

SCHOOL OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

UNDERGRADUATE AND GRADUATE STUDIES



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I. WHAT MAKES UACS SCSIT A LEADING IT SCHOOL IN MACEDONIA?

- ▶ UACS SCSIT is the leading school in Macedonia in advanced computer sciences and in the area of brain-computer interface, whereby computers are operated by using signals from the human brain.
- ▶ UACS SCSIT holds the first place in Macedonia in number of scientific paper downloads on the Internet (more than 1300 computer engineers have paid to download the paper from the prestigious computer association – Association for Computing Machinery – ACM).
- ▶ In the past two years, UACS SCSIT faculty and students have published more than 17 scientific and research papers in international journals or have presented them at conferences. Two of those papers have received an impact factor.
- ▶ UACS SCSIT has been awarded a certificate from the Ministry of Education and Science of the Republic of Macedonia for a paper published in a journal with impact factor.
- ▶ Some of the most esteemed and well-known professionals from the Macedonian business community teach undergraduate and graduate courses at UACS SCSIT.

- ▶ **A UNIQUE OPPORTUNITY IN MACEDONIA** – The concentration Management of Information Systems is accredited by the Accreditation Council for Business Schools and Programs (ACBSP) in the USA.



II. OUR FACULTY

- ▶ UACS SCSIT professors and associates work closely with the students in order to pay attention to each student individually, to develop their talents and to offer guidance about the area of study they like the most.
- ▶ UACS SCSIT regularly engages professors or experts who have completed their educational process and/or currently work in other European countries and in the USA. Therefore, the students can gain more experience and establish professional networks with institutions outside Macedonia.
- ▶ Apart from their teaching and research activities, UACS SCSIT faculty also hold managerial positions in the IT Association of the Republic of Macedonia. Therefore, they organize symposia and other activities related to the promotion and development of the information technology in Macedonia. They regularly participate in international scientific and research projects, and they are currently working on projects in Europe and the USA.
- ▶ The student/teacher ratio at UACS SCSIT is 10:1, a ratio that indicates individual attention to each student.
- ▶ The professor-academic paper index is 2.22.



III. OUR TEACHING PHILOSOPHY

At UACS SCSIT, the teaching process is focused towards each of the students. The students work in small groups, which provides them with the possibility to communicate directly with their professors. Therefore, they have opportunities for personal development and self-improvement.

UACS SCSIT studies focus on the advanced areas of information technology and science, such as:

- ▶ Robotics
- ▶ Biomedical engineering
- ▶ Biosignal processing
- ▶ Databases
- ▶ Language processing

The lectures are conducted in English language, by using contemporary textbooks and teaching materials from renowned universities. Moreover, UACS SCSIT faculty uses various teaching methods, as case studies and practical application of theory. Students are also encouraged to develop their presentation skills and improve their professional communication skills in English. We also emphasize the importance of teamwork, group work and experience sharing.

IV. COOPERATION WITH THE 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 Macedonian companies, among which are some of the most important companies from the ICT sector.

UACS SCSIT Business Council provides:

- ▶ Adjustment of the curricula to the needs of the real sector;
- ▶ Guest lecturers;
- ▶ Internships for our students;
- ▶ Counseling for possible career opportunities and student recruitment upon graduation.

V. ADVANTAGES OF THE PROGRAM

At the end of their studies, for the purpose of obtaining a Bachelor of Science degree, each student prepares and submits a Graduation thesis.

The professors pay particular attention to their work, and they also guide them throughout the entire process. The prepared and defended Graduation thesis significantly helps the UACS SCSIT students get employed in the IT sector and build a successful career.

UACS SCSIT is globally recognized, since many of its students work in companies based in Switzerland, Malta, Australia, the Netherlands, South Africa, or freelance in many other countries in the world.

Austria, Australia, Norway, Slovenia and other countries are granting scholarships to the UACS SCSIT students willing to pursue their Master degrees at their state universities.

EMPLOYMENT POSSIBILITIES

The possibilities for employment in the world's fastest growing industry are limitless! Part of the career opportunities that require IT qualifications include:

- ▶ IT engineers;
- ▶ Programmers, system maintenance, application development in IT companies in Macedonia and abroad;
- ▶ Software development in domestic or foreign companies;
- ▶ Start-up business opportunity in the IT industry.

90% of UACS SCSIT students
are employed
upon graduation!



VI. CARE FOR THE COMMUNITY

UACS students learn a lot about their field of study. They are also encouraged to be respectable and responsible members of the communities they live in. This is why we have organized many socially responsible events and projects. Some of them are the following:

- ▶ 2015 – Charity Christmas sale of handmade Christmas ornaments, home cooked meals and drinks by UACS students
- ▶ 2015 – “Thankful hearts, helping hands” charity event organized by Erasmus Student Network Macedonia and UACS Student Organization in honor of Thanksgiving Day 2015. It was aimed for providing socially deprived families in Skopje with food, clothes and shoes for the upcoming winter months.



