University American College Skopje

SCHOOL OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

WHO ARE WE?

The School of Computer Science and Information Technology at University American College Skopje is the leading school in North Macedonia in advanced computer sciences and in the area of brain-computer interface and devices operated by using signals from the human brain.

Founded in 2006, UACS SCSIT is focused on delivering excellence in education to all students and introducing them to the local and international business world. Our students have gone on to working in highly esteemed posts in the IT industry and continue to disseminate and build upon the knowledge acquired at UACS SCSIT.

UACS SCSIT holds first place in North Macedonia in the number of scientific paper paid downloads online. More than 1400 computer engineers from the prestigious Association for Computing Machinery, ACM, have downloaded the papers. Also, papers from UACS SCSIT authors are well received in the Institute for Electronics and Electrical Engineering – IEEE – which is the largest organization of its kind worldwide – more than 2100 full text views. Furthermore, Research gate records that UACS SCSIT has a paper published in October with more than 500 views or requests for reading as well. The CNV flip-flop paradigm was introduced worldwide as a scientific paradigm by Adrijan Bozinovski, a member of the UACS SCSIT staff, in 2005. He also achieved the worldwide first control of a robotic arm using that paradigm in 2009.

UACS SCSIT is globally recognized, and many of its students work in companies based in Switzerland, Malta, the Netherlands, South Africa, Australia or freelance around the world. UACS SCSIT is the only school in North Macedonia that offers effective part-time studying.

WHAT DO WE STAND FOR?

The undergraduate and graduate courses at UACS SCSIT are taught by well-known professionals from the IT business community, providing high-quality education and world-class state-of-the-art work experience.

Strongly dedicated to research and innovation, in the past few years, UACS SCSIT faculty and students have published more than 20 scientific and research papers in international journals. Two of those papers have received an impact factor, and for one of them, UACS SCSIT has been awarded a certificate from the Ministry of Education and Science of the Republic of North Macedonia. Additionally, at least two papers have been accepted and published by Springer Publishing.

Management of Information Systems, one of our study programs concentrations, is accredited as business related by the Accreditation Council for Business Schools and Programs – ACBSP, in the USA, which is unique in the country. This accreditation ensures that the UACS SCSIT degree is recognized and approved in the USA, Europe and Australia.

ACBSP
ACCREDITED

The American Accreditation Council for Business Schools and Programs ACBSP

Austria, Australia, Norway, Slovenia and other countries have granted scholarships to UACS SCSIT students willing to pursue their Master degrees at their state universities. So far, based on the diploma from SCSIT, a couple of master degrees were awarded in Australia and Norway, as well as a doctoral PHD degree in Germany based on our Master diploma.

OUR FACULTY

UACS SCSIT professors and associates work closely with the students. They pay attention to each student individually, in order to develop their talents and to offer guidance in the areas of study they have the highest potential. UACS SCSIT regularly engages professors or experts who have completed their educational process or currently work in other European countries and in the USA. Therefore, the students can also gain more experience and establish professional networks with institutions outside North Macedonia.

Apart from their teaching and research activities, some of UACS SCSIT teaching faculty also hold managerial positions in various IT companies in North Macedonia. They regularly participate in international scientific and research conferences and projects, and they are currently working on projects in Europe and the USA.

The student/teacher ratio at UACS SCSIT is less than 10:1, which indicates and guarantees individual attention to each student. The professor-academic paper index is 2.22, and we are constantly working on its improvement.

OUR PROFESSORS

- Prof. Veno Pachovski, PhD
- Prof. Adrijan Bozhinovski, PhD
- Prof. Irena Stojmenovska, PhD
- Prof. Goce Gavrilov, PhD
- Prof. Ivan Petrov, PhD
- Prof. Ognen Firfov, PhD
- Prof. Stojan Kitanov, PhD
- Prof. Simon Bojadjievski, PhD
- Prof. Marija Stanojeska, PhD
- Prof. Vasil Hadji Jordanov, MSc, PhD candidate
- Prof. Viktor Denkovski, MSc, PhD candidate
- Prof. Natasa Anastasova-Bojadjievska, MSc, PhD candidate
- Ognen Spiroski, MSc
- Bojan Bogdanovski, MSc
- Dejan Mitov

GIVING BACK TO THE COMMUNITY

Our programs also nurture social responsibility in candidates, inviting them to respect the community they live in by being responsible members of society. This is why UACS organizes plenty of socially responsible events and project in which they are actively involved.

