FRI

CHALLENGING THE FUTURE

2nd Cycle

Master's Programmes

University *of Ljubljana*
Faculty *of Computer and Information Science*

Accept the Challenge

Today, computer and information science is an important and inevitable building block of all systems and organisations–from companies to public services, from education and research to industry and sales. Most systems are already interconnected and by means of artificial intelligence they will become even more autonomous. Are people still needed at all? Of course. More than ever, we need those that can manage advanced computer systems and processes and will be capable of directing the fast development of this segment in the future. Employment trends indicate a growing demand for such highly-qualified personnel.

The Faculty of Computer and Information Science of the University of Ljubljana (FRI) focuses particularly on this goal. The close cooperation of educational personnel–researchers with partners from the corporate sector provides up-to-date programmes, dealing with modern challenges, and a direct transfer of the latest findings into practice. Working in the largest technological companies or independently penetrating the market requires integration in the global environment. As a response the Faculty offers double degree programme with the University of Graz and promotes exchange with many partner universities all over the world.

We realise that the importance of computer knowledge becomes evident in connection with other disciplines, which is why our second-cycle study programme is even more interdisciplinary and offers more elective content that students can base their career paths on. What represents a challenge for you? Programming mobile applications or web applications in the cloud, developing games consoles, new methods of using touch screens, virtual reality and wearable technologies, developing artificial intelligence and autonomous robots, managing complex systems or working with large-scale databases? Perhaps something completely new? Even better.

First-cycle graduates in computer and information science and graduates of other fields of study: Master's studies at the Faculty of Computer and Information Science will upgrade your existing knowledge and strengthen competencies for a successful career.

Seize the opportunity!

Master's Study Programmes

The Faculty of Computer and Information Science of the University of Ljubljana conducts several Master's study programmes that offer a wide spectrum of knowledge of computer and information sciences and related fields. Great emphasis is placed on interdisciplinary integration of knowledge, so all programmes allow for cooperation with partner faculties and universities. During the two-year study, students become qualified for a successful career in the industry and entrepreneurial world as well as in the academic field.

2nd

Master's Study Programmes

Computer and Information Science

Interdisciplinary study Computer Science and Mathematics
(with the Faculty of Mathematics and Physics)

Interdisciplinary study Multimedia
(with the Faculty of Electrical Engineering)

Interdisciplinary study Computer Science Education
(with the Faculty of Education)

Interdisciplinary study Cognitive Science
(with the Faculty of Education, the Faculty of Arts, and the Faculty of Medicine)

ŽIGA LESAR,
student of the Master's programme Computer and Information Science and the recipient of the University Prešren Award for the diploma project

Master's programmes at the Faculty of Computer and Information Science offer in-depth knowledge in numerous fields. Students can choose from a wide range of courses, some directly related to the industry. At tutorials, we can directly apply the theoretical knowledge that we have obtained in classes to intriguing practical problems and thus consolidate our knowledge. I believe that the Faculty offers numerous possibilities for high-quality education, to which professors and assistants contribute by good will and an amiable approach.

Computer and Information Science

This study is the logical next step from the first-cycle University and Professional study programme Computer and Information Science and it is also available to graduates from other first-cycle programmes. The course syllabus enables the study to be tailored to students' wishes, motivations, and preferences. Elective content covers a wide range of fields and technologies, and thus allows for diverse professional specialisation. The Computer and Information Science study programme offers future Master's degree holders the knowledge and skills enabling them to keep up with the development and technological changes and novelties as well as to become involved in research and scientific work, offering exceptional employment opportunities in Slovenia and around the world.

Terms and conditions of enrolment

Eligible for enrolment: (a) Graduates of the first-cycle study or an equivalent study in the field of computer and information science or natural and technical sciences (mathematics, physics, electrical engineering, chemistry and chemical technology, mechanical engineering, construction); (b) Students who have completed the first-cycle study or an equivalent study in a field that is not stated under item a) and before enrolment have passed the first-cycle courses at the FRI: Programming 1; Discrete Structures; Introduction to Digital Circuits; Computer Systems Architecture; Introduction to IT systems; or have covered the subject matter of these courses in their undergraduate studies.

The candidates will be selected based on:

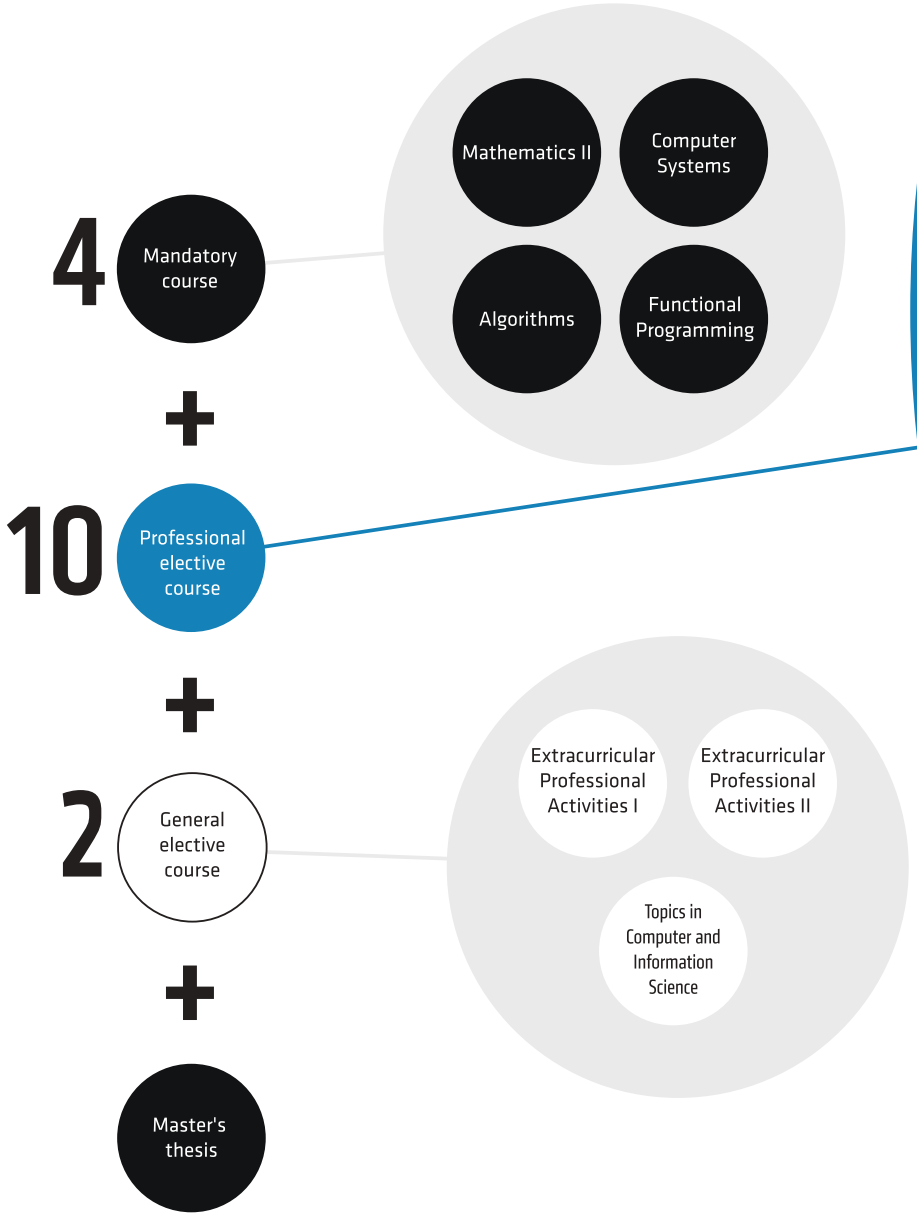
- The average grade achieved in the first-cycle study (40%);
- the results of the selection exam (60%).

