Algebra
university college for
applied computer engineering

FAST FACTS SHEET 2014

Fast fact sheet 2014 contains most significant information on the University College of Applied Computer Engineering

The fact facts sheet was prepared in order to provide accurate and short information on the institution, their programs, students, facilities and staff.
More info could be obtained from our web page (www.racunarstvo.com or www.racunarstvo.hr)

Zagreb, January 2014.

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meets the quality requirements of NVAO

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Short description and history

University College for Applied Computer Engineering was established on July 7th, 2008 by the education group Algebra, the region's leading private education system for adult education in computing and information technologies, which exists since 1998. The Algebra group today consists of three legal entities: Algebra ltd., the founder of Public Open University Algebra and University College for Applied Computer Engineering.
Education group Algebra (www.algebra.hr) is a supplier of educational services in computing and information technologies for more than two thirds of the largest employers in Croatia, in certain technologies we are the only accredited training center in Croatia (like Apple Authorized Training Centre, EC-Council Accredited Training Centre, VMware Training Centre), in others together with the accreditation that we hold, we have the market share of over 80% or 90% (for instance, Autodesk Authorized Training Centre, Microsoft Partner with Gold Learning competence, Adobe Authorized Training Centre), while in yet others we are significant and recognized supplier of education services (Cisco Learning Partner Associate, Cisco Networking Academy, ECDL Academy, CompTIA Authorized Partner). Algebra group has during the last several years published more than 60 titles (books and e-learning materials) in the area of ICT, sold in more than 200,000 copies.
The initial accreditation of University College's first professional undergraduate program: **Applied Computer Engineering** was issued by the Ministry of Science, Education and Sport after the suggestion by the National Higher Education Council on **June 16th, 2008**, when the school received a **temporary accreditation**[1] for the pursuance of professional study program in the field of applied computer engineering. (class: UP/I-602-04/08-12/00001 No.: 533-07-08-0006).

Permanent accreditation[2] for professional study program of Applied Computer Engineering was issued to University College on July 27th, 2010 (class: UP/I-602-04/09-12/00006, No.: 533-07-10-0004). We enrolled our first generation of students in September 2008.
Taking into account our strategic development goals, University College started the school year 2009/2010 at new premises in Ilica 242 in Zagreb, where it initially had one lecture hall with 70 seats, 5 classrooms with 18-24 computer seats each, and two smaller lecture rooms with 10-16 seats without computers for teaching or consultations. By the end of 2011 this was further enlarged by another lecture hall and 2 more computer labs, so we today have more than 1.200 m^2 of equipped educational space.

The formalization of the activities conducted in order to establish a broad and meaningful international collaboration was additionally confirmed on 30.11.2011. when University College got awarded with the **Extended ERASMUS University Charter**[3] (charter number: 261486-IC-1-2012-1-HR-ERASMUS-EUCX-1, ID code; HR ZAGREB11), which allows for additional financial and organizational support to the already-signed bilateral agreements with education institutions throughout Europe and stimulate the exchange of teachers and students.

In 2013., UCACE applied for new Erasmus+ mobility program. Application was approved and New Erasmus+ charter was confirmed by European commission.
On **12th of September 2012**, after some two years of preparation we received **Initial accreditation** for professional undergraduate study program: **Multimedia Computing** and graduate study program: **Applied Computer Engineering**. Diagram of our current study programs is shown in one of the next chapters.

Mission and vision

Mission

Throughout our activities, the University College strives to build a value system coherent to values in which we strongly believe through:

- public activities and campaigns,
- gathering of relevant information as a basis for social and policy development,

[1] http://www.racunarstvo.com/Uploads/dokumenti/Dopusnica1.gif
[2] http://www.racunarstvo.com/Uploads/dokumenti/MZOŠ_dopusnica.pdf
[3] http://www.racunarstvo.hr/studij.aspx?id=1324

- support to formal educational system in the Republic of Croatia, especially to system of vocational education,
- active work within nongovernmental sector and employers' association,
- active work within the framework of European and global initiatives fostering development of the Republic of Croatia and its educational system (OECD, ETF,...)
- attraction of foreign projects and investments significant for development of the Republic of Croatia,
- active work together with institutions and communities of persons with disabilities in order to foster their social inclusion and employment,
- fostering information technology literacy and basic competences stated in EU strategic documents,
- fostering the importance of educational quality on any level, especially within higher education
- activities fostering international cooperation and implementation of projects in cooperation with international institutions,
- cooperation with employers and especially ICT employers in order to support their efforts to educate work force capable of achieving and maintaining competitive advantages required for the positioning of the Republic of Croatia in the European and global market.