EMPLOYMENT POSSIBILITIES

The possibilities for employment in the world's fastest growing industry are unlimited. Some of the career opportunities in North Macedonia and abroad that require IT qualifications are:

- IT engineers
- Programmers, system maintenance and system administration personal, application development in IT companies
- Software development in domestic or foreign companies
- Start-up business opportunity in the IT industry

Over 90% of UACS SCSIT students are employed upon graduation.

TITLE AND DEGREE EARNED UPON GRADUATION

Upon completion of the three-year undergraduate study program (180 ECTS credits), the students earn the degree of:

BSc in computer science - concentration in Software Engineering
BSc in computer science - concentration in Robotics, Artificial intelligence and signal processing
BSc in computer science - concentration in Management of Information Systems
BSc in computer science - concentration in Computer Networks
BSc in computer science - concentration in IT Management

Upon completion of the graduate study program (120 ECTS, total of 300 ECTS), the students earn the degree of:

MSc in computer science - concentration in Software Engineering
MSc in computer science - concentration in Robotics, Artificial intelligence and signal processing
MSc in computer science - concentration in Management of Information Systems and Technologies

OUR ACADEMIC PROGRAMS

The School of Computer Science and Information Technology offers ambitious and innovative study programs, covering latest technologies, thus preparing its students for building a successful career in any IT company, continue to Master study at any University (foreign or domestic) or even start their own IT businesses (companies). SCT offers the following concentrations:

- Software Engineering
- Robotics, Artificial intelligence and signal processing
- Management of Information Systems
- Computer Networks
- IT Management

EXPECTED LEARNING OUTCOMES UPON GRADUATION:

Upon completion of UACS SCSIT undergraduate studies, each student is expected to acquire the following skills and competencies:

- Languages and technologies like C++, Java, C#, SQL, Delphi (Lazarus), ASP.NET, PHP, JQuery, HTML, XML, Android, Linux, MS SQL, MySQL, Maya etc.
- Knowledge in the area of Software Engineering, computer systems architecture, system applications and programs.
- Thorough command of Microsoft Office tools, European level of literacy (e-Citizen), according to the legislative regulation in NM.
- Improved command of the English language.

Titles of some of our graduation thesis presented by the students graduated 2019.

- Example of Pattern Recognition Using Python
- News application for Android
- Transforming a static HTML5/CSS3/JS website into a dynamic one using PHP and Content Management System (Online Casino Website)
- Compositing 3D Computer Generated Imagery into real-world filmed footage
- Robot Arm Movement Based on System Time – a Java Application
- Vice City FM – An 80s radio station website
- Parkolator - An example of an Android application for Google maps marking of Parking Lots
- iOS Application for Planning Everyday Activities Using SwiftUI
- Principles of Virtualization
- Voice Controlled Augmented Reality in Unity/Vuforia

OUR TEACHING PHILOSOPHY

At UACS SCSIT, the teaching process is organized on a one day-one course principle, focused on students directly. The students work in small groups of up to 35 students for lectures where no computers are included, and up to 25 students for lectures or laboratory exercises if they are expected to work on computers. As a result, the students have much greater opportunities for personal development and self-improvement.

The students use Moodle, an online learning platform which is standard in world class education and is used by over 80% of world universities. This solution provides students 24/7 access to teaching materials, lectures, presentations, templates for projects, etc.

Although Software engineering is the first choice for a study program, the UACS SCSIT studies also prepare and help students to focus on advanced areas of information technology and science, such as:

- Robotics, Artificial Intelligence and Signal Processing
- Bioinformatics
- Databases
- Language processing
- Finite automata

The lectures are conducted in English, using contemporary textbooks and teaching materials from world renowned universities. UACS SCSIT faculty uses various teaching methods, as well as case studies and practical application of theory. Students are also encouraged to be included in research teams that publish papers on conferences like CiiT, ICT Innovations and such, thus getting further recognition of their work.

