

## Entrepreneurial teaching and learning at Algebra University College



**Algebra University College (AUC)** is a private, non-profit Croatian higher educational institution focusing on applied sciences education for digital competences. AUC is the flagship of the Algebra Group, Croatia's single largest private educational organisation. Founded in 1998, Algebra Group provides courses for some 20,000 students annually throughout its more than 20 outposts across the country. Many of these programmes are exclusively authorised by the AUC's international academic or educational partners, global software and equipment manufacturers such as Google, Microsoft, Cisco, Oracle, Adobe and others. In 2014, Microsoft acknowledged Algebra Group as its global "*Learning Partner of the Year*". Algebra Group does not receive any direct subsidies from the Croatian government.

AUC was established and formally accredited as a higher educational institution in 2008, ten years after Algebra Group. Located within its main premises at the University Campus in Zagreb, AUC today is home to more than 120 full time faculty members and 300 associate academics. Beside its teaching focus, AUC also conducts applied research, mainly in the field of data science, information technology in education, digital marketing, digital transformation and education policy. Scientists from the AUC's Research LAB won the prestigious European Big Data Hackathon organised by Eurostat and the European Commission in 2017.

At the beginning of 2018, AUC has approximately 1,000 resident students on-site. It enrolls more than 300 new students each year into its (currently) ten accredited professional **higher educational study programmes** – four undergraduate and six graduate programmes. The Bachelor programmes include software engineering, system engineering, digital marketing and multimedia computing. The Master study programmes comprise of all the Bachelor level content plus data science, game development and an e-Leadership Master of Business Administration (MBA), which this case study mostly focuses on.

The **e-Leadership MBA** was accredited in 2016 as a two-year specialised professional master programme (120 ECTS credits<sup>1</sup>) in digital entrepreneurship education, in the field of economy and management. e-Leadership is a new paradigm proposed by the European Commission. AUC considers e-Leaders as people who are "both business and digitally savvy, and exhibit a capability to lead strategically". The programme is aimed at individuals who are "business professionals and talents aspiring to become leaders of corporate digital transformation or to start-up effectively their own innovative and disruptive business venture in the digital world". Hence, the e-Leader represents a special type of entrepreneur, or intrapreneur, or both. According to AUC, "e-Leadership skills include the competences which enable an individual to initiate and guide ICT-related innovation at all levels of enterprise, from the start-up to the largest of corporations, from private to public". The e-Leadership MBA programme consists of 18 modules, a Business Plan and Master Thesis. It is designed to provide a modern MBA experience, i.e. traditional and advanced technology and strategy-oriented e-Leadership. AUC's e-Leadership Programme replaced, the traditional MBA programme taught since 2003 at its International Graduate Business School (IgBS) in 2016.

### 1. Formal learning opportunities to develop entrepreneurial mindsets and skills

AUC's accredited e-Leadership MBA programme is among the first in higher education institutions in Europe. The curriculum includes three main fields: **business, digital and strategy**. "It's quite often that efficient and successful engineers, when got promoted to the corporate leadership positions, realise the lack of fundamental business competences. And vice versa, effective business-led careers often lack critical digital competences. In addition, they both require modern world leadership skills. Our programme fills these gaps", says the programme director, Goran Radman, adding that such combined competences are important for the dramatically changing business environment. "We need to integrate these three competences because everything in the *business-as-usual* world is going to be radically

<sup>1</sup> ECTS stands for European Credit Transfer and Accumulation System, the standard for higher education in the European Union.

transformed by the power of digital technology while business decisions will have to be more and more taken on-line and independently by units or even by every employee, not by the hierarchy.” Accordingly, the curriculum is structured around the three related standard MBA content competencies: core business competences, core digital technology competences and key executive competences for leadership. The following table shows the modules taught in AUC’s e-Leadership MBA programme.

*Modules of Algebra University College’s e-Leadership MBA Programme*

Introduction to leadership	Strategic management of technology and innovation
Managerial economics	Digital transformation and business process modelling
Strategic management	Information systems in modern organisations
Operations management	Managing information risk and security
Financial management	IT service management
Critical thinking and creativity	Managing and leading people in global environment
Marketing and sales management	New products management
Financial and managerial accounting	Project management
Quantitative methods	Business plan (design thinking)
Entrepreneurship and innovation	Masters’ thesis (mentored project)

Source: AUC e-Leadership MBA Programme brochure 2017

Several programme modules are **directly related to entrepreneurship**: “strategic management”, “critical thinking and creativity”, “marketing and sales management”, “entrepreneurship and innovation” as well as “business plan”. In year 2, entrepreneurship-related modules include “strategic management of technology and innovation”, “digital transformation and business process modelling” as well as “new products management”. Some of the modules, like “critical thinking and creativity”, are introduced to the other Master programmes at AUC, too.

Learning in the e-Leadership programme is very much **case- and practice-based**. In every module, lecturers are using case studies and simulations as well as variable frameworks and methodologies to help students learn solving specific real-life problems.

However, students practice the most intensive hands-on approach through the business plan module. From the very first day, student teams assign for their own start-up projects. The start-up is meant to be a green-field company or enterprise spin-off, but it has to be driven by a disruptive market idea. It also has to have a digital and global economy perspective, and, essentially, it has to contain a new digital technology solution at its core. Through the next twelve months, students continue developing their start-up business plan project using the e-Leadership programme and AUC as their **entrepreneurship and technology incubator**. After a year, they become ready to expose their plan through a pitch to real life investors. At the investors’ conference, gathering different types of investors (e.g. institutional, corporate, angels), student teams will be able to sell their project to the market. “As for the academic rigour, students just need to learn how to build a competitive and sustainable business plan”, explains Goran Radman, “but they take it as a living lab and real life opportunity for them. We don’t run it as a kind of business plan competition; since they know from the very start the market is their ultimate judge in this contest”.