VII. UNDERGRADUATE PROGRAMS AND CONCENTRATIONS

The curriculum is designed in a way that stimulates individual work and teamwork. Upon completion of UACS SCSIT undergraduate studies, each student is expected to acquire the following skills and knowledge:

- ▶ Technologies like C++, Java, C#, ASP.NET, PHP, JQuery, HTML, XML, SQL, Linux, etc.
- ▶ Knowledge in the area of Software Engineering, computer system architecture, system applications and programs.
- ▶ Thorough knowledge of Microsoft Office tools, especially of the European level of literacy (e-Citizen), according to the legislative regulation in Macedonia.
- ▶ Improved knowledge of the English language.

UNDERGRADUATE STUDY PROGRAM TITLE AND DEGREE EARNED UPON GRADUATION AT UACS SBEM

Bachelor of Science (180 ECTS) – Major: Software Engineering, Computer Networks, Management of Information Systems or IT Management

UNDERGRADUATE STUDY PROGRAM

Year I (Total ECTS: 62)			
Software Engineering – Required courses:	Computer Networks – Required courses:	Management of Information Systems – Required courses:	IT Management – Required courses:
Mathematics	Mathematics	Mathematics	Mathematics
Introduction to Programming	Introduction to Programming	Introduction to Programming	Introduction to Programming
Computer Applications 1	Computer Applications 1	Computer Applications 1	Computer Applications 1
Calculus	Calculus	Calculus	Calculus
Object Programming	Object Programming	Business Module 1	Business Module 1
Computer Systems	Computer Systems	Computer Systems	Computer Systems
Internship	Internship	Internship	Internship
Elective courses in Software Engineering– students choose 2 of the following courses:	Elective courses in Computer Networks – students choose 2 of the following courses:	Elective courses in Management of Information Systems – students choose 2 of the following courses:	Elective courses in IT Management – students choose 2 of the following courses:
Computer Ethics and Responsibility	Computer Ethics and Responsibility	Computer Ethics and Responsibility	Computer Ethics and Responsibility
Introduction to Multimedia	Introduction to Multimedia	Introduction to Multimedia	Introduction to Multimedia
Business Module 1	Business Module 1	Object Programming	Object Programming
Elective courses at university level in Software Engineering – students choose 2 of the following courses:	Elective courses at university level in Computer Networks – students choose 2 of the following courses:	Elective courses at university level in Management of Information Systems – students choose 2 of the following courses:	Elective courses at university level in IT Management – students choose 2 of the following courses:
Computer Applications 2	Computer Applications 2	Computer Applications 2	Computer Applications 2
Composition 1	Composition 1	Composition 1	Composition 1
Composition 2	Composition 2	Composition 2	Composition 2

Year II (Total ECTS: 62)			
Software Engineering – Required courses:	Computer Networks – Required courses:	Management of Information Systems – Required courses:	IT Management – Required courses:
Operating Systems	Operating Systems	Operating Systems	Operating Systems
Computer Networks	Computer Networks	Computer Networks	Computer Networks
Programming Languages	Programming Languages	System Software	System Software
Software Engineering	Network Technologies and Administration	Software Engineering	Software Engineering
Databases	System Software	Databases	Databases
Network Programming	Network Programming	Business Module 2	Business Module 2
Internship	Internship	Internship	Internship
Elective courses in Software Engineering – students choose 4 of the following courses:	Elective courses in Computer Networks – students choose 4 of the following courses:	Elective courses in Management of Information Systems – students choose 4 of the following courses:	Elective courses in IT Management – students choose 4 of the following courses:
Network Technologies and Administration	System Software	Network Technologies and Administration	Network Technologies and Administration
Business Module 2	Business Module 2	Network Programming	Network Programming
Data Structures and Algorithms	Data Structures and Algorithms	Data Structures and Algorithms	Data Structures and Algorithms
System Software	Databases	Programming Languages	Programming Languages
Introduction to E-Business	Introduction to E-Business	Introduction to E-Business	Introduction to E-Business
Numerical Analysis	Numerical Analysis	Numerical Analysis	Numerical Analysis
Computer Graphics and Animation	Computer Graphics and Animation	Computer Graphics and Animation	Computer Graphics and Animation

Year III (Total ECTS: 62)			
Software Engineering – Required courses	Computer Networks – Required courses	Management of Information Systems – Required courses	IT Management – Required courses
Internet Programming	Architectures of Computer Networks	Information Systems	Information Systems
Distributed Databases	Data Security	Economic Management	Operation and Project Management
Software Development	Information Systems	Management of Information Systems	Information Systems Security
Baccalaureate Project	Baccalaureate Project	Business Module 3	Business Module 3
Internship	Internship	Baccalaureate Project	Baccalaureate Project
		Internship	Internship
Elective Courses in Software Engineering – Students choose 4 of the following courses:	Elective Courses in Computer Networks – Students choose 4 of the following courses:	Elective Courses in Management of Information Systems – Students choose 3 of the following courses:	Elective Courses in IT Management – Students choose 3 of the following courses:
Software Systems Architecture and Design	Internet	Internet	Internet
Internet Services	Internet Services	Financial and Managerial Accounting	Financial and Managerial Accounting
Business Module 3	Business Module 3	Distributed Databases	Information and Economy Management
Data Security	Information Systems in Organizations	Data Security	Information Systems in Organizations
Multimedia Systems and Technologies	Multimedia Systems and Technologies	Information Systems in Organizations	Information Retrieval Systems
Telecommunication Systems for Data Transfer	Telecommunication Systems for Data Transfer	Human Resource Management	Human Resource Management
Robotics and Artificial Intelligence	Robotics and Artificial Intelligence		