The curriculum is designed to stimulate individual work and teamwork, as well as foster development of soft skills. In every course, students are encouraged and required to create homework, work on projects and present results in front of their colleagues and teaching personnel. Providing students with a variety of elective courses, we help them find their way through the studies towards professional life, and enable them to build successful careers based on their strengths and interests. Students are also encouraged to develop and improve their presentation and communication skills in English.

After the student passes successfully all required courses, there is a final challenge – graduation thesis. Based on their affinities, the students are assisted in creating their own individual projects, document them appropriately and publicly present them in front of the three-person committee.

UACS BUSINESS COUNCIL

The cooperation with the UACS Business Council is a key factor for developing staff in the field of information science. The UACS Business Council is comprised of 150 leading local companies, among which are some of the most important companies from the ICT sector. Providing adjustment of the curricula to the needs of the real IT sector, the UACS Business Council is an additional opportunity for career development of the UACS candidates.

UNDERGRADUATE STUDY PROGRAM YEAR 1

	MANDATORY COURSES	ELECTIVES AT STUDY PROGRAM LEVEL	ELECTIVES AT UNI LEVEL
SOFTWARE ENGINEERING	· College Mathematics · Fundamentals of Programming · Computer systems · Elective SP · Elective UNI · Calculus · Object Programming · Elective SP · Elective SP · Elective UNI · Internship	· Thinking in algorithms · Computer ethics and responsibility · Introduction to multimedia · Business module 1 · Computer logic	· Computer applications 1 · English as Second Language 1 · Computer applications 2 · Composition 1 · World Language 1
ROBOTICS, ARTIFICIAL INTELLIGENCE AND SIGNAL PROCESSING	· College Mathematics · Fundamentals of Programming · Computer systems · Elective SP · Elective UNI · Calculus · Object Programming · Elective SP · Elective SP · Elective UNI	· Thinking in algorithms · Computer ethics and responsibility · Introduction to multimedia · Business module 1 · Computer logic	· Computer applications 1 · English as Second Language 1 · Computer applications 2 · Composition 1 · World Language 1
COMPUTER NETWORKS	· College Mathematics · Fundamentals of Programming · Computer systems · Elective SP · Elective UNI · Calculus · Object Programming · Elective SP · Elective SP · Elective UNI	· Thinking in algorithms · Computer ethics and responsibility · Introduction to multimedia · Business module 1 · Computer logic	· Computer applications 1 · English as Second Language 1 · Computer applications 2 · Composition 1 · World Language 1
MANAGEMENT OF INFORMATION SYSTEMS	· College Mathematics · Fundamentals of Programming · Computer systems · Elective SP · Elective UNI · Calculus · Object Programming · Business module 1 · Elective SP · Elective UNI	· Thinking in algorithms · Computer ethics and responsibility · Introduction to multimedia · Computer logic	· Computer applications 1 · English as Second Language 1 · Computer applications 2 · Composition 1 · World Language 1
INFORMATION TECHNOLOGIES AND MANAGEMENT	· College Mathematics · Fundamentals of Programming · Computer systems · Elective SP · Elective UNI · Calculus · Object Programming · Business module 1 · Elective SP · Elective UNI · Internship	· Thinking in algorithms · Computer ethics and responsibility · Introduction to multimedia · Computer logic	· Computer applications 1 · English as Second Language 1 · Computer applications 2 · Composition 1 · World Language 1

