



Supporting the entrepreneurial potential of higher education

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1 University of Osijek, Croatia: Developing entrepreneurship education from scratch over time

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Abstract



The objective of entrepreneurship education (EE) at the J.J. Strossmayer University in Osijek (SUO), Croatia, is to develop entrepreneurial mindsets and related skills. The curriculum consists of an undergraduate, graduate, a postgraduate and a doctoral programme in entrepreneurship. Key to programme development were the commitment and the personal skills of Prof. Slavica Singer who managed legal, economic and cultural barriers in a post-war and post-socialist environment. Applying the method of systems thinking, she built relationships with international universities and external lecturers, developed her own faculty staff and established local institutions for microfinance, training of entrepreneurs and policy development. Particularly notable EE practices include the SUO's international doctoral programme, team teaching and the drama method. One of the main lessons to be learned from this case is that even in an unfavourable environment it is possible to build EE and a related ecosystem. The preconditions are that there is adequate human resource management, basic funding and autonomy to act. The approach might be transferable to countries or regions with comparable disadvantageous framework conditions.

Case study fact sheet

■ Full name of the university and location:	Josip Juraj Strossmayer University in Osijek (SUO), Osijek, Croatia
■ Legal status:	Public
■ Year of foundation:	Economic faculty (1961), University (1975), entrepreneurship education team (2000)
■ Number of students (2012/2013):	University: 20,746 Economic faculty: 4,037 Entrepreneurship education: 115 (enrolled in the programme – undergraduate, graduate, postgraduate); 1,165 (enrolled in single entrepreneurship courses)
■ Number of employees:	University: Total 1998, teaching & research staff 1550, administrative staff 448 Economic Faculty: Total 100, teaching & research staff 65, administrative staff 35 Entrepreneurship education team: Total 16.5, teaching & research staff 15, administrative staff 1.5
■ Budget in most recent financial year (2013):	University: 60 million EUR (or 450 million HRK) Economic Faculty: 7.7 million EUR (or 57.5 million HRK)
■ Academic profile:	11 faculties, 5 departments, academy of arts
■ Entrepreneurial profile:	Undergraduate, graduate, postgraduate, doctoral EE programme and EE courses for faculty and university students
■ Activities focused in this case study:	Drivers and barriers of developing EE from scratch over time
■ Case contact person(s):	Gatekeeper: Prof. Slavica Singer (professor emeritus)

Information included in this case study is from end of year 2014 unless stated differently.



1.1 The university's entrepreneurship education profile

1.1.1 The university's overall approach to entrepreneurship

The Josip Juraj Strossmayer University in Osijek (SUO), Croatia, has approximately 20,000 students. Osijek has 108,000 inhabitants and is thus the fourth-largest town in Croatia, located in the North-East of the country, close to the border with Hungary, Bosnia and Herzegovina, and Serbia.

The overall objective of entrepreneurial education (EE) at the J.J. Strossmayer University in Osijek (SUO) is to **develop an entrepreneurial mindset** of being “proactive, innovative and responsible for your own choices” (Prof. Singer), as well as related skills. EE at SUO consists of an undergraduate programme, a graduate (master) programme, a postgraduate (specialist) programme and a doctoral programme. The offers are organised by the Faculty of Economics and its staff, which forms as a team a virtual unit: the International Centre for Entrepreneurial Studies (ICES). EE courses are offered to students mainly from the faculty of economics but also to students from other faculties. The programmes and courses are supplemented by extra-curricular activities including community work, an internationalisation programme “Entrepreneurs Without Borders”, consulting activities and a business plan competition.

The degree programmes and the staff of the entrepreneurship team have a strong connection to the entrepreneurial ecosystem and related institutions in the University's environment. Key to the development of the programme and the entrepreneurial ecosystem has been the extraordinary engagement, the leadership and the personal skills of Prof. Slavica Singer.

The EE programme and the entrepreneurial ecosystem have been developed under **unfavourable economic and cultural conditions**. Low purchasing power, high unemployment (especially among young people) and a remote location characterise the economic situation in Osijek. The unfavourable situation is to a large extent, an outcome of the war in the 1990s. Furthermore, there is a negative connotation of the word “entrepreneurship” in Croatia. In the privatisation process following the system change in former Yugoslavia, some so-called “entrepreneurs” had used corruption to become the owners of formerly socially owned¹ organisations. Furthermore, people's “post-socialist” mindset values a secure job in a governmental institution or a large enterprise more than being or supporting an entrepreneur.

1.1.2 Leadership and governance

Leadership of Prof. Singer

Prof. Slavica Singer has an academic background in economics and seven years of work experience as a Vice Manager in a big food company, responsible for operations management and economic analysis. During her work in the food company she was

¹ The concept of socially owned businesses in former Yugoslavia meant that employees were responsible for all aspects of business life, including strategic and operational aspects as well as decisions about how to use profits. Due to this special feature of Yugoslav socially owned businesses, huge disappointments with “entrepreneurial” corruption and anger about the government not preserving the rights of employees contributed to a negative attitude towards entrepreneurs in general.



engaged as part time lecturer at SUO. She started teaching full time at the University in 1973 with an initial focus on **systems theory**². This theoretical background – providing a holistic view on the economic system with different system elements influencing each other – can be seen as a basis for the development of the programme, the entrepreneurial ecosystem and its related institutions until today. Slavica Singer developed a broad vision to foster entrepreneurship and establish EE in Osijek and then implemented the different parts step by step.

Prof. Singer's motivation to introduce an EE programme originated from the frustration about the war for Croatian independence (1991 – 1995) and in solving the problem of **revitalising the economy after the war**. Since the large enterprises were vanishing and since the educational programme had been either neutral with regard to company sizes or focussed on big companies, she saw a need for the development of an education programme for small and entrepreneurial companies.

She operated according to what was later named the **effectuation principle**³ and according to the principle of subsidiarity. Beginning “with what you have”, she did not expect much support from the outside. The principle of being “responsible for yourself and your own decisions” is one of the key elements of the entrepreneurial mindset she wanted and the EE programme today still targets to develop.

Other key personal capabilities for the development of the entrepreneurship programme and ecosystem were found to be her **networking capacity** and her **persistence**. Her networking capacity allowed her to establish relationships to other universities, to convince recognised international lecturers to support her, to receive funding and to build up a competent team of university lecturers. Due to her persistence, she managed to overcome barriers in the unfavourable economic and cultural environment at the university and in the ecosystem.

Historical barriers to entrepreneurship education

The first challenge for Prof. Singer trying to initiate the programme was to reach an understanding of entrepreneurship among the faculty members in order to attain a decision to start the programme. In the **university** and its environment there had been no knowledge about entrepreneurship and no real support for it. The colleagues asked at the beginning: “Why do you need entrepreneurship? We have management.” Prof. Singer overcame this barrier through “understanding and trust”. On one hand, she was “preaching” and explaining entrepreneurship. On the other hand, the faculty members also trusted her and let her try to start the programme.

The next barrier was the **approval of the Ministry** of Science and Education to start the Master programme in entrepreneurship. The national council for higher education in Croatia refused the proposal in June 1999, listing various reasons. The name of the programme “Entrepreneurial Management” as well as the names of the courses were doubted; the conception of the programme towards SMEs and neglecting large companies was criticised; the use mainly of foreign literature, not being published by professors from Osijek was mentioned; and the University of Osijek was considered as being too small to handle the programme. Furthermore, the committee's opinion was that entrepreneurs were born as “street smart people” and that entrepreneurship could not be taught. After the initial refusal there was a “fight” for more than one year in which Prof.

² See von Bertalanffy (1968); Luhmann (1970); Schilling (2000).

³ See Sarasvathy, S. D. (2001); see also <http://www.effectuation.org>.



