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# Interview:

Prof. dr. sc. Damir Medak

> VICE-DEAN FOR TEACHING AND STUDENTS

## What is your opinion on the new highschool leaving exam and its implementation?

- Highschool leaving exam is a very good thing that equalizes possibilities of all students to enroll into higher education facilities. The only problem that arises are vocational schools, since all parts of the exam are adjusted to the gymnasium programs. The question that occurs is what technical universities should now do. However, this type of exam is much better than any classification exam because the student has more options now and can apply to more higher education institutions. It reduces travel costs, everything is transparent, it diminishes misuse of authorities during enrollment.

## How come that some faculties still have both highschool leaving exam and entrance exam?

- Yes, there are institutions that still have that extra entrance exam. The same happened in Slovenia, where a half of faculties had entrance exams and another half didn't have them. After three years, they decided to cancel extra exams. If the highschool leaving exam functions in Norway, Australia, Slovenia, I hope it can function in Croatia as well. All the students entering highschool should have been informed about the exam they would be taking in 4 – 5 years so that they could have decided what school and even already what faculty to choose.

## Undergraduate studies at the Faculty of civil engineering in Split and 30 students enrolled. How would you comment that?

- It should not be bad, because the stand of the University of Zagreb is that it should focus on graduate and postgraduate studies where students could acquire advanced vocational and scientific knowledge. At the level of the University, there should be decentralisation and especially of those faculties with a large number of students. The fact that „everyone“ studies in Zagreb burdens capacities of certain faculties, both when it comes to personnel and space. Students in Split will receive education from doctors of geodesy who used to study at the faculty in Zagreb.

## How satisfied are you with the Bologna process implementation at our faculty? Do you have any specific examples that show where the Bologna process is better than the old system and in what aspects can it be improved i.e. it shows imperfections?

- As time goes by, I'm more and more satisfied with the Bologna process implementation. More and more professors introduces methods of following students continuously during one term, there are more and more students enrolling to graduate studies at our faculty who finished their undergraduate studies at another faculty, the interest in international student exchange rises. Maybe it is just my opinion, but I think that the first wave of adjustment – with 220 students having enrolled 5 years ago to the first year of undergraduate studies – is through.

The instruction at the Faculty of geodesy has been like on Bologna during decades, but only in certain courses: colloquiums helping students not to take the whole exam but only a part of it, team work in small groups, assistant's help, common student practice. The new studying tempo where one course should be passed in the same academic year it has been taken is certainly an improvement compared to the old system, where the time between listening to a course and taking an exam was very often a couple of years. It all puts new tasks in front of students, but also in front of professors, since the ratio between given in class and wanted on the exam should be at least 1/1.

This system is very good and the new rules will show better and better results in time. It is very important that all participants of the process know all the rules and that they are not changed retroactively. The critical problem at the moment is lack of literature in Croatian and that is a task for professors.

## What is the procedure and what are the reasons for program changes at the undergraduate studies for example (is it slow or quick, effective and precise or), will there be more changes? Apart from that, what are the results of the program changes that have already been made?

- In summer 2009 the dean of the Faculty of geodesy formed special commission that should propose solutions for certain problems in the first part of the undergraduate studies. It was not an easy task, because the original version of the program had a maximum percent of allowed obligatory contents. On students' and professors' proposal, one of the courses was moved from the first to the second year. As recommended by the first generation of students who finished their undergraduate studies CAD and statistics were introduced. All courses that had more than 2 hours a week had their schedule equalized and a part of the contents was transparently transferred to other courses.

If you ask me for results, the most important change is the end of endless relisting to a course. It was defined that a course can be reentered only once. Students' interest for taking an exam suddenly increased. There is still a problem of the tactics of certain students who apply three times for an exam just to get to the commission. I believe that we will soon find solutions that will minimize such cases.

## Do you think that the profession can offer work for experts who finished their undergraduate studies and how come that the most or even all of them decided to enroll into graduate studies?

- There are still understatements when the baccalaureates are concerned, not only in our profession. The basic goal of the process is correct: shorter term to getting a degree. It is not only a statistic number of citizens with higher education in Croatia, but the end of the unacceptable practice in the old system, where students used to cut their studies after 3-4 years keeping only their high school degree.