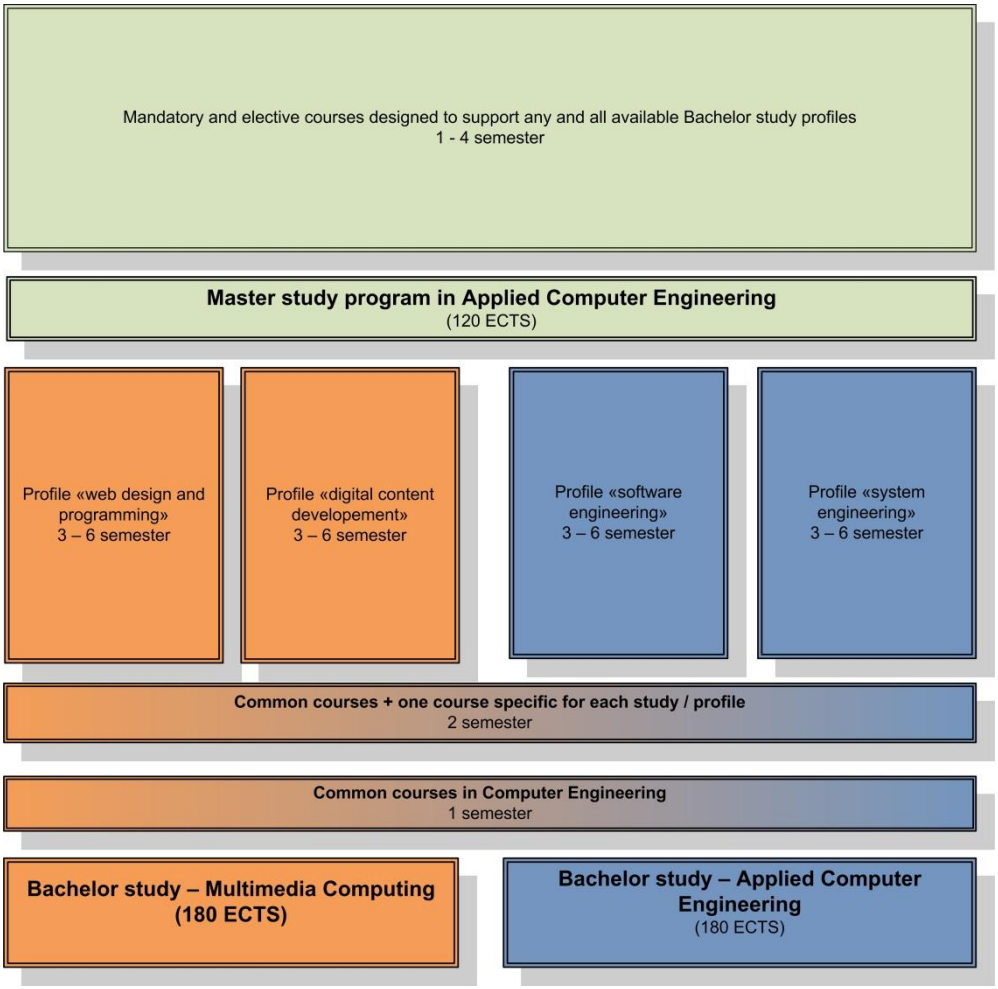
In order to perform all above mentioned activities, the University College makes strategic development decisions in the field of higher education, assures material and technical resources for the implementation of these activities, controls and develops internal quality assurance system, maintains contacts with business sector and supports career development of its students through activities of the Career center. In order to support the above stated activities, the University College develops its information system, system for assessment, e-learning (electronic learning) system and, in material and technical sense, develops the necessary capacities in order to provide prerequisites for a high quality study.

Vision

We aim to become the first choice of Croatian and regional students interested in professional higher education in the field of ICT and new technologies, through development of excellence in all aspects of our work: our infrastructure, staff, cooperation with the industry and international activities.

Study programs

University College currently holds initial accreditation for two undergraduate (180 ECTS) and one graduate (120 ECTS) study programs all in the area of technical sciences, field computer sciences as shown in the next figure.
Both professional undergraduate study programs are completed by passing all exams and acquiring a minimum of 180 ECTS points including the passing of final practical exam, completion of professional practice and preparation of final paper. The professional title acquired is in accordance with the Act on Academic and Professional Titles and the Academic Degree (Official Gazette, No. 87/09, entered into force on July 21st 2009).
By completing their studies on undergraduate level, students acquire the title of: **bachelor of computer engineering** (**multimedia computing**) in corresponding sub specialization which corresponds to the degree of Baccalaureus (bacc.ing.comp.), Eng. **Bachelor of Computer Engineering** or **Bachelor of Multimedia Computing**.
By completing their studies on graduate level, students acquire the title of: **Master of Applied Computer Engineering** (ma.ing.comp.).



Studies are conducted as full-time programs during a period of three years or six semesters for undergraduate, and two years or four semesters for graduate study. Sixth semester within undergraduate study is dedicated to narrower professional guidance, work practice and preparation of final project, as fourth semester of graduate program. Expected duration of classes is 15 weeks per semester which makes 19 weeks in total together with the two midterm examination periods. The first semester and almost the entire second semester are common to both undergraduate study programs. Mutual courses are present in other semesters, but in smaller numbers than during the first year of the study. Classes are scheduled and adapted to the needs of students, especially of those students who work and study.