Singer led the correspondence with the Ministry, being authorised by the Dean. Singer continuously provided arguments to the Ministry, including information about entrepreneurship and entrepreneurship programmes at American universities, which for her was the most important argument. It was due to her persistence that the last step in convincing the Ministry was successful. Notably, one individual had rejected the programme and had also written a considerable part of the negative feedback. Being informed about the name of the person, Singer discovered that this person had actually published a book on entrepreneurship and management with a title named in the same way. Making this a topic in the correspondence with the Ministry, the programme was finally approved.

In May 2000, one week after the approval by the Ministry, the entrepreneurial master programme started with the enrolment of the first students. The rapid start was possible because a group of students had been waiting for the programme for around two years for the programme to begin.

Importance of entrepreneurship in the university's strategy and extent of high-level commitment

Today, EE plays an important role in the strategy that the new Rector, Prof. Dr. Željko Turkalj, and the University developed. He was appointed on 1st October 2013. Before, he had been the Dean of the Faculty of Economics, supporting Slavica Singer in the development of the EE programmes. He presented a programme to the Senate in his election process in which entrepreneurship was one of the points that were supposed to be part of the new strategy. In the official, hitherto existing strategy of the university 2011 – 2020, the topic of entrepreneurship was not mentioned explicitly.⁴

Organisational implementation and level of autonomy to act

From the start, **autonomy** for Prof. Singer and the entrepreneurship team was high. The former Dean gave her almost full autonomy, trust and support signing the initiatives and proposals he had to sign. The current Dean continues this support. However, Prof. Singer stated that she had to “go through the wall” by herself, overcoming the most difficult barriers. Today, the decisions for designing the courses and course contents are taken mainly by Prof. Singer and Prof. Suncica Oberman Peterka, the new head of the entrepreneurship programmes.

At the moment, the undergraduate, graduate and postgraduate entrepreneurship programmes as well as the academic EE team are formally embedded within the Faculty of Economics at the Chair of Economics and Management. The doctoral programme belongs to the International Centre for Entrepreneurial Studies (ICES)⁵, a virtual unit anchored at university level. Despite not having its own, full financial autonomy, the EE team forms the virtual entrepreneurship unit ICES, with its own logo, website and vision,⁶ extending the vision of the Faculty of Economics (see also chapter 1.4.1). According to the current Dean, the EE team will also receive its own chair – since it cannot be

⁴ See SUO (2011).

⁵ See <http://www.ices.hr/en/>.

⁶ See <http://www.ices.hr/en/>.



comprehended that the EE team does not have its own chair although it was awarded the UNESCO Chair for Entrepreneurship in 2008.⁷

Over the years, the **international advisory board** has had a strong influence on course contents, pedagogy and methods. The board had been installed to institutionalise the relationships with a number of high-level international professors, among them Howard Stevenson from Harvard University who is the Board's President.⁸ The Board meets either in Osijek or by videoconference. In the beginning, board meetings took place more frequently than today.

1.1.3 Resources: people and financial capacity

The university started its entrepreneurship activities with very limited human and financial resources. This can be considered as the next challenge in the development of the programme, as Prof. Singer says: "We did not have money, we did not have people." At the beginning, the University received start-up funds of 200,000 US dollar from the Open Society Foundation in New York, by George Soros⁹. It was a necessary support, especially for bringing foreign lecturers into the programme. Since funding was still limited, however, many professors came without asking for fees and sometimes not even for the reimbursement of traveling costs. This was another essential support for the development of the programme. Today, some contracting lecturers from abroad are partially financially supported by the European Union's Erasmus programme. Nevertheless, some professors still receive only the travel expenses as reimbursement or they work completely on a voluntary basis.

The undergraduate and graduate programmes are mainly financed through the government. The postgraduate and the doctoral programme are based on fees. In the postgraduate programme the fee is 4,200 euro per student, in the doctoral programme 12,500 euro per student.

1.2 Entrepreneurship in curricula and teaching

1.2.1 Overview about curricular offers

Offers for the full range of degrees

The curricular offer in entrepreneurship education at SUO consists of an undergraduate programme for a Bachelor degree, a graduate (Master) programme, a postgraduate programme for a Croatian specific "University Specialist" degree, and a doctoral programme.

Exhibit 1-1 provides an overview about the most important offers. A detailed list of undergraduate and graduate courses can be found in the Annex of this case study.¹⁰

⁷ See <http://www.unesco.org/en/university-twinning-and-networking/access-by-region/europe-and-north-america/croatia/unesco-chair-in-entrepreneurship-education-801/>.

⁸ See full list at <http://www.ices.hr/en/advisory-board/>.

⁹ See: <http://www.opensocietyfoundations.org/about>.

¹⁰ Course details for the postgraduate programme (specialisation) and the PhD programme can be found in the brochures, SUO-FE (2011) available at http://www.ices.hr/wp-content/uploads/2011/10/PSP-brosura-11_12.pdf and SUO-FE (2007-2009), available at <http://www.ices.hr/en/wp-content/uploads/2011/10/Brochure-doctoral-program.pdf>.

**Exhibit 1-1: Overview about curricular offers in entrepreneurship education at the University of Osijek**

No.	Name	Contents	Target group	Offered since [year]	No. of participants in 2012/13
Undergraduate					
1	Undergraduate programme in entrepreneurship – Bologna type (Bachelor degree)	Specialisation in entrepreneurship (programme participants) One compulsory course (entrepreneurship) for all enrolled students in economics Elective courses for other students at the Faculty of Economics One elective course for students across campus (entrepreneurship)	High school graduates, enrolled in the first year of economics (programme participants); students enrolled at the Faculty of Economics; enrolled students across campus	2006	24 (programme) 759 (other course participants)
Graduate					
2	Graduate programme in entrepreneurship – pre-Bologna (Master of Science degree)	Specialisation in entrepreneurship (programme participants) Elective courses for other students at the Faculty of Economics	Students with a professional background in small business, larger firms, banks, local government and education	2000 (ended in year 2009)	40 (2008)
3	Graduate programme in entrepreneurship – Bologna type (Master degree)	Specialisation in entrepreneurship (programme participants) Elective courses for other students at the Faculty of Economics	Bachelor degree students from any discipline; students with a professional background in small business, larger firms, banks, local government and education	2009	56 (programme) 406 (other course participants)
Postgraduate					
4	Postgraduate specialist studies – Bologna type (specialist degree)	Specialisation in entrepreneurship (programme participants)	Students with a professional background in small business, larger firms, banks, local government and education	2007	22 (2012), 7 (2013)
Doctoral					
5	PhD programme Entrepreneurship and Innovation	Organised classes, doctoral dissertation, elective Scientific and teaching activities	Students from diverse educational backgrounds	2010	30 (2010), 13 (2012)

Chronological development of EE at SUO

Before the war from 1991 to 1995, the University started with an entrepreneurship programme on undergraduate level in 1990. Because of the war and changes in the programmes, the programme disappeared until the year 2000.



The **graduate programme** (Master of Science degree) was chosen to be the first programme after the war, starting in May 2000.¹¹ The reasons for choosing the master programme were the following. First, the programme could be realised with the help of foreign faculties and lecturers. Second, more students were interested in the Master programme than in the Bachelor programme. Third, for the doctoral programme there was not enough human resource capacity for mentoring and teaching. Moreover, Prof. Singer used the Master programme to build own staff for the entrepreneurship programme: “My idea was: If we start with the Master’s degree, then we will develop a critical mass of people who will understand what entrepreneurship is and then a few of them would be interested to go for the [doctoral programme]. I saw it as the avenue for developing our own faculty. And it proved to be really like that.” The programme was said to be very successful and due to high demand, there were two enrolments in some years.