UNDERGRADUATE STUDY PROGRAM YEAR 2

	MANDATORY COURSES	ELECTIVES AT STUDY PROGRAM LEVEL	ELECTIVES AT UNI LEVEL
SOFTWARE ENGINEERING	· Data structures and algorithms · Operating systems · Computer networks · Programming Languages · Elective UNI · Software engineering · Databases · Elective SP · Programming computer interface · Elective SP · Internship	· Network technologies and administration · System software · Business Module 2 · Advanced calculus	· Introduction to e-business · Computer graphics and animation · World language 2
ROBOTICS, ARTIFICIAL INTELLIGENCE AND SIGNAL PROCESSING	· Data structures and algorithms · Operating systems · Computer networks · Programming Languages · Elective UNI · Software engineering · Elective SP · Elective SP · Programming computer interface · Digital logic and design of computer systems · Internship	· Databases · System Software · Network technologies and administration · Interactive computer animations · Business module 2 · Advanced calculus	· Introduction to e-business · Computer graphics and animation · World language 2
COMPUTER NETWORKS	· Data structures and algorithms · Operating systems · Computer networks · Programming Languages · Elective UNI · Network technologies and administration · Databases · System Software · Programming computer interface · Elective SP	· Software engineering · Business Module 2 · Advanced calculus	· Introduction to e-business · Computer graphics and animation · World language 2
MANAGEMENT OF INFORMATION SYSTEMS	· Data structures and algorithms · Operating systems · Computer networks · Programming Languages · Elective UNI · Software engineering · Databases · Elective SP · Elective SP · Elective SP	· Network technologies and administration · System software · Business Module 2 · Advanced calculus · Programming computer interface	· Introduction to e-business · Computer graphics and animation · World language 2
INFORMATION TECHNOLOGIES AND MANAGEMENT	· Data structures and algorithms · Operating systems · Computer networks · Elective SP · Elective UNI · Business Module 2 · Databases · Elective SP · Elective SP · Elective SP	· Introduction to e-business · Programming Languages · Network technologies and administration · System software · Software engineering · Advanced calculus	· Computer graphics and animation · World language 2

UNDERGRADUATE STUDY PROGRAM YEAR 3

	MANDATORY COURSES	ELECTIVES AT STUDY PROGRAM LEVEL
SOFTWARE ENGINEERING	· Architecture and design of computer systems · Internet programming · Distributed databases · Elective SP · Elective SP · Internet services · Elective SP · Elective SP · Baccalaureate project · Internship	· Data security · Fundamentals of signal processing · Multimedia systems and technologies · Software development · Information systems · Robotics and artificial intelligence · Telecommunication systems for data transfer · Business Module 3
ROBOTICS, ARTIFICIAL INTELLIGENCE AND SIGNAL PROCESSING	· Fundamentals of signal processing · Process computers · Elective SP · Elective SP · Elective SP · Robotics and artificial intelligence · Theory of computation, Formal languages & A · Elective SP · Elective SP · Baccalaureate project · Internship	· Distributed databases · Data security · Architecture and design of software systems · Internet programming · Multimedia systems and technologies · Software development · Information systems · Telecommunication systems for data transfer · Business Module 3
COMPUTER NETWORKS	· Architecture and design of computer networks · Data security · Elective SP · Elective SP · Elective SP · Computer networks design · Elective SP · Elective SP · Baccalaureate project · Internship	· Distributed databases · Architecture and design of software systems · Internet programming · Internet · Fundamentals of signal processing · Multimedia systems and technologies · Software development · Information systems · Computer networks administration · Robotics and artificial intelligence · Telecommunication systems for data transfer · Management of IS · Business Module 3
MANAGEMENT OF INFORMATION SYSTEMS	· Information systems · Data security · Elective SP · Elective SP · Elective SP · Management of Information Systems · Designing information systems · Elective SP · Baccalaureate project · Internship	· Distributed databases · Architecture and design of software systems · Internet · Economic management · Multimedia systems and technologies · Software Development · Human resource management · Operations and project management · Robotics and artificial intelligence · Telecommunication systems for data transfer · Financial and managerial accounting · Business Module 3
INFORMATION TECHNOLOGIES AND MANAGEMENT	· Information systems · Operations and project management · Economic management · Elective SP · Elective SP · Business Module 3 · Financial and managerial accounting · Elective SP · Baccalaureate project · Internship	· Distributed databases · Data security · Internet · Multimedia systems and technologies · Human resource management · IS Design · Management of IS

GRADUATE STUDY PROGRAM (3+1+1) YEAR I

SOFTWARE ENGINEERING	ROBOTICS AND BIOINFORMATICS	MANAGEMENT OF INFORMATION SYSTEMS AND TECHNOLOGIES

MANDATORY COURSES

- Information skills and research
- Science of programming
- Advanced database organization
- Program Level Elective
- University Level Elective
- Modern computer architectures
- Modern software system architectures
- Automatic software development
- Program Level Elective
- Program Level Elective