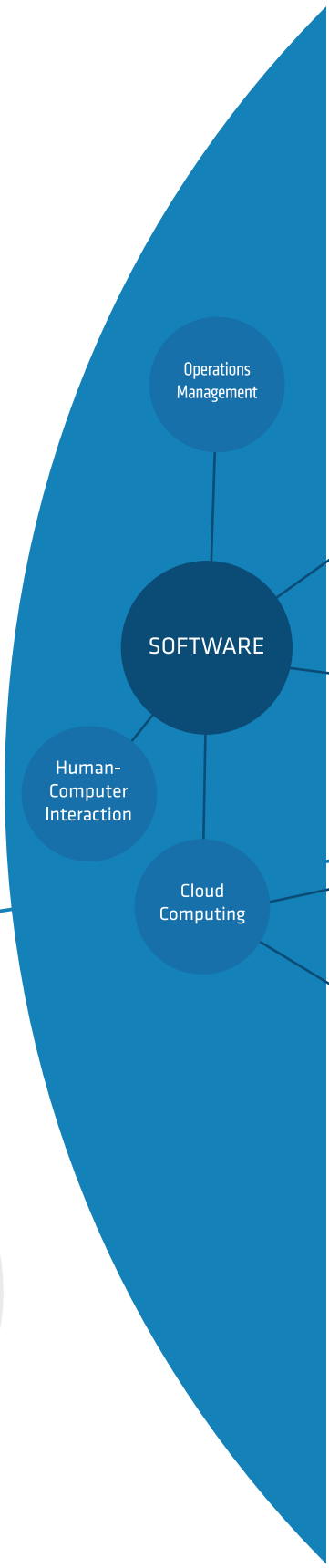
The selection exam will cover chapters in mathematics, programming, algorithms, and computer systems and will be carried out in September, after the deadline for enrolment in the study programme.

Computer and Information Science

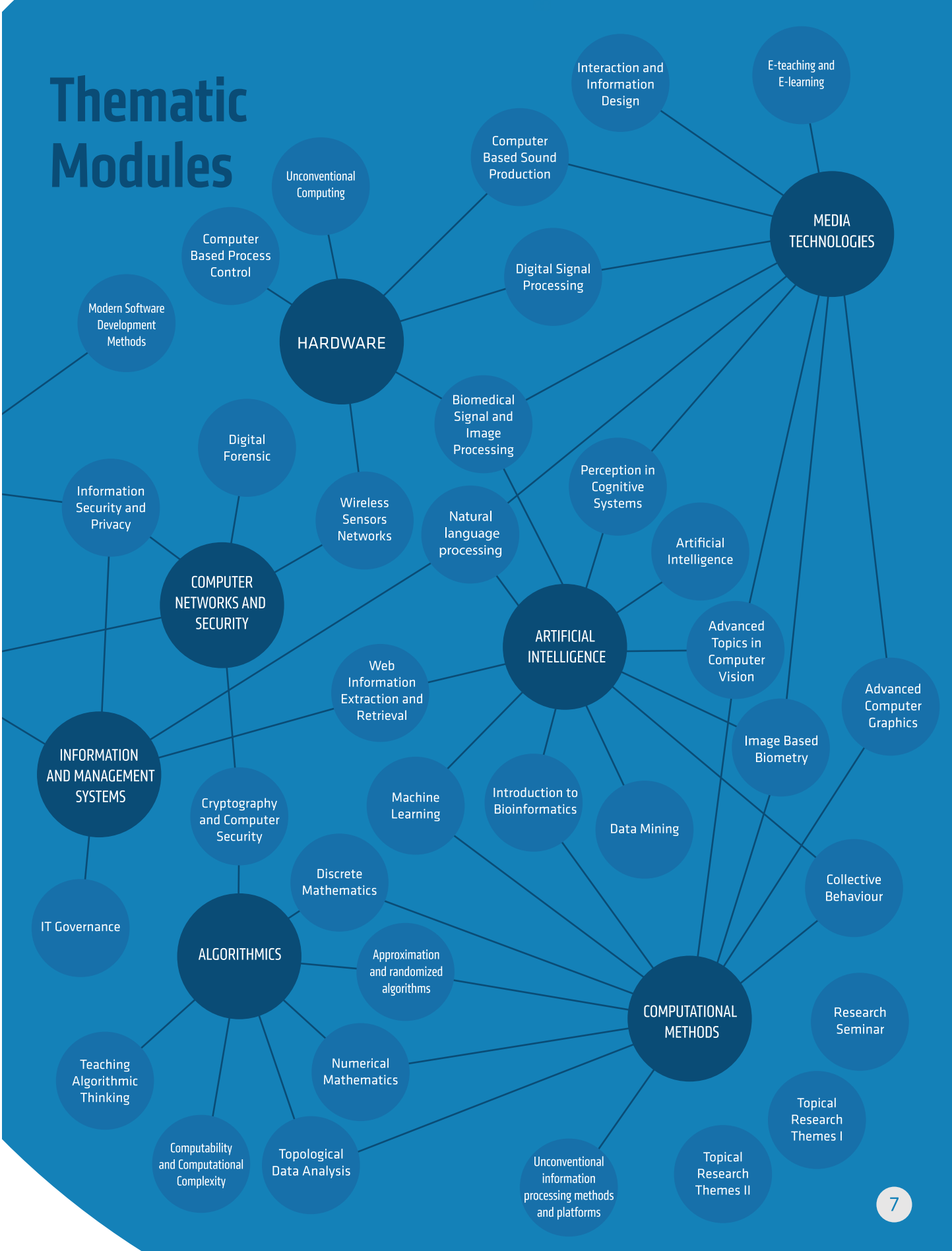
The programme is comprised of four mandatory courses, 30 professional elective courses, three general elective courses, and a Master's thesis.

Students select the study direction that they will pursue by choosing two thematic modules that best fit their interests. From among all the courses in these two modules (or from one module), students then choose six professional elective courses, whereas the remaining four can be selected from the entire range of the professional elective courses available). That way, every student formulates a course syllabus that is focused, but still allows a reasonable degree of selection.





Thematic Modules



Double Degree Study Programme in Computer and Information Science

The students of the Master's programme in Computer and Information Science may in the 2nd year enrol in the double degree study programme conducted by the Faculty of Computer and Information Science of the University of Ljubljana and the Graz University of Technology (Technische Universität Graz). There are 10 available enrolment places.

The Master's programme at Graz University enables students to deepen their knowledge in algorithms, software technology, intelligent systems, information security, image processing, computer graphics and visualisation, media and computer science and multimedia systems. The programme is delivered in the English language.

Students who pass at least one semester in Austria and prepare a Master's thesis with mentors from both universities, obtain degrees from the University of Ljubljana and the University of Graz. Both universities acknowledge credit points earned by students at the partner university.

With a population of 300,000, Graz is the second largest Austrian town and the capital of the federal state of Styria. Lying next to the Mura river, the town is included in the UNESCO world cultural heritage list and was awarded the 2003 title of European Capital of Culture. It is an important university town hosting six universities frequented by over 40,000 students. About 12,500 students visit Graz University of Technology, of whom more than 100 from Slovenia.

JAKA CIKAČ,
student of the Master's programme Computer and Information Science

I warmly recommend student exchange programmes to all FRI students. It is not only an excellent opportunity to expand your knowledge by taking courses which are not offered at the home university, but also an insight into a new environment and its culture, as well as an opportunity to learn a new language and bridge cultural differences. The dual degree study programme in cooperation with the Graz University of Technology has also allowed me to become more involved in their research. My experience through collaboration with their international research groups has been invaluable. Furthermore, I have made acquaintances with many high calibre researchers. In addition to academic experience, I have also gained extensive organisation and time management skills. The dual degree programme is truly an unforgettable life experience.

ROK KRALJ,
student of the Master's programme Computer Science and Mathematics

As I grow older and gain experience, I realise the importance of mathematical knowledge for an engineer-to-be. Ever more important are the mathematics-related fields, such as machine learning and artificial intelligence. The software development trend increasingly favours the use of mathematical, functional concepts. The knowledge of mathematics also enables you to view problems from a different, more abstract perspective, which leads to products of higher quality and new ideas. The Master's study programme Computer Science and Mathematics provides a balanced combination of both fields, additional depth, and an excellent opportunity to combine the pleasant and the useful.

Computer Science and Mathematics

The interdisciplinary study Computer Science and Mathematics is offered jointly with the Faculty of Mathematics and Physics of the University of Ljubljana. The study focuses on training for the development and working with new information technologies, research in mathematics and theoretical computer science, and the development of the ability to quickly master new findings and achievements. Master's degree holders can become employed in any branch of the economy, in the public or non-profit sector, working in a number of fields, from information and communication technologies to computer and mathematical support in management of complex systems.