The new **undergraduate programme** started in 2005 in line with the outcomes of the Bologna process¹² with one obligatory course in entrepreneurship for all students and a complete programme for specialisation in entrepreneurship. The objective of the obligatory course was to start even earlier with EE and the development of an entrepreneurial mindset among students. The course is meant to make students in their first university year comprehend the meaning of entrepreneurship.

Implementing the new educational framework based on the Bologna process, the old (pre-Bologna) Master of Science entrepreneurship programme was split up into a two-year **graduate programme** (academic title: Master of Economics) and a 1.5-year **postgraduate specialist programme** in entrepreneurship (Croatian specific “University Specialist” degree). Due to high demand, the postgraduate specialist programme existed from 2007 until 2009 in addition to the former Master of Science programme, which ended in 2009.

The international and interdisciplinary **doctoral programme** “Entrepreneurship and Innovativeness” started in 2010. In this programme, enrolment is possible every second year. The basis for the doctoral programme was the EU-funded TEMPUS project in 2007 – 2009, in which five universities from five countries were involved: University of Turku (Finland, co-ordinator), Durham University (UK), University of Maribor (Slovenia), Alpen-Adria University Klagenfurt (Austria) and SUO from Croatia. Turku University took the lead in the project. The original project target was to offer a joint degree programme, with one degree for all five universities. This was not achieved due to differences in national regulatory systems. Therefore, a programme was created in which the students receive their doctoral degree at the university where they are enrolled. Those who want to take doctoral courses at another university are able to do so without paying additional fees, based on a signed agreement among the universities involved.

¹¹ See also EC (2012), p.35 for developments and changes in the programme.

¹² The Bologna process was introduced into the Croatian educational system in 2005 and all higher educational institutions had to change their educational programmes accordingly. In general, it led to the following structure: Three years of undergraduate programmes, two years of graduate programmes and three years for postgraduate (doctoral) programmes. Higher education institutions could opt for a 3+2 (year), a 4+1, or a 0+5 formula for organising their undergraduate and graduate programmes. SUO redesigned its programmes using the 3+2 formula, including the EE programmes.



1.2.2 Target groups

Overview about target groups

Generally, the target groups of the EE programmes at SUO are not only students with studies in economics. In order to spread the entrepreneurial mindset further, the objective is to offer EE to all students of the university. Postgraduate participants with diverse educational backgrounds are also targeted. Currently, some students cannot attend EE courses for organisational reasons: Their faculty is too far away and their lecture times conflict with timing of EE offers.

Graduate programme in entrepreneurship – pre-Bologna (Master of Science degree)

The initially intended target group in the first graduate programme of the year 2000 were owners or managers of small businesses. However, it turned out that students also came from the banking sector and from governmental institutions. The students from banking applied because they were dealing with small businesses and sought to know more about the functioning of those small businesses in terms of issues like business goals, strategies, organisational structures, finance, human resource management, and marketing. The students of the Master of Science programme from year 2000 to 2009 were on average 30 years old and had an average working experience of 6.7 years, with the majority (73%) having a background in economics (see details in the annex of this case study).

Undergraduate programme in entrepreneurship – after Bologna (Bachelor degree)

Target groups for this undergraduate EE offer are the following:

- For specialisation in entrepreneurship: enrolled students for Bachelor degree in the first year at the Faculty of Economics (high schools graduates).
- For one compulsory course (entrepreneurship) and further elective individual courses: enrolled students for Bachelor degree at the Faculty of Economics.
- For the elective course in entrepreneurship: all enrolled students across campus.

Most of the undergraduate students taking part in the programme have been enrolled full time (see further statistics in the annex of this case study).

Graduate programme in entrepreneurship – after Bologna (Master degree)

There are two target groups for the graduate programme after Bologna:

- For specialisation in entrepreneurship (entrepreneurship programme participants): Students across the campus or from other universities who have a Bachelor degree and want to participate in a graduate (Master degree) programme, including students with a professional background in small business, larger firms, banks, local government and education.
- For elective individual courses: Primarily students enrolled for a Master degree at the Faculty of Economics with other specialisations (e.g. marketing or finance) as well as other graduate level students from across the campus (e.g. from studies in agriculture, law, art, medicine, electrical engineering).



Most of the students of the graduate programme after Bologna have been enrolled full time (see further statistics in the Annex). In this programme, many students continue directly after finishing their Bachelor degree due to the lack of possibilities to find a job. This is problematic as they do not have enough practical experience and the programme design is based on the assumption that students already had some working experience. Prof. Singer remarked that the problem could be further augmented if there will be mixed groups of students with and without business experience, as it is expected.

Postgraduate specialist studies in entrepreneurship – after Bologna (specialist degree)

As a post-graduate programme after Bologna, the 1.5-year specialist programme, targets students from small businesses, larger firms, banks, and local government and education institutions. From 2010 onwards, the students were on average 32 years old and had an average practical experience of seven years. 55% of them had a background in economics. As in the graduate programme pre-bologna (Master of Science degree), all students enrol part-time as they continue working while taking part in the programme. However, the participant number has decreased in the past years (7 students in 2013, 22 in 2010). Prof. Singer explained this development by a generally decreasing interest in the post-graduate specialist level in Croatia. The business sector is not recognising this level of education, and formally for some people the title (“University Specialist”) is not appealing enough.

PhD programme “Entrepreneurship and Innovation”

The doctoral programme is part-time, currently with a total number of 53 students (30 starting in 2010, 13 starting in 2012 and ten starting in 2014). Due to limited mentoring capacity, the enrolment in the doctoral programme will be limited to ten students in the future as in 2014. In the first two cohorts, the students were on average 38 years old and had work experience of 14 years; the majority (68%) had a background in economics. 10% were foreign students. One of them already defended her thesis, and four of them are in the process of defending their thesis.

1.2.3 Designing lectures and courses – basic curricular decisions

Teaching objectives

The two main ideas for designing the courses are the life cycle concept of ventures and the target to develop entrepreneurial mindsets and behaviour using a wide variety of different pedagogical methods.

With regard to the **life cycle concept**, the course content covers the foundation of a business, the initial development phase, the growth phase and the phase of maturity. The concept is applied to different functions, for example marketing, in which the activities differ by phase of a venture.

The second basic idea for designing the lectures is the target of developing an **entrepreneurial mindset** – i.e. being proactive, innovative and responsible for own choices. With regard to this idea, the focus is not only on the content, but also on the way and the methods through which the content is delivered. The professors use drama, role-play, practical cases, experiential learning and gaining experience from guest speakers and from practice. The target is to confront students with real problems from practice, not



only with regard to the topic of entrepreneurship but also from a wider scope, discussing this problem in the classroom and with practitioners. For example, in business ethics, the students were confronted with real examples of ethical and unethical behaviour partly from Croatia, partly from other companies in the world.

Teaching methods

Globalisation is a specific topic in EE at SUO, in which the students have to be proactive in acquiring the knowledge to play a real life situation in a **drama**: First the students have to find people outside of the classroom with a non-economic background to do an interview with, for example, school teachers or physicians in a hospital. Then they conduct the interview on the topic of globalisation and the question of how it affects the interviewed person in his or her real life, and how this person anticipates or reacts to such changes. After writing a report on the interview, the students have to develop a drama in a small group presenting the topic of globalisation in different roles. Professor Allan Gibb, a former Professor of Small Business Management based in Durham, United Kingdom, and Joan Gibb, his wife, a drama teacher in Durham, introduced the drama approach. Several SUO lecturers from Osijek were “shadowing” them to acquire skills to use it as a teaching method. The students are very fond of this drama method as it provides real life experience while having fun. This was mentioned not only by Prof. Singer but also by an interviewed programme participant having used the drama method.

