibilities of cooperation through research work: students will be able to carry out part of their research in foreign institutions.

The procedure of recognition of credit points, acquired at other institutions, must be approved by the FKKT Senate or another appointed body.



Before arrival

There are many things to be done before leaving your home country and going abroad. It is good to go through all the details and perhaps this brochure will ease the procedures you have to go through.

Application process

Applications need to be submitted to the Central International Relations Office of the University of Ljubljana. Deadlines for Erasmus exchange applications are:

For autumn semester – May 15

For spring semester – November 15

Buddy system

We try to find a buddy for every visiting student. Buddies are local students who are willing to help foreign students in adapting to a new environment. Your buddy will meet you at the airport, bus or train station, help you with all general things, such as finding the University building, student organisation, buying a permanent bus ticket, showing places to eat, entertainment, etc.

Accommodation

University of Ljubljana does not guarantee accommodation. However, there are some options for your accommodation:

Temporary accommodation

You are strongly recommended to try to find a cheap hostel in Ljubljana, where you can book a room for the first week after your arrival. This will allow time to find private accommodation in the meantime.

Private accommodation

The Student Organization of the University of Ljubljana will help you find private accommodation after your arrival to Ljubljana. You need to complete the form Information on Housing which you can find at:

https://www.uni-lj.si/international_cooperation_and_exchange/erasmus-plus-programme/

and send it to: intern.office@uni-lj.si

or fax to: +386 1 2418 593.

Before your departure make sure to book a hostel for the first few nights. After your arrival, contact the International Office of the Student Organization who will provide you with some addresses for room rental. All accommodation is located within the public transportation zone.

Student dormitories

Erasmus students can apply for accommodation in student dormitories. Rooms are given to students on the “first come first serve” basis. Most of the rooms in the dormitories are double, with a bathroom and shared kitchen. Access to the Internet is provided in almost all dormitories. The Information on Housing Form (see our web site!) should be sent to the e-mail address: intern.office@uni-lj.si or to faxed to: 00386 1 2418 593 by 15 May (first semester) or by 15 November (second semester). The forms can be sent also earlier.



Health insurance

Foreign students coming from the EU member countries and the countries of the European economic region should obtain either the E 128 form, E 111 form, or E-card. The document type depends on the authorized insurance agency of your country. Please contact the authorized insurance agency where you have been insured and ask which of the above-mentioned forms applies. If you have no health insurance in your home country, you can contact an insurance company that will cover your insurance in the Republic of Slovenia (ASSISTENCE CORIS, Ul. Bratov Babnik 10, 1000 Ljubljana, tel.: +386 1 519 20 20, fax: +386 1 519 16 98, Email: coris@coris.si).

Residence permit and domicile

After 1st May 2004, any citizen coming from a European Union state can enter the Republic of Slovenia with a valid identity card or a valid passport, without a special entrance permit (i.e. visa or residence permit). This holds true for any purpose of entry and staying in the Republic of Slovenia. For the first three months of staying in Slovenia a person does not need a residence permit, however he/she is obliged to report to the Police. Should your residence exceed three months a residence permit is still obligatory. It can be

obtained from the administrative office within the residential district (for Ljubljana: Tobačna ulica 5, 1000 Ljubljana). The residence permit will be issued in accordance with the conditions set out by the European Union. For issuing a residence permit to citizens from a member state for the purpose of study the following conditions need to be met:

- A valid identity card or passport
- Evidence of enrolment to an educational institution,
- Health insurance covering all risks in the host member state,
- Sufficient means for living (higher than the level under which the host

country approves social aid to its citizens. According to the the European Union's court practice a statement handed in writing and signed by the student as to his means is sufficient). According to the directive, the residence permit is granted for the period of studies or for maximum one year, and can be extended in the event that the studies take longer than one year.

Non-eu citizens

Non-EU citizens need to apply for the First Residence Permit with the nearest diplomatic or consular representative office (DCRO) of the Republic of Slovenia. You may submit your application in person, or send it to the DCRO by registered mail, or a third person may submit it on your behalf with your authorization. A consular fee of approx. 76 EUR is charged for processing your application. Your First residence permit application needs to be furnished with:

- a **certified** photocopy of your valid passport
- **enrolment certificate** (Confirmation of enrolment by the University of Ljubljana)
- **certificate** of sufficient means of support during your stay in Slovenia (this means regular income, such as scholarship, parent's income, personal income, pensions, however not a single fund deposit in Republic of Slovenia or a credit card).

- **health insurance certificate:** In addition to stating that you have health insurance, this certificate should contain a clear description of the scope of your rights and it should be already valid from the time of your application for the residence permit.



If you have no health insurance in your home country, you may submit a certificate of commercial insurance of the insurance company that will cover your insurance in the Republic of Slovenia (contact ASSISTENCE CORIS, UL Bratov Babnik 10, 1000 Ljubljana, tel.: +386 1 519 20 20, fax: +386 1 519 16 98).

- **confirmation of no criminal proceedings** being instituted against the person in question, issued by a competent body in your home country. All certificates, confirmations or appendices must be translated into Slovene language and the translation certified by a notary.

Travel information

You can travel to Ljubljana by different means of transport. If you chose to travel by plane, the airport of Ljubljana is about 25 kilometres away. From the airport you can take a bus which leaves every hour, or take a taxi. Travelling by train has its advantages. It is cheaper, and the railway station is situated in the centre of the city. There are many youth hostels nearby and the University building is within a 15 minute walking distance.

What to bring with

Slovenia has Mediterranean climate on the coast, and continental climate with mild to hot summers and cold winters in the plateaus and valleys to the east. If you are coming to Slovenia in winter you have to be prepared to cold weather, therefore warm clothes are recommended. Do not forget to take gloves, scarves and warm shoes with you. Spring and autumn are quite mild but in summer temperatures raise to 30 degrees Celsius.

First things to do

First thing to do when you reach Ljubljana is to contact the Central international office at the University. They will provide you with a welcome package and give all the information you are going to need. After that you should go to the Student organisation office to obtain a student identity card which you will use to get discounts for meals and public transport. After that you need to contact the International office of the Faculty of Chemistry and Chemical Technology.

Practical matters

Here is some useful information that you may wish to know.

- The emergency telephone number in Slovenia is 112.
- Student Health Service is organised by the University of Ljubljana.

Facts about slovenia

<http://www.gov.si>

<http://en.wikipedia.org/wiki/Slovenia>

<http://www.slovenia.si/>

<http://www.ljubljana.si/en/>



Address and telephone numbers

University of Ljubljana
Faculty of Chemistry and Chemical Technology
1000 Ljubljana, Večna pot 113

Telephone

++386 1 479 8000 (reception)
++386 1 479 8420 (International Affairs Office)

E-mail address

stojka.oman@fkkt.uni-lj.si

Web address

<http://www.fkkt.uni-lj.si/en>



Erasmus+

University of *Ljubljana*
Faculty of *Chemistry and Chemical Technology*