Total ECTS = 186

- ▶ 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

VIII. GRADUATE PROGRAMS AND CONCENTRATIONS

The curriculum is designed in a way that stimulates individual work and teamwork. Upon completion of UACS SCSIT graduate studies, each student is expected to acquire the following skills and knowledge:

- ▶ Knowledge and skills necessary to write and present a scientific paper and thesis;
- ▶ In-depth knowledge of databases set-up and operation;
- ▶ Knowledge in contemporary platforms and programming languages;
- ▶ Knowledge in signal processing and artificial intelligence;
- ▶ In-depth knowledge of computer networks and their applications;
- ▶ Knowledge in management of information systems, as well as corporate IT management skills and practices

TITLE AND DEGREE EARNED UPON GRADUATION AT UACS SBEM

Specialization degree (60 ECTS) – Specialist of Computer Science in one of the following concentrations: Software Engineering, Computer Networks, Management of Information Systems or IT Management

Master of Science degree (120 ECTS) – Master of Science in Computer Science in one of the following concentrations: Software Engineering, Computer Networks, Management of Information Systems or IT Management



GRADUATE STUDY PROGRAM

IV YEAR (Total ECTS: 62) – Specialization degree			
Software Engineering – Required courses:	Computer Networks – Required courses:	Management of Information Systems – Required courses:	IT Management – Required courses:
Science of Programming	Network Services	Advanced Databases Organization	Main Business Applications
Advanced Database Organization	Contemporary Operating Systems	Information Systems Security	Software Engineering
Contemporary Architectures of Software Systems	Broadband Computer Networks	Operations and Project Management of Information Systems	Corporate IT Strategy and Management
Automated Software Development	Computer Networks Design	Operations Research	Security and Ethics in ICT
Management of Software Projects	Computer Networks Security	Business Module 4	Business Module 4
Specialization Thesis	Specialization Thesis	Specialization Thesis	Specialization Thesis
Internship 4	Internship 4	Internship 4	Internship 4
Elective courses in Software Engineering – students choose 1 of the following courses:	Elective courses in Computer Networks – students choose 1 of the following courses:	Elective courses in Management of Information Systems – students choose 1 of the following courses:	Elective courses in IT Management – students choose 1 of the following courses:
Contemporary Computer Architectures	Operations and Project Management	Operations and Project Management	IT Business Start-up
Contemporary Operating Systems	Management of Software Projects	Information Retrieval Systems	Influence of New ICTs on Business
Operations and Project Management	Signal Processing	Information and Economy Management	Research and Data Mining
Signal Processing	Information Skills and Research	Information Skills and Research	Software Quality
Information Skills and Research			Operations and Project Management
			Information and Economy Management
			Information Skills and Research
Elective courses at University level – Students choose 1 of the following courses:	Elective courses at University level – Students choose 1 of the following courses:	Elective courses at University level – Students choose 1 of the following courses:	Elective courses at University level – Students choose 1 of the following courses:
Business Module 4	Business Module 4	Introduction to Methodology	Risk Management
Introduction to Methodology	Introduction to Methodology	Entrepreneurship	Introduction to Methodology
Entrepreneurship	Entrepreneurship		Entrepreneurship

V YEAR (TOTAL ECTS: 62)			
Software Engineering – Required courses:	Computer Networks – Required courses:	Management of Information Systems – Required courses:	IT Management – Required courses:
Theory of Computation	Wireless Computer Networks	Management of Information Systems	IT Strategy and Politics
Master Thesis	Master Thesis	Master Thesis	Master Thesis
Elective courses in Software Engineering – students choose 3 of the following courses:	Elective courses in Computer Networks – students choose 3 of the following courses:	Elective courses in Management of Information Systems – students choose 3 of the following courses:	Elective courses in IT Management – students choose 3 of the following courses:
Design and Analysis of Algorithms	Advanced Computer Networks	Transfer of Technology	Managerial Economy
Software Systems Verification	Cryptography	E-Business	Marketing Management
Cryptography	Management of Information Systems	Broadband Computer Networks	Operations and Project Management
Operations Research	Operations Research	Cryptography	Financial Management
Software Requirements Definition	Data Mining		Transfer of Technology
Information Retrieval Systems			E-Business
Artificial Intelligence Systems			Cryptography
Data Mining			
System Analysis, Design and Implementation			
Elective courses at University level – Students choose 1 of the following courses:	Elective courses at University level – Students choose 1 of the following courses:	Elective courses at University level – Students choose 1 of the following courses:	Elective courses at University level – Students choose 1 of the following courses:
Human Resources Management	Project Management	Human Resources Management	Organizational Behavior
		Project Management	Leadership
			Human Resources Management

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► University American College Skopje reserves the right to amend the program