A key factor for the success of teaching and learning may be the method of **team teaching**. It is applied in almost all classes. Beside a University professor, a guest speaker is invited to join the class to give practical insights and to take part in the discussions. Further people with other backgrounds are invited, too. For example, the drama is explained by an actor as a guest speaker. All students interviewed for this case study asserted that team teaching in the programme is much more interesting than “ex-cathedra teaching”. It constitutes one of the key strengths of the EE programme and a main reason why they chose the programme.

The ideas for courses, course contents and **methods stem mainly from US universities**. SUO teachers learned about related approaches in visits to US universities, teacher training sessions, external lecturers or from other people in Prof. Singer’s network (see also the list in chapter 1.2.5.). For example, the model of team teaching was adopted from Prof. Jerome Katz, St. Louis University. The use of cases in teaching and the roleplaying method was learned at Harvard Business School in a teachers training event. In addition, the ICES advisory board helped to design the curricula and especially to choose new methods from a pedagogical point of view. “They pushed us strongly to experiential learning and team teaching [and] out of traditional classroom thinking” (Prof. Singer).

1.2.4 Instructors: teachers and mentors

Involving international experts

In a situation of limited human and financial resources, the interviewees characterised the SUO’s strategy with regard to teachers and mentors by two elements: Involving external teachers, either internationally recognised professors or lecturers from practice, and building up internal competent staff.



At the start of the programme, no one from local University personnel was specialised in entrepreneurship. Thus, external experts like Allan Gibb from Durham University and Antti Paasio from the University of Turku did most of the teaching. Today, professors from abroad still play an important role, which is recognised by the students as a key strength of the programme. Additionally, as mentioned above, in those offers applying the concept of team teaching, an external lecturer from practice is present in almost all classes. Many of them are past students of the entrepreneurship programme.

Real entrepreneurs and guest speakers as teachers

The following entrepreneurs and practitioners deliver course contents as teachers. They share the offices with younger faculty members:

Name of entrepreneur/teacher	Company, position	Course
Natalija Pekic	Studio Karizma, interior studio, owner	Family Business
Igor Medic	Color Trgovina, Manager	Contemporary Business Models
Boris Lauc	FINA, Regional Centre Osijek, Director	Consultancy
Aleksandar Erceg	Kandit, Head of Purchasing Department	Franchising

Furthermore, 18 regular guest speakers complement the EE courses in the undergraduate and graduate programme in entrepreneurship (see full list in the Annex).

Mentors

All SUO professors and lecturers above assistant level are entitled to be mentors, i.e. on graduate level 25 lecturers and on postgraduate level 21 lecturers can be mentors. The mentors help students in their individual or team projects and in their individual final thesis. In mentoring students' projects, especially on graduate level, practitioners can also be involved as co-mentors. At the moment, four to five practitioners co-mentor students' projects. In the doctoral programme, mentors and co-mentors can be professors from other universities. In sum, 23 local and foreign lecturers (e.g. from the partner universities in Turku, Durham, Maribor and Klagenfurt) are involved as mentors for the doctoral students. For all degree levels, professors have quota limits. For example, at the doctoral level a professor cannot mentor more than four doctoral students at a time.

1.2.5 Management of entrepreneurial education

Internally growing competent staff

Prof. Singer's strategy was to build up local staff in the medium to long term to make the programme more stable and not dependent on foreign lecturers: "I think it is very good to have foreigners, but if you rely so heavily on them it is very fragile." In order to build up competent staff, the **method of "shadowing"** was used: Younger faculty members were assigned to experienced external lecturers, building up competence by visiting the classes and working together with the external lecturers. Until now, the unit has developed four associated professors in this way.

Another key element for teachers' development was training sessions carried out mostly by international staff, either in Osijek or abroad:



- 1998 – 2000: Consultancy training (Piotr Korynski, Open Society Institute, New York, Director of the Economic Development Programme), in Osijek.
- 2001: Case study teaching (Susan Harmeling, professional case writer for Harvard Business School), in Osijek.
- 2002: “Train the trainer” – Workshops on how to design a course, how to identify course outcomes, how to identify expected competences to be built (with Joan Gillman, University of Wisconsin Business School, US, and Deborah Laurel, independent consultant), in Osijek.
- 2004: Proactiveness and initiative in “authentic leadership” (Susan Skjei and Barbara Lawton, both Naropa University, US), combination of online and on-site education, in Osijek.
- From 2004 (on a yearly basis): Case study approach in “microeconomics of competitiveness”, Prof. Michael Porter, at Harvard Business School, Boston, US.
- 2005: “Experiential Classroom” – a three day training programme for lecturers in entrepreneurship, at Syracuse University, US.
- 2008: “European Entrepreneurship Colloquium for Participant-Centred Learning (EECPCL)“, at Harvard Business School, Boston, US.
- 2010 – 2012: European Entrepreneurship Education Summer School - three workshops: at the University of Turku, Finland, Aarhus Business School, Denmark, and J.J. Strossmayer University in Osijek, Croatia.

Prof. Singer emphasised that through those training events the EE teachers from Osijek gained valuable experiences. Many of the lecturers participated in several of the events.

Five younger faculty members also participated in several doctoral workshops around Europe during the work on their doctoral thesis. This helped them to formulate their research questions better and develop contacts (see list in the Annex).

1.3 Extra-curricular activities related to entrepreneurship education

Overview about extra-curricular activities

There are four major extra-curricular activities at SUO related to EE: community work, the initiative “Entrepreneurs Without Borders”, consulting work and a business plan competition. Exhibit 1-2 provides an overview.

Exhibit 1-2: Overview about extra-curricular EE activities at the University of Osijek

No.	Name	Contents	Target group	Offered since	No. of participants
1	Community Work	Projects "Big Brother/Big Sister" and "Contribution to the Community".	Students from Faculty of Economics	2009	Average of 80 students per year
2	Entrepreneurs Without Borders	Projects to solve local economic and social issues, charity events, study trips	Students from all faculties	2009	Average of 50 students per year
3	Consulting	Consulting projects for small and medium-sized companies	Graduate and post-graduate students	2000	Average of 30 students per year



4	Business Plan Competition	Concept ideas, training on business planning, business plan competition	Students from all faculties	2012	Average of 30 students per year
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Community work (Volunteering Programme of Graduate Programme in Entrepreneurship)

The Volunteering Programme of the Graduate Programme in Entrepreneurship (VpsP)¹³ was founded at the Faculty of Economics in Osijek in 2009. Its aim is to encourage students to behave proactively, to develop social responsibility as well as to develop knowledge and skills further. The two major activities of this programme are the projects "Big Brother/Big Sister" and "Contribution to the Community".

"Big Brother/Big Sister" is a project supporting mentorship between adults and disadvantaged children, using the format of an internationally known concept. The project was designed in co-operation with the children's home "Klasje" in Osijek. 15 students of the Faculty of Economics in Osijek help children of different ages in their everyday school obligations and socialisation. It is a voluntary programme that started as a part of the EE programmes and is open to all students now.

The project **"Contribution to the Community"** is designed as a mandatory part of the course "Entrepreneurial Skills I" at undergraduate level for students being enrolled in the entrepreneurship programme. Originally, the University started with offering real volunteer work. However, the students failed right at the beginning because they were not interested in volunteering. Therefore, community work is now obligatory for receiving the final grade and passing the course. However, Prof. Singer mentioned that many students continue the work on a voluntary basis after finishing the course.

Entrepreneurs Without Borders (EWOB)

Entrepreneurs Without Borders (EWOB)¹⁴ is a non-governmental student-led organisation founded in 2008 at the University of Illinois in Urbana-Champaign, USA. The first partner chapter was established at the University in Osijek in 2009.¹⁵ EWOB offers young people the opportunity to connect with communities around the world and develop business-based projects that solve local economic and social issues. Students from all faculties develop different types of projects and co-operate with local entrepreneurs through consultation projects and marketing plans. In addition, charity events and study trips to the USA and in Croatia are organised.