#### **Could you please explain the differences between directions (geodesy and geoinformatics) on graduate studies in terms of works that will be done after graduation?**

- These two directions of the graduate studies don't draw a line forbidding one of them to do GIS and the other one engineer or satellite geodesy. There are two directions so that the work can be better with smaller number of students. Similar studies abroad have similar divisions: geomatics and geoinformatics, geodesy and GIS.

#### **In your opinion, who will have more jobs offered in the future geodets or geoinformatitions?**

- There won't be much of a difference. It used to be said that there would not be any job for geodets in countries that managed their land evidence. However, it has been shown that it is not so. Geodets need geoinformatitions and vice versa. Processing data that you didn't gather is impossible as well as gathering data you don't know how to use. As I as a young engineer of geodesy came to postgraduate studies at the Technical university in Vienna, one of the first tasks I got was teaching architecture students how to do a frontal cut by means of theodolite, and the second one was to connect two mountains in the Alps with a geodetic network. These are the examples of connection between geodesy and geoinformatics.

#### **The entry quota for the graduate studies this year is 80 students and next year there could be 200 candidates for this 80 places. How could and should this problem be solved?**

- The classification procedure for three years already has taken the average note of the exams during undergraduate studies into account and they have been divided with the length of the studies' duration. In such a way, those students are rewarded who finished their undergraduate studies in shorter period with better grades. Those students who won't be able to enroll to the graduate studies will get a chance to enroll to another graduate studies or to get a job according to their qualifications as baccalaureates.

#### **Is there a possibility to change the entry quota of the graduate studies?**

- There is always a possibility – it has to be in terms with the capacity of the Faculty. It is not realistic to expect that we enroll 200 students, because it would disable the level of quality needed for these studies.

#### **Is there a need for exams for those who haven't finished undergraduate studies of geodesy and geoinformatics and who want to enroll into graduate studies?**

- If we introduced those exams, there would probably be no more such candidates. The criteria on the graduate studies should be increased significantly and without exception ask of all the students who don't have enough foreknowledge to acquire it through extra activities. No administrative measure should restrict the sequel of the studies at other faculties (no matter that some faculties do that).

#### **Do the students on one direction, for example geodesy, of graduate studies take elective courses from another direction i.e. geoinformatics?**

- There should not be any obstacles. If you are at the same faculty and there is a course you want to attend in the classroom nextdoor, and you can't attend it, that is not good.

#### **How come that it often occurs that graduate studies students can formally choose 10 or more courses per term and that every year there are only 2-3 of them held so that they have to transfer to those courses they initially didn't want to take?**

- The purpose of elective courses is for students to adjust the program to their interests. For a course to be validated by the Ministry of Science, Education and Sports (MZOŠ), there should be at least 10 students enrolled into that course. The stand of the Faculty is that the lessons should not take place if there are less than 10 students. The reason for it is that when the Faculty sends lesson plans to MZOŠ, they cross those courses that have less than 10 students. However, if students organized themselves better, there would be more than 3-4 courses. It happens that there are two courses that all the students want to attend and a minority chooses other eight courses.

#### **Are there differences in graduate studies students' diplomas depending on their directions?**

- No, their diplomas are identical no matter what direction the student has finished, geodesy or geoinformatics. The qualifications of the graduate students are unique and should not be discriminated at no job they would like to do.

#### **The deadline for old system students and part-time studies is September 30, 2012. What will happen to those students who don't graduate until then?**

- The same thing that happens to those who passed all the exams except one they enrolled twice on the undergraduate studies. To be more precise, they will be forced to cut studies no matter how many exams they had left to pass.

#### **Will that be very strict or will they still have a possibility if they will have only one or two exams left?**

- The deadline will not be changed, because the Law allows studying until that deadline. All the students knew that on time, they got a solution from the Faculty of geodesy with the deadline until which they have to graduate.

### One personal question, did you use your graduate year?

- Yes, yes, I know what you mean, of course I used it. If we look 20 years backwards, there is a regulation that a 9-term studies may be finished in six years, i.e. maximum duration of the study was 1/3 longer than nominal. The same regulation is effective now: the so called graduate year is the right to end your studies in time of 4/3 of your nominal studies duration.