Two shown undergraduate programs altogether contain 66 unique courses spread within three years, while graduate study has 60 unique courses spread within two years. All lectures are currently in Croatian language while most of the literature used for graduate program is in English. There are altogether 18 courses in English held during both - summer and winter semester intended for foreign students, according to the next figure.

Courses	Total hours	ECTS Credits	Hours Lectures	Hours Lab	Hours Seminar
Directory and identity management systems	120	4	30	15	0
Virtualization of IT infrastructure	120	4	15	30	0
Operating Systems - Network Infrastructure and Services	150	5	30	30	0
Administration of Operating Systems	180	6	30	30	0
Planing and Design of Network Infrastructure	180	6	30	45	0
Programming	180	6	30	45	0
Introduction to Databases	150	5	30	30	0
Database Design	120	4	30	15	0
Data Structures and Algorithms	150	5	30	30	0
Internet Tehnology Standards	150	5	30	30	0
Development of Internet Applications	150	5	30	30	0
Accessing Data from Program code	150	5	30	30	0
Java Programming I	210	7	30	45	0
Java programming II	120	4	30	15	0
Object-Oriented Programming	210	7	45	30	0
Introduction to Computer Networks	120	4	30	15	0
Computer Networks II	150	5	30	30	0
Computer Networks - lab	180	6	15	60	0
Final thesis / project	150	14	1	9	9

We are ready to support final project for incoming exchange students.

Students

The University College for Applied Computer Engineering enrolls, since its establishment, full-time students (mainly secondary-school graduates) and students under the work study scheme (part-time students). The share of part time students has been gradually reduced, so in the academic year 2008/2009 52% of such students were enrolled, whereas in the last enrolled generation 2013/14, part time students accounted for less than 30% of total enrolled generation. The quality of part-time students is, according to analysis of passing rates, better than with full-time students (out of the total number of enrolled in the last 6 generations, on the average 74% of them passes exams in relation to full-time students, where less then 60% of them passes exams within set time limits), primarily because of their maturity, higher responsibility level and previous knowledge from the profession.

As we perform professional studies in the field of technical sciences, it is expected that full time students of vocationally oriented secondary schools (with which we work actively and support them) would gravitate towards such a study. Consequently, it is not surprising that out of the total number of enrolled full-time students in the last 6 generations 64% of them came from vocationally oriented secondary schools (VET) and 36% from grammar-schools.

We enrolled altogether 146 freshmen students in academic year 2013/2014 on our two undergraduate studies, with roughly equal interest for both applied computer engineering and multimedia computing. Stated number is increase compared to the last years when we enrolled some 100 to 120 freshmen students. Altogether we today have more than 350 active students and expect to double stated number in next two years due to our new graduate study program that which started at the end of February 2013 and Multimedia computing that still has only two generation of enrolled students.

Staff

University College currently has 26 permanent employees, 12 of which are in the placements of permanent teachers, 5 of them are assistants and 9 of them are employed in supporting and administrative services. Being in accordance with the realistic possibilities and incomes earned by the institution, this structure also satisfies the needs of the students and national legal framework. On top of stated 26 permanent employees, there are also more than 50 associate teachers out of which 19 lecturers, 2 senior lecturer, 5 university college professors, 1 assistant professor, 2 associate professors and 3 full professors and 20 associate assistants.

As a result of two new programs for which we got initial accreditation in September 2012, UCACE constantly employ additional teaching staff.

Facilities

The University College for Applied Computer Engineering has been located since 24.08.2009. in areas 6 and 6a of the University campus building in Ilica 242 in Zagreb, in a superbly renovated and equipped building from the early 20th century.

When decorating and furnishing the premises, with our intervention we have tried to encourage the contrast of new technology and the old, restored buildings, and to create a stimulating and dynamic environment. With over 1200 m2 of space now available for some 350 students enrolled (excluding graduate students), the University College for Applied Computer Engineering seeks to ensure high standards of equipment and furnishings.

Teaching space

At the College the following are available for the delivery of classes:

- Two conference auditoriums with 50 and 70 seats, equipped with air-conditioning, conference sound system and video conferencing equipment that allows the monitoring of teaching via the Internet and the virtual presence of overseas lecturers.
- Two air-conditioned, specially equipped laboratories for network technology with 18 - 22 workstations for students. Apart from a PC, each position is equipped with a number of components of Cisco networking equipment for all levels of education of network technologies (from CCNA to CCNP, Wireless etc) and transmission equipment for television distribution, and the reception and transmission of satellite signals.
- Four air-conditioned, specialized classrooms for computer technology, equipped with 18-26 workstations for students. Every work station has a PC with installed software development packages and operating systems. For each individual course a special work environment has been prepared and installed, and its easy alternation, modification, change or edits, and the preparation of the environment for other courses, is supported by virtualization technology.
- A general-purpose air-conditioned study with 14 workstations without computer equipment.
- An air-conditioned room which functions as a reading room with 8 positions, of which 6 are equipped with computers for students.
- An air-conditioned general purpose classroom with 42 seats, which is also fully equipped with a web conferencing system that enables students to follow the teaching of the classroom via the Internet and the virtual presence of overseas lecturers.
- International Examination Centre for the implementation of accredited certification exams Prometric PTC with 10 workstations.