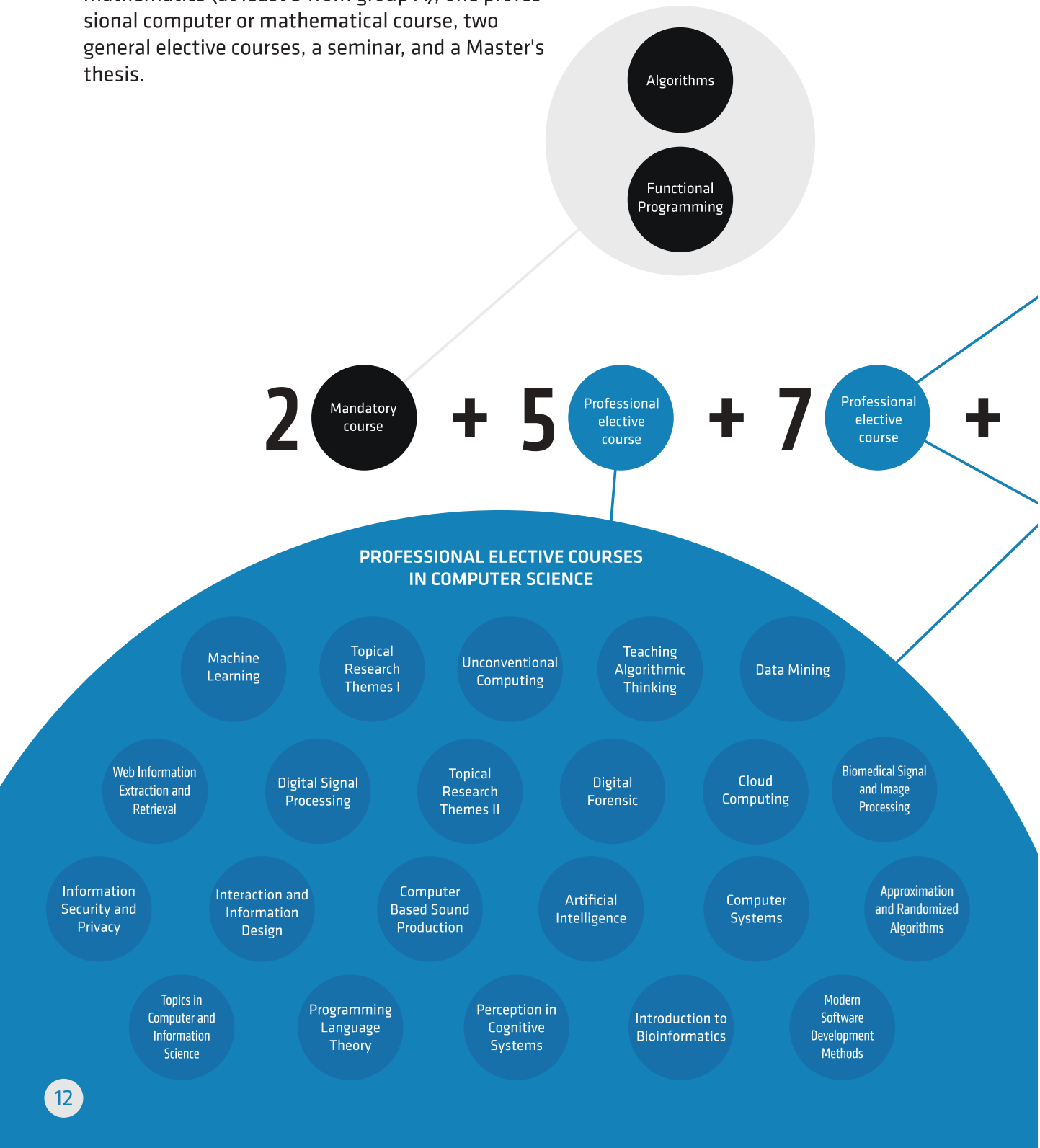
Terms and conditions of enrolment

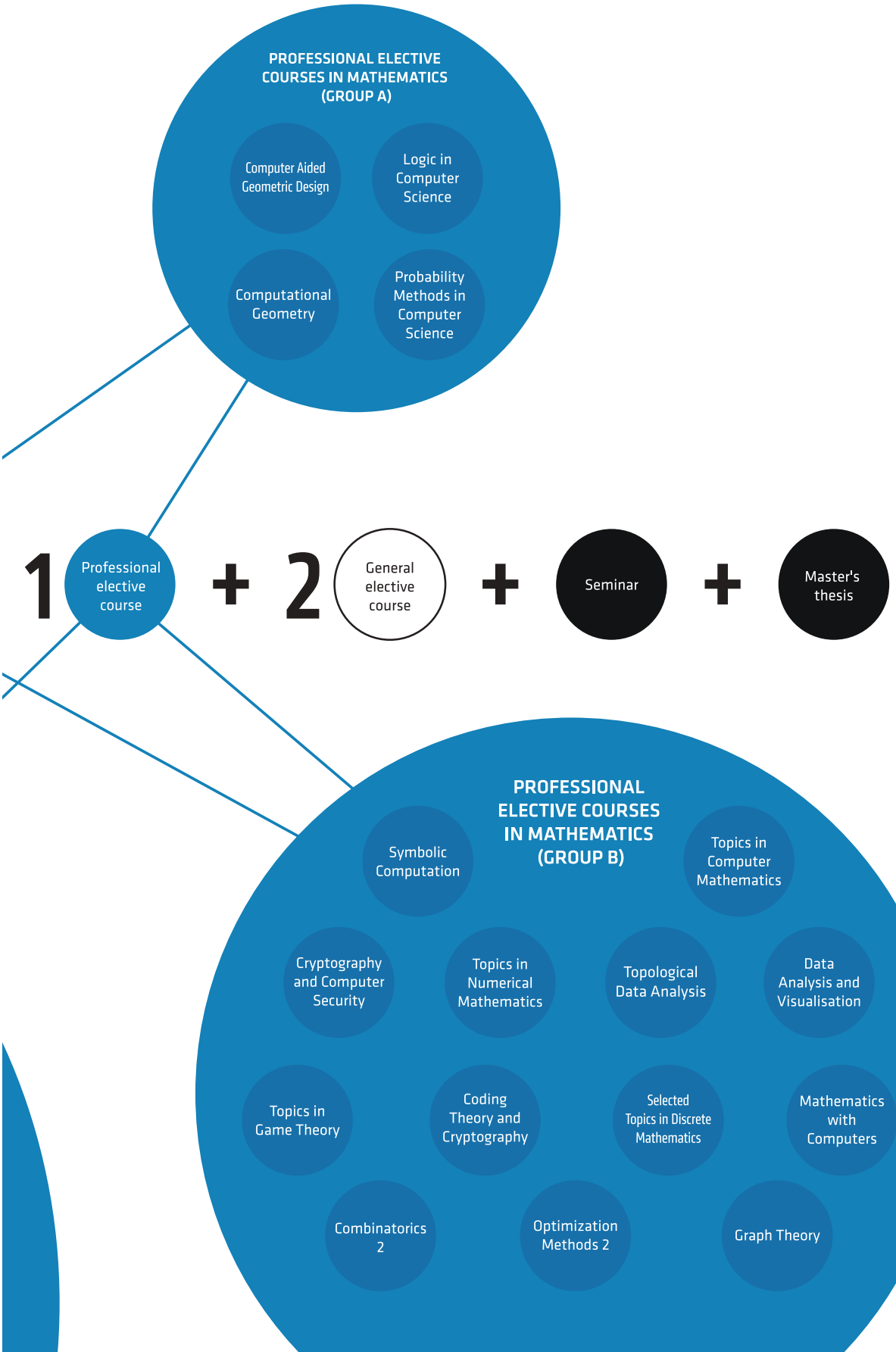
Eligible for enrolment: (a) Graduates of the first-cycle study programme: Computer and Information Science, Interdisciplinary study Computer Science and Mathematics, Mathematics or Financial Mathematics;
(b) Graduates of the first-cycle professional study programme Computer and Information Science or the professional study programme Computer and Information Science adopted prior to 11 June 2004; before enrolment, the student must pass exams in the courses of the first-cycle interdisciplinary study Computer and Mathematics: Analysis 3, Discrete Structures 2, Linear Algebra and Numerical Methods; (c) Graduates of the first-cycle professional study programme Practical Mathematics; before enrolment, the student must pass exams in the courses of the first-cycle interdisciplinary study Computer and Mathematics: Introduction to Artificial Intelligence, Computability and Computational Complexity, Computer Communications, Algorithms and Data Structures;
(d) Students who have completed the first-cycle study programme or the study programme for obtaining higher professional education adopted prior to 11 June 2004 in technical or natural sciences, mastering the necessary knowledge of mathematics and computer science; before enrolment, the student must perform study obligations comprising 60 credit points essential for further study; (e) Students who have completed an equivalent education programme at another higher education institution in Slovenia or abroad.