Consulting

Students finishing the graduate and postgraduate level can take part in consultancy work for small and medium-sized companies in the region. The activity was designed through learning from the curricula of similar programmes at the University of Wisconsin and the University of Illinois at Urbana-Champaign in the US. In Osijek, students are involved in consultancy work in three ways:

¹³ See photos on <https://www.facebook.com/volonteri.vpspa>. The programme is led by Dr. sc. Julia Perić.

¹⁴ See: <http://www.entrepreneurswoborders.org/>.

¹⁵ The chapter in Osijek is followed, controlled and counseled by Prof. Sunčica Oberman Peterka and Dr. sc. Anamarija Delić.



1. Through projects which are an obligatory part of specific courses (e.g. the course on growth strategies for SMEs).
2. On optional basis as part of other courses.
3. Through collaboration with the Centre for Entrepreneurship or the Legal-Economic Clinique, a joint project between the Law School and ICES.

An academic consulting company does not exist but is planned. Up to now, 415 students have participated in the activity, mostly pro bono. Seven students worked on a commercial basis on paid consultancy projects.¹⁶

Business Plan Competition

In 2012, the undergraduate programme in entrepreneurship joined the Richards Barrentine Values and Ventures Business Plan Competition at the Texas Christian University in Fort Worth, US. The business plan competition focuses on ideas that “impact society in meaningful ways. (...) Plans must demonstrate a societal or environmental need to be filled, as well as the profitability of the business”¹⁷. The business plan competition in Osijek started with the undergraduate programme in entrepreneurship at the Faculty of Economics but is open now for students from all faculties.¹⁸ Students in teams of not more than three apply with concept notes describing their ideas, and the jury – consisting of professors from the Faculty of Economics and local entrepreneurs – chooses the five best ideas. These students then pass a short training course about business planning. Afterwards they are obligated to develop and present their business plans. The jury elects the best business plan and the winning team is awarded a trip to the Texas Christian University in Fort Worth to participate in the business plan competition there.

1.4 Institutional aspects of entrepreneurship education

1.4.1 Organisational set-up and change of EE

Planned organisational changes to make EE available to all students

The SUO's EE team has two targets for the future: First, to include all entrepreneurial programmes at SUO in the University's International Centre for Entrepreneurial Studies (ICES), serving all students of the University and; Second, to develop ICES from its current status of a rather virtual unit that uses the staff and resources from the Faculty of Economics, to an organisational unit with its own staff and financial autonomy. The vision paper of ICES states that “we want to establish an international business school in entrepreneurship.”¹⁹ The ICES logo, a giraffe, manifests the type of leadership and

¹⁶ The course is led by Dr. Anamarija Delić, Boris Lauc, MSc, and Zoran Mlinarevic, postgraduate student on specialization level. The work is partly done in cooperation also with visiting lecturers and experienced consultants, who are members of the UNESCO Consultancy group.

¹⁷ See <http://www.neeley.tcu.edu/vandv/>.

¹⁸ The programme is led by Prof. dr. sc. Sunčica Oberman Peterka.

¹⁹ See <http://www.ices.hr/en/our-vision-2/>.



culture in the entrepreneurial team: "Giraffes have long necks and a good overview; when sleeping they always have one eye open being alert, and they have the biggest heart of all animals" (Prof. Singer).²⁰

The reason for seeking to include all EE programmes in ICES at University level is that all students could take part in the lectures. Prof. Singer referred to the Centre for Entrepreneurial Learning at the University of Cambridge as a role model, which provides entrepreneurial education for all students of the university.²¹ At the moment, some SUO students, for example from the Faculty of Engineering, do not have access to the programme mainly due to organisational reasons: The distance of 2 km between the two faculties is seen as too long and the lecture times conflict with each other. The target for the future is to have a location accessible to all students of the university, including engineering, to spread entrepreneurial mindsets among all students. In order to achieve this, the lectures are supposed to be held at certain times, which are blocked for the other faculties to have their faculty specific lectures.

Moreover, the change from the organisational level within the faculty of economics to the university level should support the view that entrepreneurship is not seen as a part of economics, which happens very often. As Prof. Singer said, "We would like to send the message that entrepreneurship is seen as interdisciplinary." The target to have a separate organisational unit on University level had been the target from the beginning of the programme. As the general environment was not supportive enough according to an interview partner, the programme had to start within the Faculty of Economics.

There is no top management position related to EE in the University's hierarchy.

Shifting EE leadership

Another challenge related to institutional development of the programme is the high dependency on one person, Prof. Singer. Although being Prof. Emeritus at the time of writing this case study, she is still active almost full-time, especially in the postgraduate and the doctoral programme. First steps have been taken to hand over the operations and make the offers sustainable. Prof. Suncica Oberman Peterka has the full responsibility for the entrepreneurial unit including administration and course planning. Prof. Peterka received a Master of Science degree as a student of the first cohort of the entrepreneurship programme. She was Prof. Singer's assistant and her doctoral thesis focused on the "entrepreneurial university".

Today Prof. Singer is not active anymore in the undergraduate programme. She mentioned the danger that team members need personal capacity for other obligations in the University and will hence not have enough time and energy for the development of the entrepreneurship programme. For example, Prof. Peterka is also Vice Dean of the Faculty and young professors have to publish scientific articles to progress in their career.

1.4.2 Legal barriers to EE

While Croatian higher education law is not a barrier to bringing guest speakers from the field in the classroom, it does not recognise adjunct professorship or professors from the field who can teach a complete course. This has been a legal barrier to the development

²⁰ See <http://www.ices.hr/en/why-giraffes/>.

²¹ See <http://www.cfel.jbs.cam.ac.uk/>.



of EE at SUO. According to Croatian law, it is not possible to be in charge of the whole course at the University without having a PhD degree. This makes the combination of academia and practice much more difficult. The University eludes the restriction by building tandems of academics and practitioners with various degrees of mutual engagement.

1.4.3 Developing entrepreneurial mindsets

According to Prof. Singer, a first step in developing entrepreneurial mindsets at SUO has been achieved: Everyone at the University – students, faculty staff and management – is aware that the EE programme as well as the related activities and organisations exist, and that these are also recognised internationally. Moreover, many members from different university units and other faculties (e.g. arts, electrical engineering, medicine) contact the EE team to develop projects related to entrepreneurship, of which some are already running. A good example is the business plan competition which started only for students in the EE programme. Now all SUO students can participate, leading to interdisciplinary teams in the competition.

In sum, although not everyone at SUO has developed an entrepreneurial mindset, the awareness of the need to develop entrepreneurial mindsets exists throughout the University.

1.5 Outreach to external stakeholders of entrepreneurship education

Initiating institutions for an entrepreneurial ecosystem on one's own

In addition to building up relationships with external lecturers, international universities, and local practitioners, Prof. Singer and her team engaged in founding institutions in the university's environment that are essential for developing an entrepreneurial ecosystem.²² This can be considered a special type of outreach: Since important external stakeholders to be reached out did not exist in the University's proximity, the university initiated their foundation. After the war from 1991 to 1995 there was no entrepreneurial ecosystem in place in the Osijek region. There were no government policies supporting entrepreneurship, no business incubators and no accelerators. "Those words were unknown to us 15 years ago", Prof. Singer said.

Most of the management positions in the following institutions are held by first cohort students from the SUO's EE programme. Prof. Singer believes that Osijek today is the Croatian region with the best entrepreneurial ecosystem.

Graduated EE students from SUO have taken managing positions or are in expert teams of various business support institutions around Croatia, e.g. at the Istrian Development Agency (Pula), in the Centre for Entrepreneurship (Pakrac) and in the Development Agency of Vukovar-Srijem County (Vinkovci).

²² See also EC (2012), p.35.