### Do the Bologna students have a chance to use their graduate?

- The rules are clear: 4/3 of the nominal studies duration. If the graduate studies last two years, it means that you need to graduate during two years and eight months.

### In your opinion, is our Faculty open to foreign students and how many of them are there at the faculty at this moment? In comparison, how many of our students has spent or is now spending a term/year at another University?

- From this year, with the support of the University, we will begin with the experimental courses in English, unfortunately in only 2-3 courses. Language barrier is a serious obstacle for the foreign students at our Faculty, because it is not logical that a foreign student must spend a year learning Croatian so that he can spend one term at our faculty. Our wish is to have 30 ECTS points in English that we could offer to foreign students. On the other hand, in the last 3-4 years, two to three students use international funds for studying abroad.

### Is there a possibility for our students to participate in the exchange somewhere abroad (in duration of one month, one term or one year, and does our faculty acknowledge the ECTS points acquired in this way?

- Yes, absolutely. There are certain Learning Agreements that need to be filled before going on an exchange and there are no problems in acknowledging the ECTS points. From this year, we are also a part of the ERASMUS program, and the exchange through CEEPUS program has been active for 4-5 years already.

### Do you think that the Croatian geodetic labour market is ready to accept such a big number of graduates and trainees with high and higher education who will graduate from the Faculty of geodesy?

- I don't know. I don't accept the logic by which all public universities in Croatia represent „goods factories“ for the labour market. The universities are here for the society and they teach young, creative individuals how to think independently and critically, on basis of scientifically proved facts. The University of Zagreb approves entrance quota in accordance with our space and personnel capacity. Since the introduction of the new study programs of geodesy and geoinformatics, the interest of the highschool students is 300-400 candidates on 100-115 places, which is great. Our job is to teach as many young people as possible, not underlying the trial to increase the quota over real capacities in that process. At the faculties, especially technical ones, the responsibility is enormous because the developed countries already have a lack of engineers and IT specialists.

### Is our diploma accepted and valuable abroad?

- The diploma of the Faculty of geodesy, by means of academic qualifications, was always accepted abroad and not only in Europe. The proof are many of our professors who had gone abroad on a postgraduate studies, that enabled them to get a doctor degree.

Nowadays, it is more often asked for a certain licence to do geodetic jobs abroad. The legislation of each country defines it and it can't happen that someone comes without licence or permissions and wants to do geodetic jobs. It is so in Croatia and in any tidy state in the world.

### In your opinion, what would be the ideal and at the same time possible model of paying student fees?

- The participation of the student in the costs of the study, popular fee, is a problematic occurrence at the publically financed universities. There is no ideal model. I would be the happiest person if the real costs of lessons improvement (modern geodetic instruments and equipment, books, magazines, informatic equipment, professors specialization, fieldwork, student practice) were paid to the Faculty from the state budget, so that we would be able to deal more with academic, than with administrative and accounting jobs. If the most recent moves of the University and MZOŠ are on track of gradual cutting of direct participation payment on the relation student-faculty, then it is a good way.

### How come that the colleagues who in the past got a degree of the engineers of geodesy could become authorized engineers and the ones finishing undergraduate studies at the moment can't? We suggest the analogy of engineers of geodesy and B.Sc. of today.

- Croatian chamber of authorized engineers of geodesy (HKOIG) has been founded much later than there was a title engineer of geodesy. In the transition period everyone with higher education degree could have entered the chamber upon meeting all the criteria. However, the one who decides who can enter the Chamber is the chamber itself and not the faculty. The entrance of the engineers at that time was an exception, and the stand of the Chamber today is that only the graduates of geodesy and geoinformatics can get an authorization.

### When the young student graduates, he surely has his own interests and is attracted to some branches of geodesy more than to other. However, he then faces the problem of existence insurance. Should he then be led by his own interest and do what he wants to do in life or go after money?

- The well known dilemma: is it better to work for less money and do what you want or to earn more money and do what you don't want to do. The majority will probably decide to suffer and earn more money than to enjoy and earn less. The aim should be to solve essential existential problems and then do what one prefers.