The candidates will be selected based on:
- Overall first-cycle study achievement (50%),
- Achievement in mathematical courses (25%),
- Achievement in computer science courses (25%).

Computer Science and Mathematics

The programme is comprised of two mandatory courses, five professional elective courses in computer science, seven professional elective courses in mathematics (at least 3 from group A), one professional computer or mathematical course, two general elective courses, a seminar, and a Master's thesis.




PROFESSIONAL ELECTIVE COURSES IN MATHEMATICS (GROUP A)
Computer Aided Geometric Design
Logic in Computer Science
Computational Geometry
Probability Methods in Computer Science
1
Professional elective course
+ 2
General elective course
+
Seminar
+
Master's thesis
PROFESSIONAL ELECTIVE COURSES IN MATHEMATICS (GROUP B)
Symbolic Computation
Topics in Computer Mathematics
Cryptography and Computer Security
Topics in Numerical Mathematics
Topological Data Analysis
Data Analysis and Visualisation
Topics in Game Theory
Coding Theory and Cryptography
Selected Topics in Discrete Mathematics
Mathematics with Computers
Combinatorics 2
Optimization Methods 2
Graph Theory

MANCA ŽEROVNIK,
student of the Master's programme Computer and Information Science

At first I was not certain whether or not to decide for post-graduate study at the Faculty of Computer and Information Science, but I definitely do not regret my decision now. Things that we learned in the first-cycle study start coming together in the second-cycle study. Every week my knowledge becomes more comprehensive. Learning new things about the field that I am familiar with is much more interesting and less demanding that learning the basics. The attitude is more student-friendly, as we are given more freedom and the deadlines are not as strict. Study indeed becomes a pleasure.

Computer Science Education

The interdisciplinary study Computer Science Education is conducted in cooperation with the Faculty of Education of the University of Ljubljana. With this programme we wish to contribute to the better education of teachers and thus the higher quality of computer lessons in Slovenian schools. Master's degree holders will have an excellent knowledge of computer science and will also be qualified for educational work. In the first year the students are educated in didactics; the courses passed by the graduates from the Faculty of Education in the first cycle will be recognised. The second year is more focused on computer science and comprises some advanced general courses and a series of elective courses from various fields of computer science.

Terms and conditions of enrolment

Eligible for enrolment: (a) Graduates of the first-cycle study; without additional obligations, if they completed the study in the professional fields of: computer science, mathematics, natural science and technical science under the programme comprising 60 credit points of computer and information science units; (b) Graduates of the first-cycle study in other professional fields, if they fulfil the study obligations essential to continue the study before enrolment. The obligations ranging between 10 and 60 credit points are determined by both faculties together, and the candidates must fulfil them before enrolling in Master's study; (c) Graduates of the higher education professional study programme adopted before 11 June 2004 in the relevant professional fields specified under item a); (d) Graduates of the higher education professional study programme adopted before 11 June 2004 in other professional fields, if they fulfil the study obligations essential to continue the study before enrolment. The obligations ranging between 10 and 60 credit points are determined by both faculties together, and the candidates must fulfil them before enrolling in Master's study; (e) Eligible for enrolment are also the candidates who completed equivalent education abroad. Before enrolling in the study programme they have to pass the education recognition procedure to continue the study.

Computer Science Education

The programme comprises 14 mandatory courses, two professional elective courses in computer science, one general elective course, practical training, and a Master's thesis.

1st year

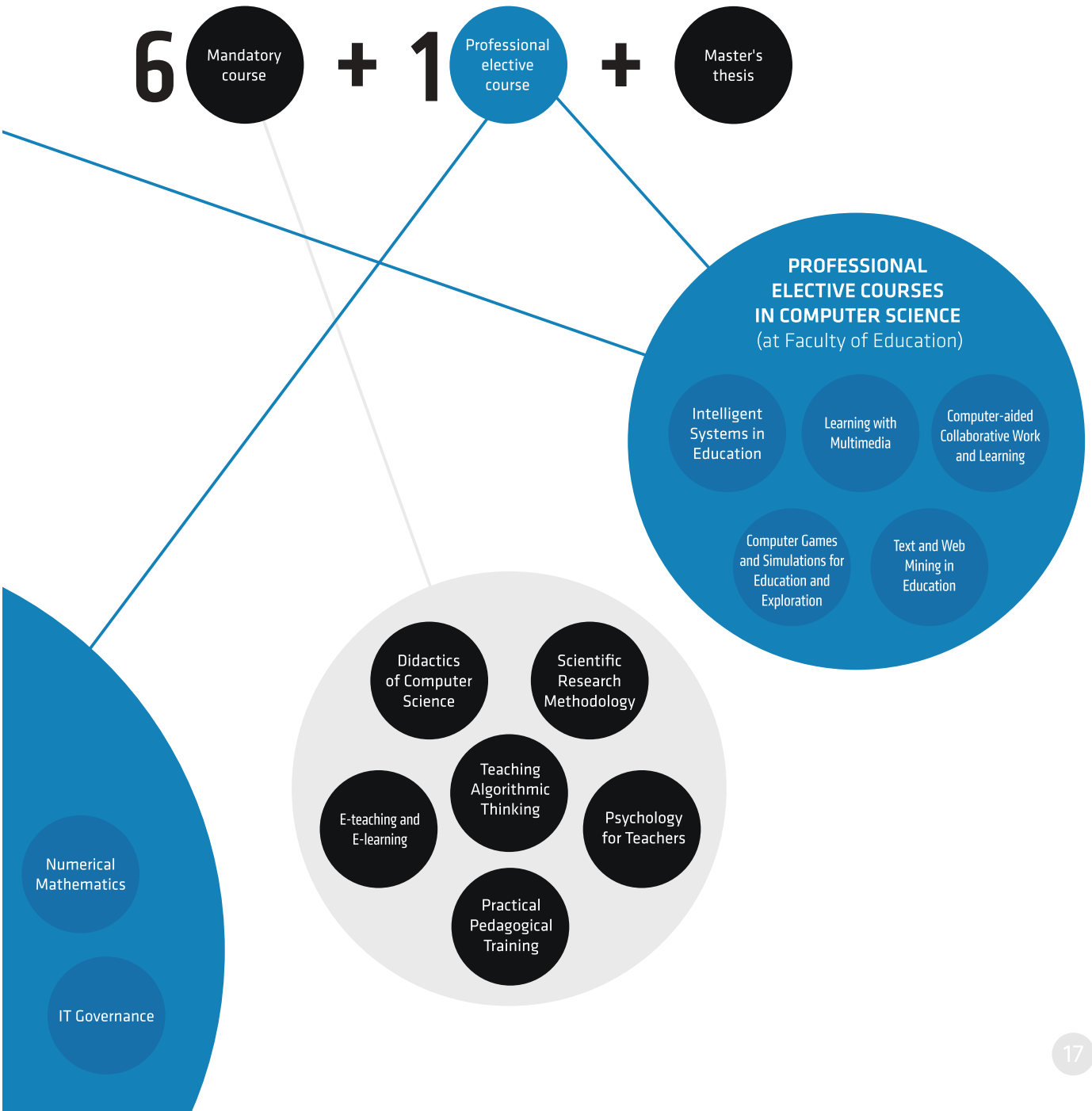
8 Mandatory course + 1 General elective course + 1 Professional elective course

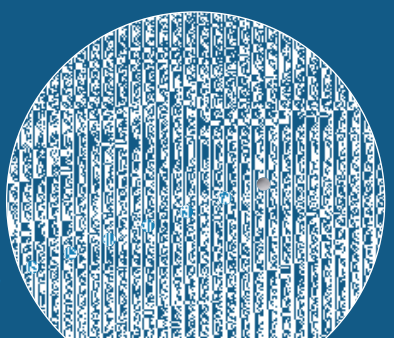
- Algorithms
- Functional Programming
- Mathematics 2
- Theory of Education
- Računalniški sistemi
- Inclusive Educational Work
- Didactics
- Philosophical and Sociological Aspects of Education