Student teams enjoy unlimited use of AUC’s **infrastructure** and continuous support of **mentors** during the business plan’s development. There are three levels of mentoring: Firstly, there is a faculty member who is assigned as business plan project mentor and who is continually available to all student teams. Secondly, all lecturers use student business plans as real-life cases to provide on-going, segment-specific feedback to the teams, e.g. about finance and marketing. Thirdly, AUC provides special experts required for specific business plan issues. If needed, these experts may also be hired consultants compensated by a project sponsoring company, by investors interested in seeing the project moving on, or by the student teams themselves.

The e-Leadership programme is part of AUC’s efforts to **internationalise** and attract students from other countries. It is its first entire study programme taught fully in English. The majority of modules in

the e-Leadership MBA programme are held by lecturers from the Kelley School of Business, Indiana University, US. The AUC faculty members and associates, who have both academic and professional experience obtained on the job, lecture the other modules.

AUC is building further organisational capacity, both quantitative and qualitative, needed in support for its goals. Some of the most critical goals are international and entrepreneurial teaching skills. The AUC **internal teachers' academy** has been set up to deal with this task, and it has started offering the development of English language teaching skills and Erasmus+ exchange programmes to Croatian lecturers. It also offers internal workshops on methodology, innovation and entrepreneurship. Some of these workshops are run by the visiting senior faculty members from the Kelley School and by other international and local partners of AUC. The academy will continue with also offering education on teaching entrepreneurship.

## 2. Informal learning opportunities to develop entrepreneurial mindsets and skills

As regards informal learning opportunities, AUC has different **networking events** between students and entrepreneurs or the business community. For example, AUC offers a "Talks@Algebra" networking programme where students can meet with, hear from and get in touch with business leaders from different sectors. Very often, this is an option for students to find "in vivo" a professional apprenticeship or mentoring opportunity. Furthermore, lectures in the e-Leadership programme involve guest speakers from business on a regular basis.

In order to further develop students' competences and have them certified, AUC encourages students to acquire **industry certificates** while in a regular programme study or course. AUC seeks designing courses as to make them compatible to industry standards as much as possible, for example in project management. AUC co-operates with ten industry-related academies, including for example the Microsoft Developer Network Academic Alliance, the IBM Academic Initiative, CISCO Networking Academy, and Oracle Education Centre.

AUC also seeks to match formal and informal elements of learning. Many of the AUC students experience **real job opportunities** alongside their study. AUC does not require students to start up their own business based on the business plan incubated within AUC. However, AUC encourages students to seek and foster real business opportunities together with investors or the sponsoring company. Students are also encouraged to apply their practical knowledge in their final or master thesis, for example by designing it around the segment of their business plan in which they are most interested in – whether it be the financial, managerial or marketing part.

## 3. Validating entrepreneurial learning outcomes

As regards mechanisms for students to **feed back** on entrepreneurship courses, students regularly evaluate the content of their education. AUC continuously collects feedback from students to see whether they reached the targeted learning outcomes. Furthermore, students are represented in the Academic Council. This allows them to participate in and influence the curriculum design very early in the process.

AUC also recognises entrepreneurial learning outcomes in the students' **records of achievements**: Feedback from investors will be included in the overall evaluation of students' efforts.

## 4. Involving external stakeholders in teaching entrepreneurship

AUC involves external stakeholders in teaching entrepreneurship in several ways. First, AUC continuously invites business practitioners and external experts as **guest speakers** to lectures. Second, members of the alumni community are involved in many different regular or extraordinary **events** and programmes related to entrepreneurship, for example in organising the investors' conference for students' business plan pitches.

Furthermore, AUC has a permanent **Business Council** with around 30 distinguished individuals from the technology business community. They provide continued feedback on AUC strategy and execution plans, they discuss market demand and supply dynamics, and they launch various initiatives related to collaboration between business and academia.

## 5. Integrating results of entrepreneurship research into entrepreneurship education

The AUC Research LAB contributes in many ways to entrepreneurship education. Business projects that Research LAB has pioneered are further analysed by students and, vice versa, some students' pilot projects are turned into real business projects with industry. Most tangibly, the three Research LAB experts who won the European Commission's 2017 Hackathon meanwhile became AUC permanent faculty members, also teaching e-Leadership and other master programme courses. Therefore, students may also become directly involved in research assignments with industry, developing learning outcomes into concrete business ideas.

Since the Algebra Group also offers different learning courses to children and pupils in elementary and grammar schools, AUC seeks to vertically integrate some of its expertise in formal and informal learning across education levels, from primary to tertiary. Specifically, in its "Digital Agenda for Kids" or "Digital Ninja Academy", Algebra seeks making science, technology, engineering and mathematics more attractive to children.

### Source

This case study was prepared by Dr. Stefan Lilischkis from empirica Gesellschaft für Kommunikations- und Technologieforschung mbH, Bonn, Germany, through collection and analysis of broad documentation about Algebra University College and an interview with Goran Radman, Vice Dean for International Cooperation and e-Leadership MBA Programme Director, on 15 January 2018.

The status of information provided in this case study is January 2018.

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### Links

Algebra University College: [www.algebra.university](http://www.algebra.university)

Algebra University College eLeadership MBA: [www.eleadership.mba](http://www.eleadership.mba)