Finance for local enterprises: NOA

Recognising that there was a need for financing start-up and growth of local enterprises, Prof. Singer took a leading role in establishing the **microfinance institution NOA**.²³ NOA was based on a donation from the USAID organisation and with the help of the Open Society Institute, New York, in 1996. There are estimations that NOA helped maintain approximately 3,500 jobs and create 1,500 new jobs in the Osijek region.²⁴

Currently the SUO's EE team is negotiating with Erste Bank Oesterreich, the oldest Austrian bank, in order to get seed money for entrepreneurial students in the future.

Entrepreneurship training: Centre for Entrepreneurship

Beside the challenge of financing new enterprises, there was also a need for training. Hence, the **Centre for Entrepreneurship**²⁵ was founded in Osijek in 1997. As the University at that time rejected the idea of the Centre for Entrepreneurship, it had to be founded outside. The Centre received an initial funding of 30,000 US dollar from the Open Society Foundation, by George Soros²⁶. The original founders were Prof. Slavica Singer, Prof. Zeljko Turkalj (both from the Faculty of Economics), Prof. Vlasta Pilizota (Faculty of Food Technology), Zita Pleslic, Damir Taslidzic (business sector), Zlatko Benasic and Prof. Vilim Herman (local government). The Centre offers a variety of services for those who want to start a business or grow an existing one. Some of those services are free of charge support and training for entrepreneurs, for example in business planning. Until now 7,000 people have asked for advice and there are 200 regular users.²⁷ Several EE teachers from SUO are actively involved in the training programmes of the Centre for Entrepreneurship. After the initial funding, the Centre was based on funding through projects, not depending on direct funding from the national or local Government. Currently, Ms. Darija Krstic, a former Master of Science and a recent PhD student in Entrepreneurship and Innovativeness, runs the Centre with a team of nine persons.

Policy think tank CEPOR

After launching EE at the University in 2000, the **policy think tank CEPOR** in Zagreb was founded in 2001 by several institutions, including higher education institutions, organisations supporting SMEs and associations of entrepreneurs. CEPOR connected with governmental organisations with the target of increasing policy support for entrepreneurship and SMEs.²⁸ Several researchers and teachers from SUO are actively involved in CEPOR projects, especially in leading the Global Entrepreneurship Monitor survey for Croatia. CEPOR is run by Dr. sc. Mirela Alpeza, a former Master of Science and PhD student in entrepreneurship and innovativeness.

²³ See <http://www.noa.hr/>.

²⁴ See <http://www.ices.hr/en/how-it-all-started/>.

²⁵ See <http://www.poduzetnistvo.org/centar/>.

²⁶ See: <http://www.opensocietyfoundations.org/about>.

²⁷ See <http://www.ices.hr/en/how-it-all-started/>.

²⁸ See <http://www.cepor.hr/en/about-us.html>.



Business incubator BIOS

The **business incubator BIOS**,²⁹ owned by the Municipality of Osijek, was founded in 1996. After more than five years of not really finding its role, it was revitalised in 2002 by engaging Igor Medic, at that time Master of Science student in entrepreneurship. BIOS provides space, production facilities and business related services to entrepreneurs. The Centre for Entrepreneurship and the University's EE team developed the business model for BIOS, with financial help from the Open Society Institute, New York. Today, BIOS is also led by Jean-Pierre Maricic, postgraduate student in entrepreneurship.³⁰

Regional centre for promoting entrepreneurship

In 2002, Tera Tehnopolis, "a regional centre for promotion of research and innovative entrepreneurship"³¹ was founded through a co-operation between the University and the local government. It had the target to establish and develop a technological and science park in Osijek. In order to promote entrepreneurship, Tera Tehnopolis runs an idea competition event on an annual basis, supporting young people with innovative ideas.

Involvement of external stakeholders in university boards

In the official Board of the University, none of the EE guest speakers has a position. However, especially for EE programmes, an informal Board for the Dean exists, in which some of the guest speakers from the field are involved.

1.6 Impact and lessons learned

1.6.1 Measuring impacts of the entrepreneurship education approach

Overview about impact measurement methods applied

As regards **course evaluation** at SUO, there are two student surveys at the graduate level: one conducted by the University, the other by the Faculty of Economics. Both surveys take place at the end of the semester. However, the surveys do not include information about the entrepreneurial thinking and behavior of the students.

However, **ICES keeps track of a part of the EE alumni** – of those who respond to e-mails sent out by the unit. From the 360 students of the EE programmes (former Master of Science degree and postgraduate University Specialist degree) whose contact details are available to ICES, 39 students have their own business. Out of those, 16 were started during or immediately after the programme. All of the students were part-time students. At the time of studying, some were employed or already had their own business. Some businesses experienced either improvement or strategic repositioning during their owners' enrolment in the EE programme.

In addition, findings from the Global Entrepreneurship Monitor and qualitative individual statements substantiate the impact of the EE programmes and the team's activities, as described in the following.

²⁹ See http://inkubator.hr/en_UK/.

³⁰ See http://inkubator.hr/en_UK/about-us/bios-team.

³¹ SUO (2011), p.108.



Findings from the Global Entrepreneurship Monitor

Compared to the other parts of Croatia, the regions of Slavonia and Baranja, with Osijek as the largest city, have a higher motivation for entrepreneurial activity, seeing new businesses as an opportunity. This can be shown by analysing data from the **Global Entrepreneurship Monitor (GEM) for Croatia**.³² Despite having the lowest GDP per capita and the highest unemployment rate, the Osijek region is ranked first in motivation for entrepreneurial activity among the seven Croatian regions. Its entrepreneurial motivation index is 2.66, while the Croatian average is 1.78.³³ This was not always the case. Up to 2008, the motivation index in the Osijek region was below 1, for example 0.5 in 2006. This means that new businesses were born rather out of necessity due to unfavourable conditions.

However, the **Total Early-Stage Entrepreneurship Activity (TEA) index**³⁴, which is part of the GEM, indicates for 2011 that in the region of Slavonia and Baranja the level of entrepreneurial activity is still lower (4.72) than in the other parts of Croatia (7.32). According to Prof. Singer, the level of entrepreneurial activity in Slavonia and Baranja was hit more strongly by the recession than in other parts of Croatia. The TEA index for Slavonia and Baranja was 8.84 in 2006, which was comparable to the Croatian average (8.58), catching up from a very low level in 2003 (Slavonia and Baranja: 1.00; Croatia: 2.56).

Qualitative substantiation of the impact of SUO's EE programmes

While data from GEM and TEA do not allow direct conclusions about impacts of the SUO's EE programme on the regional economy, individual statements may substantiate such an impact in a qualitative manner. One interviewee, for example, who took part in the first cohort of the Master programme, sold his former business and focuses now on a new one. Analysing his former business better and receiving advice from an external lecturer during the course, he realised that his business was not as profitable as he thought, and that he was not supporting it with full dedication. Another interviewee with a background in agricultural engineering started a consulting business next to his management job in a larger company. He acquired part of the financial skills and the University specialist degree with the programme. He stated that it paid off quickly because with the first consulting job he gained the sum he had paid for attending the EE programme.

In addition, the institutions established for developing an entrepreneurial ecosystem as well as their performance as described above (see section about "outreach") may likely have had a positive impact on entrepreneurial mindsets and behaviour in the Osijek region. Their viability indicates success in developing an entrepreneurial ecosystem in and around Osijek.

³² See Singer (2007), GEM (2012).

³³ See GEM (2012), p. 75. A high motivation index (TEA opportunity/TEA necessity) indicates that the businesses are created more seeing them as an opportunity rather than as a necessity for example due to unemployment, see Singer (2007), p. 11.

³⁴ The TEA index shows percentages of adults aged 18 to 64 years who have businesses not older than 42 months, see GEM (2012).