PROFESSIONAL ELECTIVE COURSES IN COMPUTER SCIENCE
(at Faculty of Computer and Information Science)

- Information Security and Privacy
- Computer Based Sound Production
- Data Mining
- Introduction to Bioinformatics
- Computability and Computational Complexity
- Artificial Intelligence
- Interaction and Information Design
- Approximation and Randomized Algorithms
- Modern Software Development Methods

2nd year


6
Mandatory course
+ 1
Professional elective course
+
Master's thesis
PROFESSIONAL ELECTIVE COURSES IN COMPUTER SCIENCE
(at Faculty of Education)
Intelligent Systems in Education
Learning with Multimedia
Computer-aided Collaborative Work and Learning
Computer Games and Simulations for Education and Exploration
Text and Web Mining in Education
Didactics of Computer Science
Scientific Research Methodology
Teaching Algorithmic Thinking
E-teaching and E-learning
Psychology for Teachers
Practical Pedagogical Training
Numerical Mathematics
IT Governance



ANKA SLANA,
Master of Cognitive Science

Already as a child I was fascinated by human psyche: Why are we the way we are, how do we feel, dream, make decisions, can the functioning of our brain really be compared to the functioning of a computer? The decision to enrol was easy, as the study offered exactly what I wanted. The study is extremely interdisciplinary and comprises learning about various scientific disciplines, from neurology, psychology and philosophy to programming and artificial intelligence. As such, it meets both the requirements of science-oriented and more socially-oriented students. Lecturers are of top quality and you can feel that they are really interested in the topic. Often debates evolve that keep you up all night. Everyone looking for answers to the most fundamental questions of human essence will enjoy the study.

Cognitive Science

The interdisciplinary study Cognitive Science is provided in cooperation with the Faculty of Education, the Faculty of Arts and the Faculty of Medicine of the University of Ljubljana, and a consortium of foreign universities. Cognitive Science researches mentality. Its basic disciplines include neuro science, artificial intelligence, biology, linguistics, anthropology, philosophy, and psychology. The goal of the study is to educate researchers in cognitive science and experts qualified for integrative work in interdisciplinary projects. Master's degree holders will be capable of applying the findings of cognitive science to specific areas, such as teaching, designing software for machine learning, measuring user experience, producing interfaces and managing group processes.

Terms and conditions of enrolment

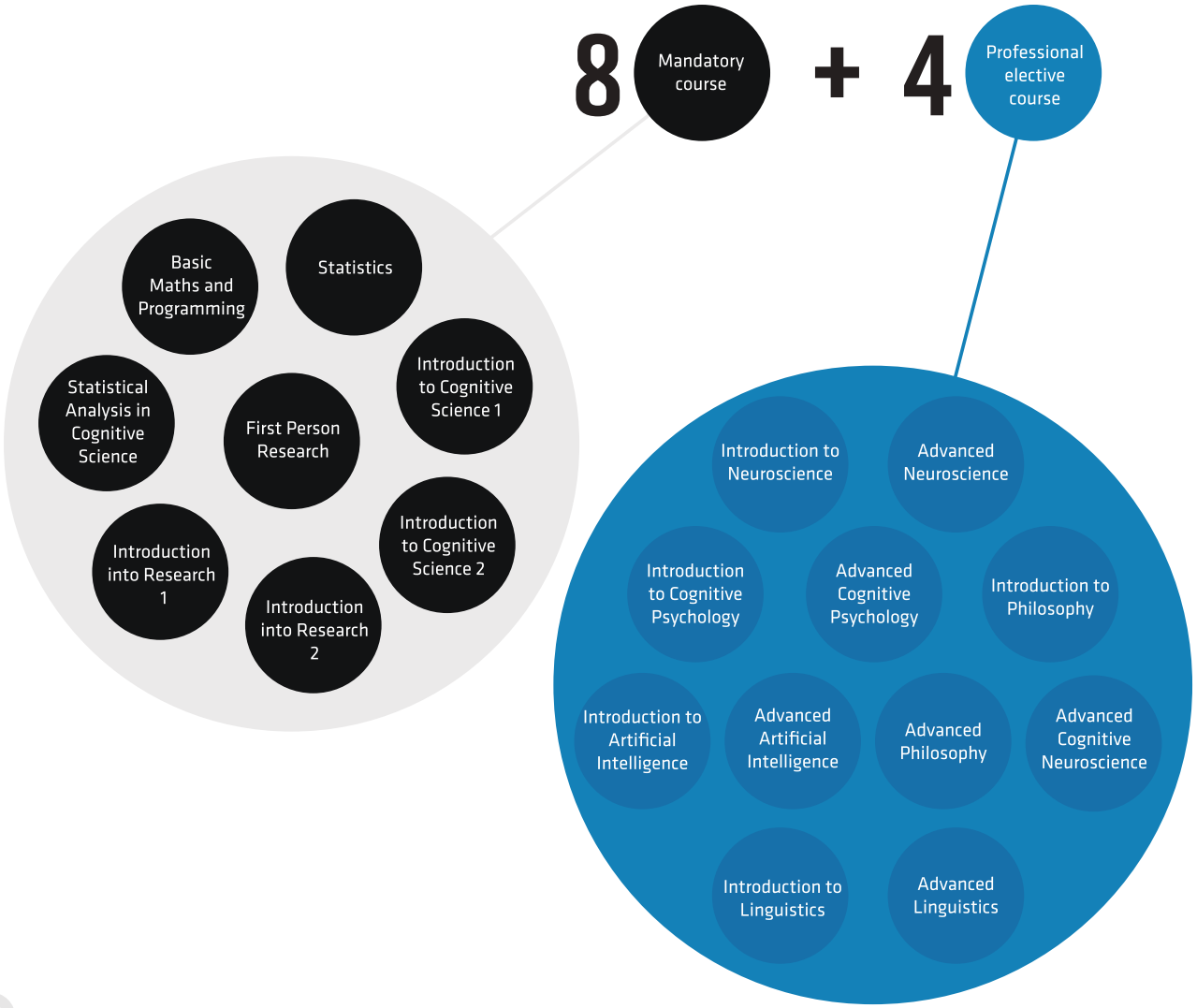
Eligible for enrolment: (a) Graduates of the first-cycle university Bologna study programme or professional study programme adopted prior to 11 June 2004 in the following professional fields: philosophy, medicine, computer science, psychology, linguistics, educational sciences, anthropology, sociology, culturology, mathematics, and biology; (b) Graduates of the first-cycle study programme or professional study programme adopted prior to 11 June 2004 in other professional fields that are not enumerated under item a). The candidate has to pass the exams in Introduction to Philosophy and Introduction to Neuroscience or other courses with appropriate content comprising at least 10 credit points.

Cognitive Science

The course syllabus is organised in three interconnected sets. The disciplinary set and the tool set offering the student conceptual, practical, and cultural experience in cognitive science disciplines, whereas the integrative core is used as a platform for common reflection, reference, and integration of this experience. The study is designed as a two-year Master's study programme.

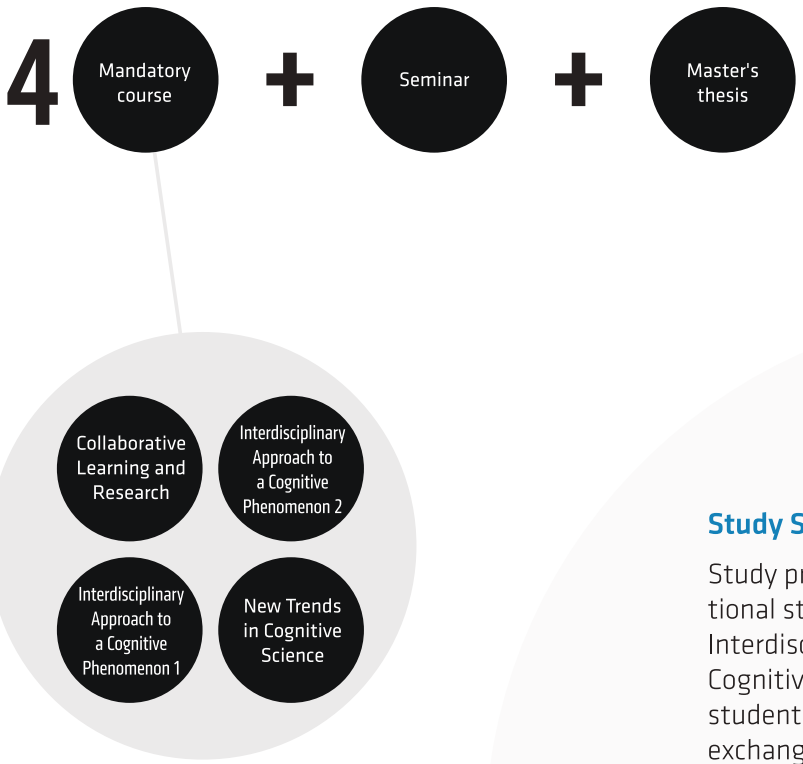
1st year

Students are oriented in the field of cognitive science and foundations are laid for interdisciplinary research. They become familiar with theoretical concepts and research methods of the fundamental cognitive science disciplines: neuro science, philosophy, psychology, linguistics, and artificial intelligence.