Quality assurance

As soon as University College have been founded and we formed our first undergraduate study program, we started the formal cooperation with the leading higher educational institution in this region, Faculty of Electrical Engineering and Computing, University of Zagreb (FER). During the initial founding phase, FER minutely examined our study program and gave valuable suggestions for changes, additions and supplements, which we respected, and then, after we received initial accreditation by National Agency for Science and Higher Education (ASHE) and started the studies. In order to improve our quality, FER performed an audit of the study program implementation in 2009 and 2013. As a result of the audits, the FER's Faculty Council awarded University College a "certified by FER" certificate valid for three years (2013-2016).

Our wish for the development of internal quality assurance system motivated us to start international project together with one of the leading European accreditation agencies; Dutch-Flemish NVAO, who performed an audit of our internal quality assurance system in October 2010, using their own standards in compliance with

the European Standards and Guidelines for Quality Assurance in Higher Education (ESG). As a result of the audit, we received a positive Institutional Audit Report on 22.12.2010, stating that the school satisfied NVAO standards with relatively high marks, also stating recommendations for additional improvements.

In accordance with the Plan of External Evaluation of Higher Educational Institutions in 2011 (class: 003-08/10-02/0007, No.: 355-01-10-0002) in the autumn of 2011 we had an external independent periodic quality assurance system evaluation performed by National Agency for higher education. The expert committee for the conduction of the external evaluation of internal quality assurance system, appointed by the Accreditation Council of the National Agency (ASHE) created a report on the external independent periodic quality assurance system evaluation which was handed down to University College on 16.12.2011. The report states that according to three ESG criteria University College's quality assurance system was placed into the advanced phase (highest), according to two criteria it was in the developed phase, while according to one criterion (criterion 1.1), it was between the beginning and the developed phase. In accordance with the recommendations, University College has then taken measures for the necessary improvements, primarily in connection with the ESG guideline 1.1, in order to satisfy requirements and we are currently waiting to be awarded Quality Assurance System certificate. New report issued by the Agency in September 2012, upon implemented improvements resulted in **highest results given to any higher educational institution in Croatia**. Namely: out of 7 criterions 3 are in the advanced phase (highest), 2 between developed and advanced phase and one is in developed phase (second best).

During the same year (2011) ASHE started periodic reaccreditation of our institution and on 12th of January 2012. we submitted self evaluation report. In May 2012. international assessment panel visited our institution in order to conduct institutional audit. As a result, in September 2012. we have received reaccreditation report stating that UCACE scored maximum (fully implemented) for 4 and (mostly implemented) for 3 out of 7 criterions. **Stated result made us the best evaluated professional higher educational institution** in Republic of Croatia.

NVAO assessment results

Within the Institutional Audit Report under the project of internal quality assurance system evaluation performed by Flemish – Dutch accreditation agency: NVAO, we received a series of assessments, commendations but also recommendations for additional improvement. Short summary is as follows:

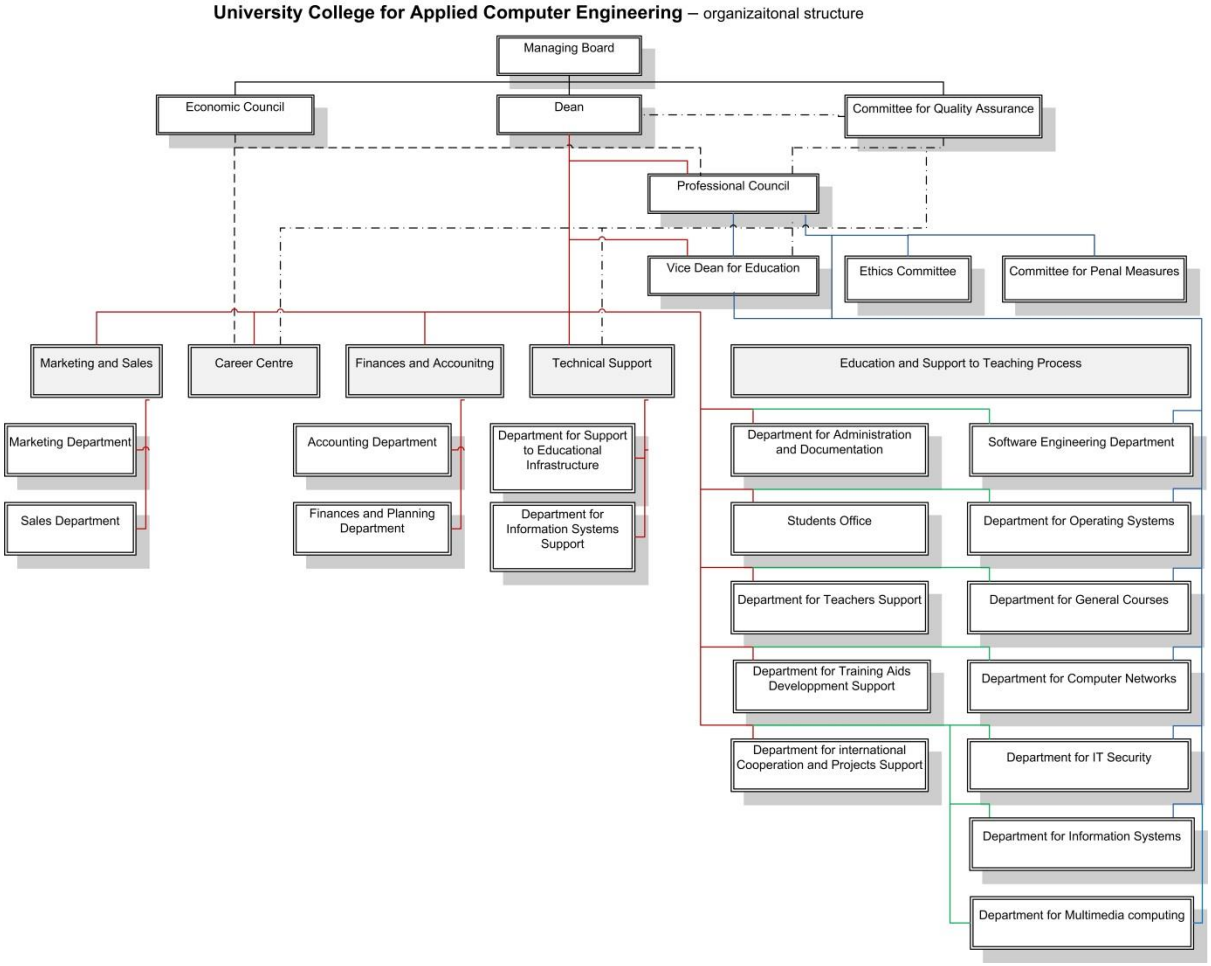
"A panel of peers conducted an institutional audit of the University College for Applied Computer Engineering (the college) in Zagreb, Croatia. Judgements were made about the NVAO standards for institutional audits of Croatian institutions for professional higher education. Overall, the college's internal quality system is considered satisfactory.

From the start, the ultimate aim of the college was to create an attractive high-quality bachelor's programme in IT with the help of industry. Three years later, it seems that precisely these high-quality aims at programme level have brought about a high-quality system and culture at institutional level. Management, staff, students and cooperating partners in industry and higher education, they all seem to share the same quality values and goals. Together, they certainly succeed in creating a stimulating and dynamic teaching and learning environment attractive to students and staff alike.

Three years later, the college is also found to be in a phase where challenges and opportunities are coming together. Indeed, the college's financial resources encompass primarily tuition fees making its stability rather fragile. Economic setbacks and financial constraints also cause delays in the implementation of new programmes and the further internationalisation of activities. And pending reforms in Croatian higher education call for ingenuity and resourcefulness. But despite its short existence, the college can rely with full confidence on its excellent reputation, a promising relationship with industry and FER (Faculty of Electrical Engineering and Computing, University of Zagreb), and a quality system fit for purpose. Management is determined to extend its national and international cooperation, and to invest in new partnerships with industry and higher education institutions in order to continue delivering first-rate education."

Organizational structure

University College has organizational structure as follows:



The Managing Board has 5 members, 3 appointed by the founder and 2 by the Professional Council. The Chairman of the Board is chosen between the members of the Board by the majority of more than half the total votes. The Dean of the College participates in the work of the Managing Board as a non-voting member. The Managing Board has a four-year mandate, and the members can be selected again.

Implementing strategic and development guidelines set by the Managing board, **the Dean** is the operative manager of the College. He's the head and the leader of the University College and his status is that of a headmaster, set in the Act on Institutions under which the University College was established and registered. The Dean is appointed for the mandate of four years, and the same person can be chosen again. The Dean chairs the Professional Council, takes care of the implementation of the Development Strategy, and reports to the Managing Board annually about the results of the implementation. He also reports the College's results to the Professional and Economic Councils. The Dean represents the College in the Council of Polytechnics and Colleges of Professional Higher Education, and supervises the structuring and organization of the studies, teaching and the quality of teaching, the academic schedule, the operative teaching plan and the academic load (quota), but also monitors the financial operations of the University College. The Dean proposes vice-deans and department heads to the Professional council.