### Could you compare students' knowledge, work, possibilities and conditions for studying now and at the time you were a student?

- Times changed: it is easier to get data now, but extracting essential information and synthesis that gradually accumulates knowledge has become quite a challenge. 25 years ago we had a lot less but we worked harder, cooperated and exchanged knowledge. At that time we had only one computer in the building with 64 kB memory and still everyone who wanted to make programs could do that; nowadays there are 60 computers with terabytes of memory, internet and the percentage of those who make programs has not risen a lot. It is only one technical detail. More important is that the students are now more open minded, critical, ready to express their opinions and it should be encouraged further on.

### How come that the experts from other branches may and do works that the geodets and geoinformatitions are schooled for. For example, civil engineers who level, mechanical engineers who work with GIS?

- It is because there is no monopoly on knowledge. We are not and cannot be a guild, an isolated group closed to other people. Many important people in world history were geodets, because it is a profession that connects nature and society, field and office, technology and interpersonal communication. We are universally necessary and useful, we should be aware and proud of that. There just needs to be more of us.

### Compared to similar faculties abroad, our Faculty of geodesy in Zagreb stands...

- Our Faculty still stands very good: the only independent geodetic higher education institution, where 3-4 times more candidates want to enroll than it is accepted, with so many young, excellent assistants and doctors of science surely has a good perspective.

### It is evident that it came to enormous changes in all branches of geodesy during the process of implementation of computer and information technology in the last 15-20 years. How do you see those changes and do you maybe think of geodesy in 5, 10 or 15 years?

- It is a difficult question: if only 5 years ago someone told me that we would have detailed map of every single part of the world in our hands, the possibility of positioning with precision of 1-3 m, voice navigation, and all that for only 1 HRK daily, I would not believe him. Future predictions, development and accessibility of all technologies and their implementation in geodesy and geoinformatics is really ungrateful. That is exactly the point in which the interest of young people for this branch lies. That is why it is so interesting to have the honour to teach and make research at the Faculty of Geodesy.

## IGSM 2010

### Professor, how much and in what ways did you participate in organization and preparation of IGSM 2010?

- I, personally, together with the dean, had regular meetings with the organizers-students and we solved all the problems that appeared

together. I also participated with my presentation at the opening and with a workshop on laser scanning.

### Did you, as a student, participate in similar meetings and did you expect or hope that such a meeting will take place in Zagreb one day?

- At the end of the 80s, I used to participate as a student in geodesy and civil engineering student meetings: quizzes, sport events. In 1990 we recorded a short film using the faculty VHS-camera and we went to Graz – to the IGSM.

### Since you told us that you had participated in IGSM meetings, could you compare those meetings with the one that has been held this year?

- Unfortunately, we couldn't find the VHS-media that could say more than words. Our colleagues from TU Graz organized it very well: accomodation, professional, entertainment and cultural contents, everything was impressive.

### Could you tell us how did the faculty (professors, dean, other staff and students) accept such a meeting taking place and how was the support during organization and the meeting itself?

- The faculty made everything possible, maybe even more than allowed :). It would be awkward to point out individuals, you must have noticed that alone – young colleagues should be awarded on held lectures and workshops. I think that for both professors and students, it meant more than a week with almost no lectures taking place.

### What is important and valuable that the students get from such a meeting? Knowledge, experience, contacts...

- In the beginning it is always a little cultural shock, because all prejudice that in other countries and at other universities everything functions better usually turn out to be wrong. One can certainly learn a lot, maybe more about interpersonal relations and communication than about the branch. Contacts remain for a long time, I remember that meetings with the colleagues I met on IGSM in Austria had an important impact on my personal development.

### How can you describe the organization and realization of the IGSM 2010?

- First of all, the students started all the activities at the right time. I was lucky to see our students work, searching for sponsors, at the InterGEO fair in Karlsruhe, and later the results of it. Everything was made exemplary, without a single mistake. As if they had already done that 10-15 times.

### How would you grade the whole event and did your expectations come true?

- The grade is excellent (5). It was the most important event at the Faculty of geodesy in the last ten years. The echoes will be seen. ■