- Information skills and research
- Robotics
- Bioinformatics and bioengineering
- Program Level Elective
- University Level Elective
- Pattern recognition and learning
- Artificial intelligence
- Program Level Elective
- Program Level Elective
- Program Level Elective

- Information skills and research
- Advanced database organization
- Information Systems Security
- Program Level Elective
- University Level Elective
- Advanced software engineering
- Business module 4
- Security and ethics in ICT
- Program Level Elective
- Program Level Elective

PROGRAM LEVEL ELECTIVES

- Robotics
- Web design
- Parallel programming
- Bioinformatics and bioengineering
- Signal processing
- Modern operating systems
- Artificial intelligence
- Operations and project management
- Software projects management
- Advanced computer aspects of the Macedonian language
- Computer linguistics
- Graphical user interface
- Business module 4

- Advanced database organization
- Web design
- Parallel programming
- Signal processing
- Data science
- Modern software system architectures
- Modern computer architectures
- Advanced computer aspects of the Macedonian language
- Computer linguistics
- Graphical user interface
- Business module 4

- Operations and project management of Information Systems
- Web design
- Influence of new ICT on business
- Data mining and research
- Risk management
- Information economic management
- Software project management
- Modern software system architectures
- Broadband computer networks
- Graphical user interface

UNIVERSITY LEVEL ELECTIVES

- Advanced HR management
- Enterpreneurship
- Specialist thesis

- Business communication
- Enterpreneurship
- Macedonian language 1 &2
- Specialist thesis

- Advanced HR management
- Enterpreneurship
- Specialist thesis

GRADUATE STUDY PROGRAM YEAR II

SOFTWARE ENGINEERING	ROBOTICS AND BIOINFORMATICS	MANAGEMENT OF INFORMATION SYSTEMS AND TECHNOLOGIES

MANDATORY COURSES

SOFTWARE ENGINEERING	ROBOTICS AND BIOINFORMATICS	MANAGEMENT OF INFORMATION SYSTEMS AND TECHNOLOGIES
· Theory of computation	· Biomedical engineering	· Advanced management of Information Systems
· Algorithm design and analysis	· Human-robot Interaction	· E-business
· Program Level Elective	· Program Level Elective	· Program Level Elective
· Program Level Elective	· Program Level Elective	· Program Level Elective
· University Level Elective	· University Level Elective	· University Level Elective
· Program Level Elective	· Program Level Elective	· Program Level Elective
· Master's thesis	· Master's thesis	· Master's thesis

PROGRAM LEVEL ELECTIVES

SOFTWARE ENGINEERING	ROBOTICS AND BIOINFORMATICS	MANAGEMENT OF INFORMATION SYSTEMS AND TECHNOLOGIES
· Verification of software systems	· Algorithm design and analysis	· Transfer of technology
· Project management	· Theory of computation	· Project management
· Cryptography	· Cloud computing	· Advanced managerial accounting
· Information retrieval systems	· Cryptography	· Cryptography
· Computer integrated manufacturing	· Information retrieval systems	· Information retrieval systems
· Data mining	· Computer integrated manufacturing	· Managerial economics
· Artificial intelligence systems	· Data mining	· Computer integrated manufacturing
· System analysis, design and implementation	· Artificial intelligence systems	· Marketing management
· Definition of software requirements	· Biorobotics	· Financial management

UNIVERSITY LEVEL ELECTIVES

SOFTWARE ENGINEERING	ROBOTICS AND BIOINFORMATICS	MANAGEMENT OF INFORMATION SYSTEMS AND TECHNOLOGIES
· Operations research	· Operations research	· Operations research
· Leadership	· Leadership	· Leadership
· Macedonian language	· Macedonian language 3 & 4	· Macedonian language
· Macedonian as a foreign language 1		· Macedonian as a foreign language 1
· Macedonian as a foreign language 2		· Macedonian as a foreign language 2
· Macedonian as a foreign language 3		· Macedonian as a foreign language 3
· Macedonian as a foreign language 4		· Macedonian as a foreign language 4

University American College Skopje reserves the right to offer courses in a special semester
University American College Skopje reserves the right to amend the program.