In the University College, an important role is also that of the **Vice-Dean for Academic Affairs**, who chairs the Committee for Quality Assurance, helps the Dean in planning and implementing the teaching process, supports

the teachers, and coordinates the implementation of the operative plan. The Vice-Dean is also in charge of the implementation of the planned teaching activities.

The **Heads of Organizational Units** within the business subsystem of the College are appointed by the Dean and their tasks are described in their Work Place Descriptions, while according to the Development Strategy as well as according to the action plan and the list of key performance indicators (KPI), they have to report at least once a year about the realization of the KPIs of their units.

Career centre

Modern educational institutions in countries positioned at the top of the world competitiveness rankings, provide multi-layered functional link between students, their careers, education, economy and long-term national development strategies. This is a strategic affirmation of the business model of University College Algebra.

This approach is reflected mainly in the structure of the curriculum which is synchronized with labour market needs and European and global development strategies for IT industry, because we want to prepare our students for the labour market of tomorrow and not exclusively for the market of today or the one of yesterday. Building up careers of each of our students is important aspect of this strategic affirmation that is provided through the Career Centre.

The Career Centre is the basic meeting point between the student, college and the employer, which provides the students with the following:

- Counselling role in career development from the moment of admission of the student till the end of his/her studies
- Constant monitoring of students in collaboration with mentors and guiding them through the curriculum and elective courses in accordance with demonstrated performances and predispositions
- Planning of graduation thesis and help in collaboration with mentors
- Directing towards the projects of the employers

At the same time, Career centre intensively cooperates with the employers through:

- Active work with their internal mentors for career development of the employees
- Special services for employers who finance scholarships for students
- Selection of the best students to engage in employers' projects, internships or employment

During the past years University College Algebra has developed a series of services which make mentioned activities of the Career centre more successful: IT infrastructure of digital student service together with ELAP (electronic academic portfolio) system.

Course catalogue

Bachelor study program Applied Computer Engineering – (180 ECTS)

PROFILE: **Software Engineering**

Year I

Semester I

Subject Title	Hours per Semester	ECTS	Lectures per week	Exercise per week
English for IT	45	4	2	1
Mathematics I	75	7	3	2
Use of Applications in Business Administration	60	4	2	2
Computer Programming	75	6	3	2

Introduction to Computer Networks	45	4	2	1
Basics of Digital Electronics	60	5	3	1

Semester II

Subject Title	Hours per Semester	ECTS	Lectures per week	Exercise per week
Introduction to Business Economy	45	4	2	1
Introduction to Databases	60	5	2	2
Mathematics II	60	5	2	2
Operating Systems	75	6	3	2
Computer Architecture	60	5	2	2
Data Structures and Algorithms	60	5	2	2

Year II

Semester III

Subject Title	Hours per Semester	ECTS	Lectures per week	Exercise per week
Mathematical Possibility and Statistics	60	5	2	2
Basics of Business Communication	60	5	2	2
Database Design	45	4	2	1
Internet Technology Standards	60	5	2	2
Object-Oriented Programming	75	7	3	2
Elective III_1	45	4	2	1

Semester IV

Subject Title	Hours per Semester	ECTS	Lectures per week	Exercise per week
Project Management Methodology in IT projects	45	4	2	1
Security of Information Systems	60	5	2	2
Object-Oriented Programming - lab in .NET environment	60	5	1	3
Development of Internet Applications	60	5	2	2
Java Programming I	75	7	2	3
Elective IV_1	45	4	2	1

Year III

Semester V

Subject Title	Hours per Semester	ECTS	Lectures per week	Exercise per week
Planning and Auditing Information Systems	60	6	3	1
Software Engineering	60	6	2	2
Accessing Data from Program Code	60	5	2	2
Interoperability in Information Systems	60	5	2	2
Elective V_1	45	4	2	1
Elective V_2	45	4	2	1

Semester VI

Subject Title	Hours per Semester	ECTS	Lectures per week	Exercise per week
Organization and Management	45	4	2	1
Information Systems in Business Administration	45	4	2	1
Elective VI_1	45	4	2	1

Elective VI_2	45	4	2	1
Final Project	150	14	1	9

Elective courses

Subject Title	Hours per Semester	ECTS	Semester
Design and management of Information Systems	45	4	3
Databases Administration	45	4	3
Commissioning and Implementation of Information Systems	45	4	4
Project Methodologies in Application Development	45	4	4
Java Programming II	45	4	5
Security of Business Applications	45	4	5
Collaboration Systems	45	4	5
Decision Support Systems, BI and Data Mining	45	4	5
Managing Project Risks	45	4	5
Advanced Administration of Open Source Operating Systems	45	4	5
Application Development for Mobile Devices	45	4	6
Cryptography	45	4	6
Java Web Programming	45	4	6
Directory and Identity Management Systems	45	4	6
Distributed Applications and Component Programming	45	4	6
Virtualization of IT infrastructure	45	4	6
Introduction to objective C	45	5	6