1.6.2 Lessons learned

One of the key lessons to be learned from the case of the University of Osijek is that **even in an economically and culturally unfavourable environment it is possible to establish an entrepreneurship education programme and to develop entrepreneurial mindsets**. Applying systems thinking and the effectuation principle with the leadership of Prof. Singer, the University has gradually built an entrepreneurship ecosystem and EE programmes despite limited resources. She brought recognised international lecturers to Osijek and developed her own, competent faculty staff. The Osijek case can thus be regarded as a role model for developing EE and an entrepreneurial ecosystem in other unfavourable environments.

Analysing the case from a human resource management perspective, it can be recognised that **the person responsible for the programme was the key to its development and the establishment of the related ecosystem**. In order to succeed in an unfavourable environment, the responsible person has to be entrepreneurial by him- or herself, proactive and resistant to failures and drawbacks. He or she must have networking and relationship building capacity and should be able to initiate enthusiasm among the team and the wider ecosystem with an entrepreneurial vision. In addition, the autonomy to act combined with trust and support, as received from the former Dean Prof. Dr. Željko Turkalj can be viewed as essential for the development of the entrepreneurship programme.

Furthermore, the **advisory board with experts from abroad proved to be a successful model** giving external advice of international best practice, pushing the team in Osijek towards changes in curricula, content and pedagogy. Such an advisory board – which might also include local entrepreneurs – could be a model for other universities.

Regarding EE itself, several aspects can be highlighted: The high amount of external lecturers from practice as well as from abroad using the method of team teaching increases the attraction of the programme for students, especially for those with work experience. Considering the restriction in current Croatian law on higher education that does not allow practitioners to teach full university courses unless they have a PhD, governmental institutions may be recommended to reconsider this barrier to EE. Moreover, the drama method can be seen as a good practice in EE.

Finally, the international approach of the doctoral programme can be regarded as especially valuable, with doctoral students taking classes at other European universities. An extension of this idea to European level with standards in doctoral classes, comparable to the ECTS system on the Bachelor and Master level, can be regarded as a development potential for other EU universities offering entrepreneurship education.



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Research for this case study was conducted by Dr. Lutz Ellermann, expert in innovation management, for empirica GmbH on behalf of the study for supporting the entrepreneurial potential of higher education (sepHE). Sources and references used include desk research plus:

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 - o First interview: 27.6.2014, 8.30-10.00, Skype.
 - o Second interview: 2.7.2014, 8.00-9.00, Skype
 - o Third interview: 19.7.2014, 9.00-10.30, Hotel Waldinger, Osijek.
 - o Fourth interview: 27.3.2015, 8.00-9.00, Skype
- Prof. Dr. Zeljko Turkalj, Rector, 18.7.2014, 8:30-9.15, rector's office, Sv.Trojstva 3, Osijek.
- Prof. Dr. Vladimir Cini, Dean, 18.7.2014, 9.30 - 10.15, at the faculty of economics, Gajev trg 7, Osijek.
- Prof. Dr. Suncica Oberman Peterka, Vice Dean, responsible for the entrepreneurship programme and a student from the first cohort, 18.7.2014, 10.15 - 11.00, at the faculty of economics, Gajev trg 7, Osijek.
- Prof. Dr. Sanja Pfeifer, lecturer in the entrepreneurship programme, 18.7.2014, 11.15 – 12.00, at the faculty of economics, Gajev trg 7, Osijek.
- Dr. Anamarija Delic, lecturer and Mr.Sc. Darija Krstic, director of the Center for Entrepreneurship, both of them former Master of Science students in entrepreneurship, 18.7.2014, 12.00 - 13.00, at the faculty of economics, Gajev trg 7, Osijek.
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Annex

Course details for SUO's undergraduate and the graduate programme in EE

UNDERGRADUATE

Compulsory Courses

Entrepreneurship
Corporate Entrepreneurship
Entrepreneurial Skills I
New Venture Creation I
Family Business
Financing entrepreneurial venture
Human Resource Management

Electives

Sales Skills
Business Ethics
Credit Analysis
Entrepreneurial Strategies

GRADUATE

Compulsory Courses

New Business Models
Creativity and Innovativeness
Entrepreneurial Skills II
Presentation Skills
New Venture Creation II
Financial Management for Entrepreneurs I
Entrepreneurial Management
Operations Management
Growth Strategies of SMEs
Leadership

Electives

Business English I
Entrepreneurship without borders
Competitive Intelligence
Introduction to Entrepreneurship Research
Entrepreneurial Marketing
Entrepreneurial Accounting I
Statistical Methods in Market Research
Franchise
Entrepreneurial information systems
International business and logistics
Business negotiation
Family Business Management
Business intelligence systems
Entrepreneurial Accounting II
Financial Management for Entrepreneurs II
Credit scoring
Multimedia Marketing
Consulting for SMEs
Contemporary financial instruments
Competitiveness
Business data analyses
Entrepreneurship in agri business
Entrepreneurship in Family farms
Entrepreneurship of Non-profit Organisations
Entrepreneurship in tourism
Economic theory of entrepreneurship
E-business
Business Ethics



Target Groups - Details

Graduate programme in entrepreneurship – pre-Bologna (Master of Science degree)

Enrolling in the graduate programme, the students had to fulfil the following requirements:

Bachelor degree students from pre-Bologna programme scheme (4 years of undergraduate program) from economics and law (direct enrolment), or from any other discipline with fulfilling the requirement of taking 2 to 4 additional courses (in economics) with the minimum average grade of 3.51 (span of grades: 1 - failure to 5 - excellent).

Split by the year and the type of enrolment, it can be seen that all the students were part time students, as it was not economically viable for them to enrol full time.

Graduate level	2000	2001	2002	2003	2004	2005	2006	2007	2008
	Number of students full time part time								
Entrepreneurship	0 24	0 26	0 31	0 20	0 21*	0 29	0 38	0 11*	0 40

*dislocated programme in Istria



Graduate students (pre-Bologna) can furthermore be characterised as follows:

Enrollment	Number of students	Age/ average	Working experience - years	Prior education %	Residence - %
2000	24	30	9,9	Economics 95,83 Engineering 4,17	Eastern Croatia 91,7 Northern/Western Croatia 8,3
2001	26	27,73	8,4	Economics 96,15 Engineering 3,85	Eastern Croatia 96 Northern/Western Croatia 4
2002	31	28,12	7,2	Economics 80,64 Engineering* Humanities* 19,36*	Eastern Croatia 96,66 Northern/Western Croatia 3,34
2003	20	31,15	7,8	Economics 75 Humanities* Engineering* 25* Biosciences*	Eastern Croatia 100
2004	21	31,95	10,9	Economics 52,63 Engineering* Humanities* 47,37*	Northern/Western Croatia 100
2005	29	26,76	7	Economics 72 Engineering* Humanities* 50* Bio-technical* Others*	Eastern Croatia 75,86 Northern/Western Croatia 3,45 Republic of Macedonia 20,69
2006	38	29	5	Economics 67 Engineering* Bio-technical 33* Humanities* Others*	Eastern Croatia 82 Northern/Western Croatia 5 Republic of Macedonia 8 Bosnia & Herzegovina 5
2007	11	30	6	Economics 43 Engineering* Humanities* 57* Others*	Northern/Western Croatia 100
2008	40	31	7	Economics 77 Humanities* Bio-technical 23* Engineering* Others*	Eastern Croatia 85 Northern/Western Croatia 15
TOTAL	240	29,52	6,7	Economics 73,25 Engineering* Humanities* Bio-technical* 26,75* Biosciences* Others*	Eastern Croatia 76,67 Northern/Western Croatia 18,75 Republic of Macedonia 3,75 Bosnia & Herzegovina 0,83



Undergraduate programme in entrepreneurship – after Bologna (Bachelor degree):

Most of the undergraduate students taking part in the programme have been enrolled full time, as the participant numbers show.