2nd year

Students obtain specialised knowledge of the selected topic and focus on a certain cognitive phenomenon through the connection of research methods and perspectives of various disciplines.



Study Semester Abroad

Study programme is part of the international student consortium Middle European Interdisciplinary Master Programme in Cognitive Science (MEi:CogSci). Every student must spend one semester on exchange abroad at one of the partner universities depending on his/her research preferences.

Members of the consortium: University of Ljubljana, University of Vienna, University of Zagreb, Eötvös Loránd University Budapest, Comenius University in Bratislava.

Enrolment into the Second Cycle Master's Study Programmes

The candidates must submit their application for enrolment into the Master's study programmes of the University of Ljubljana online, namely via the eVŠ online portal which is accessible via the following eVŠ address: portal.evs.gov.si/prijava. Detailed instructions for filling out the form are also available on the above website.

Candidates with foreign qualifications are required to apply for recognition of their entry qualifications. Application for the recognition of foreign education with a view to access to education in the Republic of Slovenia is an integral part of the Application for enrolment via eVŠ web portal.

All the information on access to higher education programmes is available in calls for enrolment. The calls are announced every year in June at the latest for second cycle Master's study programmes.

The applications for enrolment should be submitted no later than 31 August, 2017.

Questions on application and admission procedures please address to:

Student Affairs
masters.studies@fri.uni-lj.si
Phone: +386 1 479 81 23

How to Apply?

Recognition of Foreign Education

Candidates with foreign higher education qualifications are required to have their education recognised in Slovenia prior to access to the graduate or postgraduate studies in Slovenia. The recognition procedure starts at the request of the candidate who submits the request with the prescribed form Application for the Recognition of Foreign Education for the Purpose of Continuing the Education alongside with the Application for enrolment. We advise the candidates, abiding in a foreign country, to appoint and authorise a person in Slovenia, to help with the procedure.

Tuition Fee

Tuition fee for a study year is published in the price list of the University of Ljubljana on the website **http://www.uni-lj.si**.

Candidates from the EU, Bosnia and Herzegovina, Montenegro, FYR Macedonia, and Serbia are exempt from full-time study tuition fees.

The tuition fee for the second-cycle Master's study is paid by the part-time study candidates, citizens of non-member countries and full-time study candidates (citizens of Slovenia and EU members) who have already obtained equivalent education (e.g. university education acquired in the Slovenia based on previous university study programmes or equivalent obtained abroad).

Scholarships

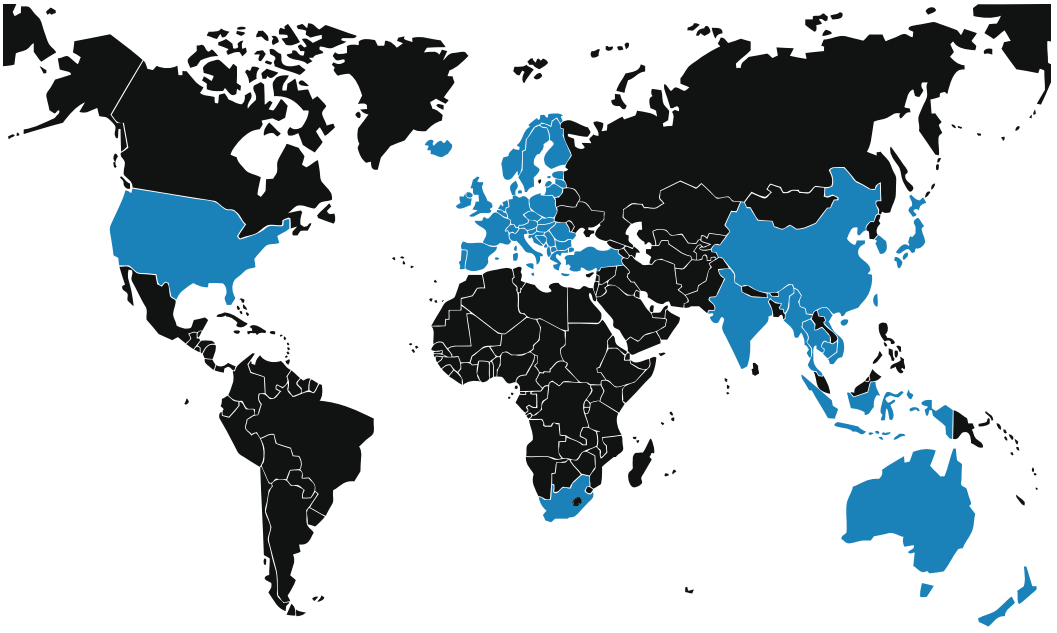
The Slovene Human Resources Development and Scholarships Fund offers a certain number of scholarships each year for foreign students who are not Slovenians, those from Slovenian national minorities and for Slovenians across the world.
www.sklad-kadri.si/en

Tuition Language

Compulsory courses in Master's programme Computer and Information Science and selected specialist elective courses are conducted in Slovene and in English. The updated list of courses in English is available on the website:
http://www.fri.uni-lj.si/en/courses

International Connections

A step into the unknown, an invaluable life experience, an opportunity for new acquaintances, expanding horizon, gaining new knowledge – all this and much more is within the reach of your hand with study exchange programmes. Students who fulfilled part of their study obligations abroad have diverse experience, but all agree that the semester spent abroad was one of the best in their life.
Students can opt for a student exchange or practical training through various international programmes. The Master's programme in Computer and Information Science in cooperation with the Technical University of Graz even provides double degree study and two diplomas, whereas the interdisciplinary study of Cognitive Science requires students to spend at least one semester abroad at one of the partner universities.



Map of the countries we collaborate with:

Albania • Australia • Austria • Belgium • Bosnia and Herzegovina • Bulgaria • Cambodia • China • Croatia • Czech Republic • Denmark • Estonia • Finland • France • Germany • Greece • Hungary • India • Indonesia • Ireland • Island • Italy • Japan • Kosovo • Latvia • Liechtenstein • Lithuania • Luxembourg • Malta • Montenegro • Myanmar • Netherlands • New Zeland • Norway • Poland • Portugal • Republic of Cyprus • Republic of Macedonia • Romania • Serbia • Slovakia • South Africa • South Korea • Spain • Sweden • Switzerland • Thailand • Turkey • United Kingdom • United States of America • Vietnam

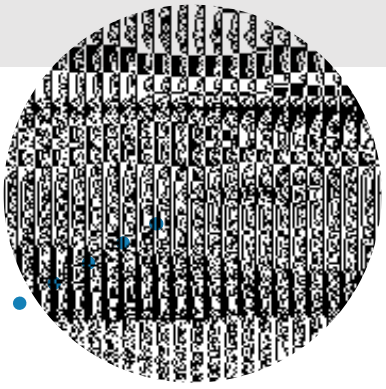
Elective Courses Taught by Jure Leskovec, PhD., from Stanford University

First-cycle and second-cycle university study gives students a special opportunity, because in the framework of general elective courses they can choose two courses taught by Jure Leskovec, PhD., at the prestigious Stanford University. These are *Analysis of Networks* and *Mining Massive Datasets*. The latter can be selected also by students of doctoral study.