PROFILE: **System Engineering**

Year I

Semester I

Subject Title	Hours per Semester	ECTS	Lectures per week	Exercise per week
English for IT	45	4	2	1
Mathematics I	75	7	3	2
Use of Applications in Business Administration	60	4	2	2
Computer Programming	75	6	3	2
Introduction to Computer Networks	45	4	2	1
Basics of Digital Electronics	60	5	3	1

Semester II

Subject Title	Hours per Semester	ECTS	Lectures per week	Exercise per week
Introduction to Business Economy	45	4	2	1
Introduction to Databases	60	5	2	2
Mathematics II	60	5	2	2
Operating Systems	75	6	3	2
Computer Architecture	60	5	2	2
Computer Networks II	60	5	2	2

Year II

Semester III

Subject Title	Hours per Semester	ECTS	Lectures per week	Exercise per week
Mathematical Possibility and Statistics	60	5	2	2
Basics of Business Communication	60	5	2	2
Implementation and Management of Information Systems	45	4	2	1
Operating Systems Administration	60	6	2	2
Computer Networks - lab	75	6	1	4
Elective III_1	45	4	2	1

Semester IV

Subject Title	Hours per Semester	ECTS	Lectures per week	Exercise per week
Project Management Methodology in IT Projects	45	4	2	1
Security of Information Systems	60	5	2	2
IT Network Security	60	5	2	2
Operating Systems - Network Infrastructure and Services	60	5	2	2
Open Source Operating Systems	75	7	2	3
Elective IV_1	45	4	2	1

Year III

Semester V

Subject Title	Hours per Semester	ECTS	Lectures per week	Exercise per week
Planning and Auditing of Information Systems	60	6	3	1
Planning and Design of Network Infrastructure	75	6	2	3
Wireless Computer Networks	60	6	2	2
Collaboration Systems	45	4	2	1
Elective V_1	45	4	2	1
Elective V_2	45	4	2	1

Semester VI

Subject Title	Hours per Semester	ECTS	Lectures per week	Exercise per week
Organization and Management	45	4	2	1
Information Systems in Business Administration	45	4	2	1
Elective VI_1	45	4	2	1
Elective VI_2	45	4	2	1
Final Project	150	14	1	9

Elective courses

Subject Title	Hours per Semester	ECTS	Semester
Design and management of Information Systems	45	4	3
Databases Administration	45	4	3
Commissioning and implementation of Information Systems	45	4	4

Project Methodologies in Application Development	45	4	4
Java Programming II	45	4	5
Security of Business Applications	45	4	5
Collaboration Systems	45	4	5
Decision Support Systems, BI and Data Mining	45	4	5
Managing Project Risks	45	4	5
Advanced Administration of Open Source Operating Systems	45	4	5
Application Development for Mobile Devices	45	4	6
Cryptography	45	4	6
Java Web Programming	45	4	6
Directory and identity management systems	45	4	6
Distributed Applications and Component Programming	45	4	6
Virtualization of IT infrastructure	45	4	6

Bachelor study program Multimedia Computing– (180 ECTS)

Year I

Semester I

Subject Title	Hours per Semester	ECTS	Lectures per week	Exercise per week
English for IT	45	4	2	1
Mathematics I	75	7	3	2
Use of Applications in Business Administration	60	4	2	2
Computer Programming	75	6	3	2
Introduction to Computer Networks	45	4	2	1
Basics of Digital Electronics	60	5	3	1

Semester II

Subject Title	Hours per Semester	ECTS	Lectures per week	Exercise per week
Introduction to Business Economy	45	4	2	1
Introduction to Databases	60	5	2	2
Mathematics II	60	5	2	2
Operating Systems	75	6	3	2
Computer Architecture	60	5	2	2
Applied Physics	60	5	2	2

Year II

Semester III

Subject Title	Hours per Semester	ECTS	Lectures per week	Exercise per week
Visual Communications Design	60	5	3	1
Introduction to Marketing and Media Communications	75	6	3	2
Database Design	45	4	2	1
Internet Technology Standards	60	5	2	2
Operating Systems Administration	60	6	2	2
Elective III_1	45	4	2	1

Semester IV

Subject Title	Hours per Semester	ECTS	Lectures per week	Exercise per week
Project Management Methodology in IT Projects	45	4	2	1
Client Side Scripting	60	5	1	3
Web and User Interface Design	60	5	2	2
Open Source Operating Systems	75	6	2	3
Introduction to Object-Oriented Programming	60	5	2	2
Elective IV_1	60	5	2	2

Year III

Semester V

Subject Title	Hours per Semester	ECTS	Lectures per week	Exercise per week
Basics of Business Communication	75	7	3	2
Electroacoustic and Professional Audio Equipment	45	4	2	1
Introduction to Video Production	45	4	2	1
PHP Programming	60	6	2	2
Elective V_1	45	4	2	1
Elective V_2	45	5	2	2