Undergraduate level	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	Total
	Number of students full time part time								
Specialisation in Entrepreneurship	28 3	61 13	51 12	71 9	28 7	24 3	21 3	16 7	300 57
Courses:									
Entrepreneurship – compulsory for all students from the Faculty of Economics	308 81	347 59	474 73	525 54	351 130	297 53	307 71	259 59	2868 580
Electives for all other students at the Faculty of Economics:									
Entrepreneurial Strategies	/	19 0	120 22	78 25	262 34	235 71	169 54	131 62	1014 268
Family entrepreneurship	/	177 23	39 4	39 8	54 5	32 10	23 8	19 24	383 82
Entrepreneurial Skills	/	23 5	37 4	44 7	69 6	/	/	/	173 22
Entrepreneurial Skills I	/	/	/	/	/	119 34	81 18	88 24	288 76
Entrepreneurship – elected by students from the Department of Culturology						50 0			50 0
Total							601 158		



Graduate programme in entrepreneurship – after Bologna (Master degree):

As well most of the students of the graduate programme after Bologna have been enrolled full time:

Graduate level	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	Total
	Number of students full time part time						
Specialisation in Entrepreneurship	18 0	26 3	27 0	58 34	37 19	39 10	205 66
Courses:							
Electives for all other students of the Faculty of Economics:							
New Venture II	18 0	26 3	27 0	58 34	37 19	39 10	205 66
Growth Strategies for SMEs	/	78 11	25 1	26 2	51 10	36 18	216 42
Entrepreneurial Skills	67 6	100 54	130 30	56 31	/	/	353 121
Entrepreneurial Skills II	/	/	/	120 99	127 106	121 64	368 269
Total					252 154		



Postgraduate specialist studies in entrepreneurship – after Bologna (specialist degree):

As the graduate programme after Bologna, the 1.5 year specialist programme targets students from small businesses, bigger firms, banks, local government and education having practical experience and but fulfilling the following higher level requirements:

Bologna Master degree students (3 years of undergraduate programme + 2 years of graduate program) and pre-Bologna Bachelor degree students (4-years study program) from economics and law (direct enrolment), or from any other discipline with fulfilling the requirement of taking 2 additional courses (in economics) with the minimum average grade of 3.51 (span of grades: 1 - failure to 5 - excellent)

As in the graduate programme pre-bologna (Master of Science degree), all the students enrol part-time as they continue working while taking part in the programme.

Post-graduate level (Specialist degree)	2007	2008	2009	2010	2011	2012	2013
	Number of students full time part time						
Entrepreneurship	0 33	0 35	0 29	0 22	0 27	0 22	0 7



Postgraduate specialists can furthermore be characterised as follows (average):

Enrollment	Number of students	Age/ Average	Working experience - years	Prior education %	Residence - %
2007	33	30	6	Economics 50 Engineering* Humanities* 50* Bio-technical* Others *	Eastern Croatia 90,9 Northern/Western Croatia 9,1
2008	35	30	5	Economics 74 Humanities* Bio-technical* 26* Engineering*	Eastern Croatia 97,1 Bosnia & Herzegovina 2,9
2009	29	34	8	Economics 51 Engineering* Humanities* 49* Bio-technical* Others*	Eastern Croatia 96,55 Northern/Western Croatia 3,45
2010	22	31	7	Economics 70 Engineering* Humanities* 30* Bio-technical* Others*	Eastern Croatia 86,36 Bosna & Hercegovina 13,64
2011	27	32	6,25	Economics 55,55 Engineering* Bio-technical* 44,45* Biosciences* Humanities*	Eastern Croatia 100
2012	22	31	6,28	Economics 54,55 Biosciences* Humanities* 45,45* Bio-technical* Others*	Eastern Croatia 100
2013	7	33	10,28	Economics 28,57 Humanities* Engineering* 71,43* Others*	Eastern Croatia 71,4 Northern/Western Croatia 28,6
TOTAL	175	31,57	6,97	Economics 54,81 Engineering* Bio-technical* 45,19* Biosciences* Humanities* Others*	Eastern Croatia 94,3 Northern/Western Croatia 3,4 Bosna & Hercegovina 2,3



Postgraduate PhD programme “Entrepreneurship and Innovation”:

The doctoral programme can be considered also as a part-time programme.

Post-graduate level (PhD degree)	2010	2012
	Number of students full time part time	
Entrepreneurship and Innovativeness	0 30	0 13

Further student characteristics of the postgraduate doctoral programme are the following:

Enrollment	Number of students	Age/Average	Working experience - years	Prior education %	Residence - %
2010	30	38	12,8	Economics 70 Engineering* Humanities* 30* Others*	Eastern Croatia 43,33 Northern/Western Croatia 43,33 Southern Croatia 3,33 Bosnia & Herzegovina 3,33 Finland 3,33 USA 3,33
2012	13	37,76	15,4	Economics 66,67 Engineering* Bio-technical* 33,33* Humanities* Others*	Eastern Croatia 38,46 Northern/Western Croatia 30,77 Southern Croatia 15,39 USA 7,69 South Africa 7,69
TOTAL	43	37,88	14,1	Economics 68,34 Engineering* Bio-technical* 31,66* Humanities* Others*	Eastern Croatia 44,4 Northern/Western Croatia 37,2 Southern Croatia 6,9 Bosnia & Herzegovina 2,3 Finland 2,3 USA 4,6 South Africa 2,3

Doctoral workshops of younger faculty members

Doctoral workshop at the Babson Research Conference, Glasgow, 2004

„Research Methodology and Techniques“, doctoral workshops, Gate2Growth Academic Network in Entrepreneurship, Innovation and Finance, 2004, 2005, 2006 (Vlerick Management School, Nottingham University Business School, IESE Barcelona)

ESU – European Summer University on Entrepreneurship Education Research, University of Tampere, Hameenlinna, Finland, 2006

EFMD doctoral workshop, at the EISB conference, Ljubljana, 2007

Doctoral seminar, at the PODIM Conference, Maribor, 2009

Entrepreneurship Education and the Doctoral Student, Centre for Entrepreneurial Learning, Durham University, as part of the ICES project, 2010

DREAM Doctoral Retreat / Seminar on Entrepreneurship as Making, led by Saras Sarasvathy, Osijek, 2010



Regular guest speakers in the undergraduate and graduate programme in entrepreneurship

No.	Name of the guest speaker	Company
1.	Aleksandar Paradinovic	HEP d.d., (Croatian Electro Energy Company) engineer
2.	Darija Krstic	Centar za poduzetnistvo Osijek (Center for Entrepreneurship Osijek), director
3.	Dario Vukovic	Metronet d.d., owner
4.	Dusko Kostic	Association „Luna“ - NGO
5.	Gordan Sestic	Intuit d.o.o., owner
6.	Ivan Matejasic	SPIN Informatica d.o.o., owner
7.	Ivan Saric	Hrvatska udruga poslodavaca (Croatian Employers Organization), advisor
8.	Jelena Kamenko	Volunteer Centre Osijek – NGO
9.	Marijana Bosnjak	Kinematografi Osijek d.o.o., director
10.	Mijo Roncevic	Roncevic i dr. j.t.d. Osijek, owner
11.	Miroslav Varga	Escape d.o.o., IT expert
12.	Nikoleta Poljak	Association „Salter“ – NGO
13.	Predrag Dotlic	Jelovica d.o.o., owner
14.	Tomislav Bilic	Inchoo d.o.o., owner
15.	Tomislav Buljubasic	Siemens d.d., IT expert
16.	Zarko Gajic	Mono d.o.o., owner
17.	Zeljko Erkapic	Klaster poljomehanizacije d.o.o. (Agricultural Equipment Cluster Ltd), director
18.	Zoran Mlinarevic	Hrvatska lutrija d.d. – Regional center, director