The *Analysis of Networks* deals with the practical approaches to analysis and understanding extremely large (social) networks based on various models of their set-up and development. The *Mining Massive Datasets* studies the machine learning algorithms, allowing processing of a vast quantity of data and used to derive knowledge and laws from data.

MARINKA ŽITNIK, PhD

The international exchange is an excellent opportunity for a student to expand his/her horizon, for networking with peers from other cultures, learning about new fields of research and in general establishing connections outside the comfortable domestic environment. During the study I made several research visits to the University of Toronto, the Imperial College in London, the Baylor College of Medicine in Houston, and Stanford University. The Faculty of Computer and Information Science has always offered me extremely sound support, for which I am grateful. In my case, the Bioinformatics Laboratory played a particularly important role. I started cooperating with it while still an undergraduate, as Prof. Blaž Zupan, PhD., opened the door for me to many research institutions. I believe that the exchanges have enriched my perspective of the world. I therefore always strive to share my experience and enthusiasm of research with the environment that I return to.

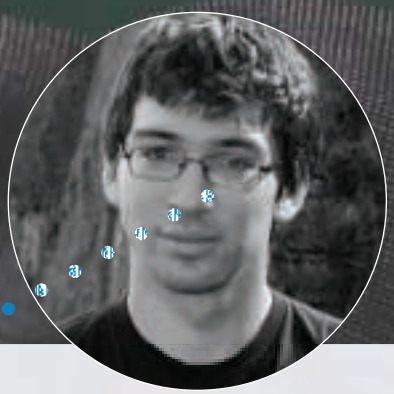


DUŠAN KALANJ, student of the Master's programme Computer and Information Science

When I was leaving for the exchange in Denmark in the first year of my Master's study, I was not sure what to expect. I only wanted to experience independent life in a different environment. Six months later I realised that my wishes had been much too modest. I had the best experience of my life, which drastically changed my habits and my view of the future. I returned home with an insatiable appetite for life, craving new knowledge and experience. Now I make plans for the time until my departure for Erasmus practical training, because I realise that this could change everything.

Study and the Economy

The Faculty is engaged in scientific research, but it also cooperates with the business world, which is important for gaining new knowledge and experience from the economy, scholarship opportunities, and employment of our students later in life. In addition to various types of guest lectures performed at the Faculty, companies also offer advanced programming challenges, paid practical training, etc.



MITJA TRAMPUŠ,
PhD, Twitter

As a computer expert I had at my disposal insanely good opportunity for practical work during studies: On Facebook I taught the computer how to find the right profile from a multitude of profiles with the same name. On Twitter I taught it how to identify a tweeted topic (e.g. sports, food, politics, etc.) and on Google how to determine the right meaning of words with multiple meanings (e.g. “bat”). All this happened during my post-graduate study, but the majority of fellow student-trainees were undergraduate students. All companies overindulged us, paid us well and taught us a lot, not to mention the cultural experience. There are few industries where companies are so eager to attract employees.

Experts' Practical Lectures

The Faculty hosts monthly or more frequent guest lectures directly related to the economy and designed for additional education of students and employees. The lectures are public, featuring experts from various companies and institutions, who present the challenges that the companies come across every day.

Up to the Nose in Mud comprises monthly guest lectures on industry technologies for everyone that wishes to sink their teeth deeper into modern (computer) technologies. They are suitable for undergraduate and postgraduate students and feature lecturers from the corporate sector who want to share their ecperience with the upcoming generation of experts.

Student Challenges

The Faculty has been preparing programming challenges in cooperation with the corporate sector. Students become involved in research in practice. They can take up challenges of the companies Comtrade, Nil, Celtra, Zemanta, and Xitaso.

UL FRI Alumni Society

The members of the UL FRI Alumni Society are faculty graduates and teachers, striving for post-study personal and professional development of the FRI graduates. The Society promotes cooperation between business partners, the Faculty and students, also offering scholarships. By preserving mutual relations and commitment to the profession, the Society contributes to the development of the academic and economic community.

Project Work in Laboratories

The Faculty enables its students to work on projects in laboratories. The Faculty hosts many laboratories, which in the scope of various domestic and foreign international projects develop new methods and knowledge in all fields of computer science, also in cooperation with the corporate sector and foreign institutions. The laboratories are also included in the “Creative Path to Practical Knowledge” project, enabling them to develop competencies, and gain practical knowledge and experience in cooperation with the corporate sector.

MATEVŽ ČERNE,

student of the Master's programme

The FRI is much more than just a faculty, recently it has been evolving into a community of students and professors. Students can become involved in numerous activities in individual laboratories or societies operating in the framework of the Faculty. For two years I chaired the Students' Council and I was a member of the students' organisation. During this time I gained vast soft skills that opened the door for me to the business world.

Extracurricular Activities

International Competitions

Anyone striving for additional knowledge and wanting to compete against peers from abroad may participate in various international competitions. Besides the knowledge and information received during study, they have an opportunity to test their abilities at an international level.

Robo League

FRI Robo League is a University mobile robotics competition, which is every year attended by an ever higher number of students. The competing teams hva official training sessions where they gather qualification points. Preliminary teams are formed based on these results, competing against each other in knock-out competitions.

Study Field Trips

For some years now, a group of FRI students goes on a field trip to the USA in the spring, lasting several weeks. They travel from the Eastern and Southern to the Western Coast of the USA, to the heart of computer development – Silicon Valley and its surroundings, where they learn about the daily routine of computer enthusiasts. Students usually visit some of the most famous and renowned corporations, such as Google and Facebook, and some prestigious universities.

Cooperation with Secondary Schools

In the scope of the courses *Computer Science in Practice* and *Extracurricular Professional Activities*, students can participate in secondary school extra-curricular activities, thus winning credit points by teaching programming and popularising computer science among secondary-school students.

International Summer Schools

International summer schools are designed for both the FRI students and the students of other faculties who wish to upgrade their computer knowledge. They are mentored by domestic and foreign experts.

Tutorship

The purpose of tutorship is to facilitate students' integration in the academic environment, guide them through the academic process, advise them on issues they come across and in that way improve the quality of the study.

FRI Singing Choir and Band

The Faculty of Computer and Information Science established the Faculty band and signing choir, joined under the name of FRIdom Music Group. Informal socialising with singing and playing brings together all those employees and students who in addition to computer science also enjoy signing or playing an instrument.

FE and FRI Sports Society

The society was established in 1998. Throughout the study year it organises numerous sports activities and trips, such as skiing, cycling, mountaineering, and kayaking trips as well as annual rafting and surfing. Weekly recreation is organised in the sports hall in Rožna dolina, where students can play basketball, volleyball, football, or work out in the fitness studio. The society also organises basketball and soccer matches. The Faculty has a men's and women's volleyball team, which participate in competitions in the scope of the University Volleyball League. The Faculty provides sports disciplines for everyone.

Career Path

According to Forbes magazine, the highest number of jobs in 2015 was created in the software development profession, the most employable being database administrator and data scientist. The high demand for human resources educated in computer science is expected also in the next decade. The European Commision estimates a shortfall of nearly 900,000 experts in information-communication technologies by 2020 in Europe and computer literacy is one of the major criteria for getting a job.

Chief Information Officer

A chief information officer or CIO is responsible for the functioning of the information system according to the needs and goals of the business system. A CIO deals both with technology and organisation, human resources, and finance.

System Architect

A system architect produces the information solution architecture tailored to the clients' wishes in terms of efficiency, expandability, transferability, connectivity, etc.

Robotics Engineer

A robotics engineer develops robots for everyday use, for instance the iRobot Roomba, as well as specialised mobile robots for search under ruins, avalanches, and minefields.

Artificial Intelligence Expert

This expert programmes computers to simulate human thinking. He/She develops search algorithms, speech commands, facial identification, fastest route calculation and medical diagnostics for new generations of advanced technologies.

Development Manager

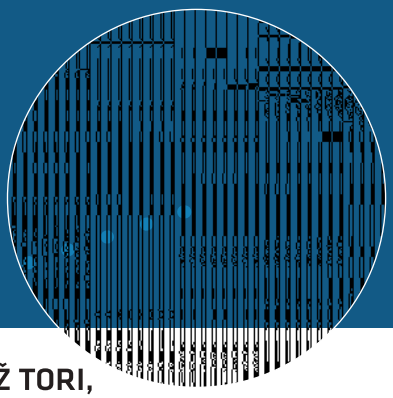
A development manager sees to the technological development of a company or organisation according to a long-term strategy. He/She coordinates development teams, creates new products and designs innovative solutions.