Semester VI

Subject Title	Hours per Semester	ECTS	Lectures per week	Exercise per week
Internet Marketing	45	4	2	1
Content Management Systems	45	4	2	1
Elective VI_1	60	5	2	2
Elective VI_2	60	5	2	2
Final Project	120	12	1	7

Elective courses

Subject Title	Hours per Semester	ECTS	Semester
Design and Management of Information Systems	45	4	3
Multimedia Publishing	45	4	3
Security of Information Systems	60	5	4
Introduction to Digital Photography and Processing	60	5	4
Vector 2D Animations	60	5	5
Security of Business Applications	45	4	5
Collaboration Systems	60	5	5
Web Server Technologies	45	4	5
Development of Internet Applications	60	5	6
Sound Processing	60	5	6
Postproduction of Digital Video	60	5	6
Application Development for Mobile Devices	60	5	6
Introduction to Objective C	60	5	6

Master study program Applied Computer Engineering – (120 ECTS)

Year I

Semester I

Subject Title	Hours per Semester	ECTS
Entrepreneurship	60	5
Sociology of Information Society	45	3
Information Services Management	45	4
Elective INF 1	60	6
Elective spec 1	60	6
Elective spec 1	60	6

Semester II

Subject Title	Hours per Semester	ECTS
Introduction to Sales	60	5
e-business	45	3
Development Trends in IT Infrastructure	45	4
Elective INF 2	60	6
Elective spec 2	60	6
Elective spec 2	60	6

Year II

Semester III

Subject Title	Hours per Semester	ECTS
Conflict Handling and Negotiations	45	3
Design, Finances and Management of Development Projects	45	3
Elective INF 3	60	6
Elective spec 3	60	6
Elective spec 3	60	6
Elective spec 3	60	6

Semester IV

Subject Title	Hours per Semester	ECTS
Master Thesis	300	30

Elective courses Information technology (INF)

Subject Title	Hours per Semester	ECTS	Semester
Managing Quality in IT Projects	60	6	1
Introduction to Geo-informational Systems	60	6	1
Introduction to Music Production	60	6	1
Data Warehouses and Business Intelligence	60	6	1
Identity Management	60	6	2
Discovering Knowledge from Databases	60	6	2
Management of Innovation	60	6	2
Sociology of Globalisation	60	6	2
Business Process Modelling	60	6	3
Planning Business Continuity	60	6	3
Business Intelligence – Competitive Analysis	60	6	3
e-learning Technologies	60	6	3

Elective courses IT Specialization 1 semester (SPEC 1)

Subject Title	Hours per Semester	ECTS
Virtualization of IT Infrastructure	60	6
Advanced Routing and Switching	60	6
Incidents Management in IT Systems	60	6
Security of Information Systems*	60	6
Ergonomics and Design of Software Applications	60	6
Design of User interface and Advanced Development of User Applications for Mobile Devices	60	6
Discrete Mathematics	60	6
Cryptography	60	6
3D Modelling and Texturing	60	6
Applied Physics*	60	6
Introduction to Digital Photography and Processing *	60	6
Web and User Interface Design *	60	6
Introduction to Object-Oriented Programming *	60	6
Client Side Scripting *	60	6
Introduction to Video Production *	60	6

Elective courses IT Specialization 2 semester (SPEC 2)

Subject Title	Hours per Semester	ECTS
Penetration Testing	60	6
Administration of Operation Systems *	60	6
Development and Configuration of ERP Systems	60	6
Advanced Application Development Based on Development Templates	60	6
Management of Data on Mobile Devices and Security of Mobile Applications	60	6
Introduction to Computer Graphics	60	6
3D Animation and Cameras	60	6
Visual Communications Design *	60	6
Development of Rich Internet Applications	60	6
Internet Technology Standards *	60	6
Detection of Problems and Maintenance of IT Networks	60	6
Voice over Internet Protocol	60	6
Post Production of Digital Video *	60	6

Elective courses IT Specialization 3 semester (SPEC 3)

Subject Title	Hours per Semester	ECTS
Optical Networks	60	6
Introduction to Computer Forensics	60	6
Redundancy of IT Services and Applications	60	6
Secure Coding	60	6
Advanced Programming Paradigms	60	6
Computer Games Development	60	6
Advanced C++ in Practice	60	6
Mobile Devices Games Development	60	6
Software Development for Industrial and Mobile Robotics	60	6
Advanced Information Systems Interoperability	60	6
3D Lightning and Rendering	60	6
Motion Graphics and Visual Effects	60	6
Sound Processing *	60	6
Development of Internet Applications *	60	6
Social Media Content Development	60	6
Advanced Network Protocols for Service Providers	60	6
Quality of Service for Networks	60	6
Professional Multimedia Systems and Protocols	60	6
Audio Post Production for Film, TV and Radio	60	6