E-Training Designer

An e-training designer uses the knowledge of modern technologies and the understanding of educational processes to develop and support e-learning, such as on-line courses, as well as designs didactic e-material for various platforms.

Data Analyst

With the knowledge of data analysis and amoeba observation a data analyst can develop a new antibiotic, use the data on customers to double the profit or resolve the economic crisis with international banking transactions.



ANDRAŽ TORI,
founder and CTO at Zemanta

My passion for computer science was the reason that I enrolled in the computer and information science study. Throughout the study I had been using computer knowledge in many ways – in the non-government sector, as activist and entrepreneur. It is important that students learn about the wild world out there, which is why Zemanta strives to cooperate with the Faculty so that students would develop broad-mindedness and gain opportunities in the future. We take part in the Student Challenge and Up to the Neck in Mud lectures. We started at the ankles, continued at the knees, waist and neck, and this year we are already up to the ears in (industrial) mud. Read more at: **http://meetup.com/vblatu**

IZA LOGIN,
CEO and co-founder of Outfit 7, the creator of Talking Friends

When we were students at the FRI, Samo and I created the first multimedia application for children in 1996. At that time, that was a considerable technological challenge and a lot of fun. Later we pursued our careers in different companies, where we upgraded our professional and management skills. In 2009, Samo decided to establish a mobile application company and invited me and six other colleagues to join. We decided to develop entertaining applications for children, which was a wish of mine from 15 years back. Our work has considerably expanded and covers the development of diverse applications (cartoons, film, tangible products, music ...). We hired top experts from Slovenia and abroad in the fields that we were inexperienced in.


is the index of the leftmost element
ht is the index of the rightmost element
nber of element in subarray = right - left + 1
tition (array, left, right)
pivotIndex = choosePivot (array, left, right)
pivotValue = array[pivotIndex]
swap array[pivotIndex] and array[right]
storeIndex = left
for i from left to right - 1
if array[i] < pivotValue
swap (array[i], array[storeIndex]); storeIndex++
swap(array[storeIndex], array[right])
return storeIndex

3rd cycle

Doctoral Study Programme Computer and Information Science

The study is aimed at deepening the knowledge of computer science and practising research work. It is recommended both to students who plan to pursue an academic career as well as those who will perform more demanding research and innovation work in the computer industry. The study is conducted solely in the English language. In addition, the Faculty participates in the interdisciplinary doctoral programme Biosciences offered jointly with three other faculties of the University of Ljubljana.

MATEVŽ PESEK, doctoral student

A computer science engineer must be an expert in two fields: in his or her own and in the field of the task assumed. Doctoral study enables me to work during the day on ideas that I dream about at night. Research, which is an essential component of doctoral studies, is appealing not only because of the approach to the unknown, but it is also personally fulfilling, because I grow and am becoming a better man as I achieve research progress.

Useful Information

Residence Permits for the Republic of Slovenia

EU citizens do not need a permit (visa) to enter the Republic of Slovenia; they can enter with a valid identity card or valid passport regardless of their purpose of stay. For all stays less than three months, these citizens do not have to register their place of residence; they only need to register at the competent police station within three days of crossing the country border. If they want to stay longer than three months, they have to register their place of residence at their local administrative unit.

Foreign citizens from countries that are not EU Member States coming for study, specialisation, professional improvement or practical training purposes, will be issues visas or temporary residence permits. Foreign citizens who do not need visas, because they are citizens of a country tat Slovenia does not have a visa arrangement with, can enter with valid passport and can stay in Slovenia for 90 days within six months.

Enrolment Number and Citizen Number (EMŠO)

All exchange students receive their enrolment number and citizen number (Unique Master Citizen Number or EMŠO) upon arrival at the International Exchange Coordinator`s Office.

Housing in Ljubljana

Information on renting rooms or flats is available at the following address:

ŠOU – University Student Organisation (www.svetovalnica.com/sobe)

The office for International Students operating within the framework of the ŠOU is headquartered at Vojkova ulica 63, 1000 Ljubljana. General information on student life in Ljubljana is available to foreign students.

Student Halls of Residence

Slovenes without a Slovene citizenship who are recipients of a Republic of Slovenia scholarship (the Slovene Human Resources and Scholarship Fund) can apply for a room in one of the student halls of residence (**http://www.stud-dom-lj.si**). The allocation of accommodation for scholarship recipients will be conducted by the Ministry of Education, Science and Sport in collaboration with scholarship providers. Recipients of Ministry Scholarships shall be charged subsidised rent. The Ministry or the scholarship provider shall pay the rent directly to the student hall of residence out of the allotted scholarship. Unfortunately, accommodation in Student halls of residence is not available to other foreign students not participating in the CEEPUS or ERASMUS+ programmes.

Where to Eat?

During they stay in Ljubljana, students are entitled to food subventions (equal to 2.63€) for the majority of Ljubljana`s restaurants. The additional fee they need to pay varies, from 0.50€ to 4.37€ (as well as the quality of the food and service offered in the restaurants).

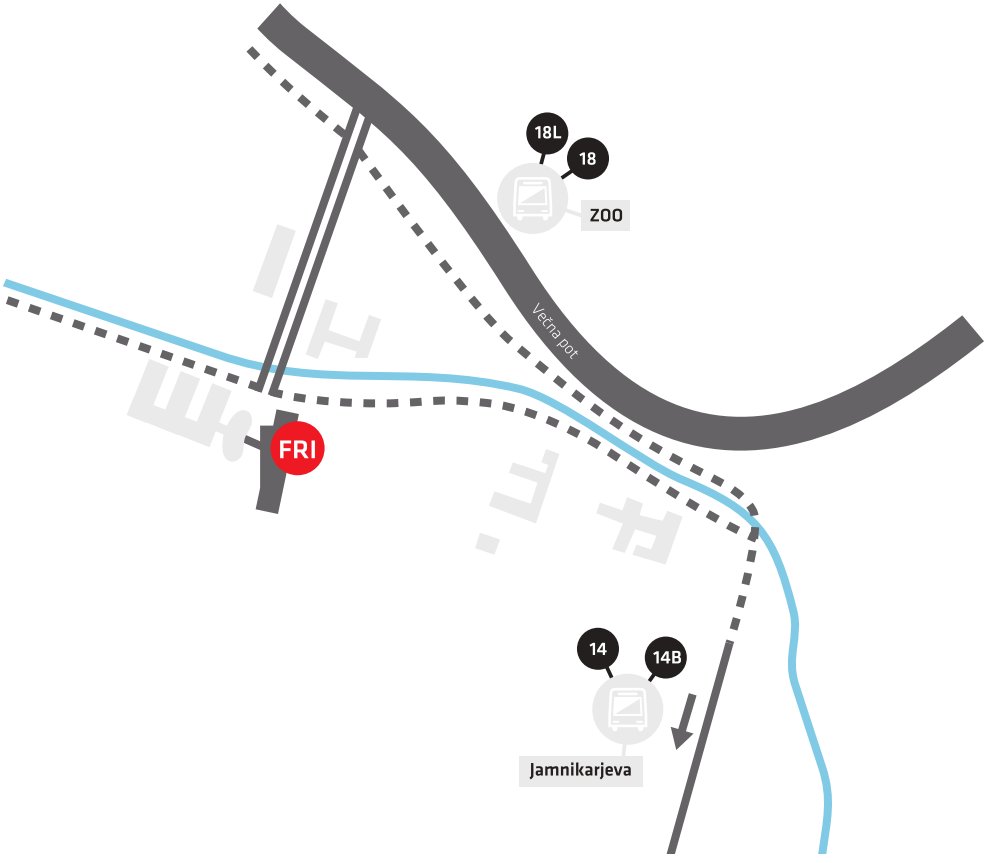
How to Get Around?

The most useful and cheapest form of transportation are buses. There are monthly student tickets available for 20€.

photo: D. Wedam/Turizem Ljubljana

The Faculty of Computer and Information Science is located in a pleasant environment next to the Rožnik hill. The area has been evolving into a hub that will connect students, researchers and other technology and natural science personnel.

The Faculty can be reached by the buses Nos. 14, 14B, 18 and 18L. Leading to the Faculty are also a nice cycle track and a walking trail.



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Alumni klub FRI