

More and More Students are Interested in Nuclear Engineering: POLIMI Professor About International Polytechnic Summer School

It is really hard to think of [International Polytechnic Summer School](#) without participation of leading international experts. Visiting professors and representatives of international companies come to Polytech [to share their knowledge and experience with students](#). Professor Marco Enrico Ricotti from Politecnico di Milano (Polimi) (Italy) in the intervals between the lectures told us about his impressions of International Polytechnic Summer School, its advantages, highly appreciated Polytech students and shared his opinion about the future of power plant engineering.



-Professor Ricotti, is this the first time you visit St. Petersburg?

-No, this is not the first time I give lectures to Polytech students. I was here for a Summer School and also for a [Winter School](#), so this is a third time for me.

-Could you describe your field of activity?

-I am an expert in nuclear engineering, and this is my topic here at Summer school. At Polimi I have worked as a Professor for 20 years. There I have taught Nuclear Power Plant and also have done researches in this field. In the last ten years my specific field was especially related to the small modular reactors, its technology and economic features, and the second topic were passive safety systems.

-What does it mean?

-It means safety systems for nuclear reactors, based on simple and natural forces without the need of human intervention, without the need of energy supply. So these are two main topics I deal with: small modular reactors and innovative safety systems.

-Are there any other spheres of activity you deal with?

-A year ago I was also appointed as the President of a state Italian company SOGIN. Its duty is to perform the decommissioning of the old nuclear power plants in Italy. We have four nuclear power plants, and also other nuclear facilities. So I have this duty to act as a President of this state company in charge of decommissioning issues.

-According to your experience, what teaching approaches do you find the most effective?

-I think the most interesting and effective teaching approach is soliciting students' active participation. The students should not only listen to a lecture. I have a classical way to teach, but during the classical lecture when I explain something to the students I put some examples, some questions, some exercises, a kind of a problem. I like very interactive lectures, and I am not very happy or satisfied when I talk for an hour. Of course, I can talk even for three hours, but anyway I like to be in close interaction with the students. And the students are happy of that.

-And how do you find our students at Polytech?

-I think they are very active. Each student has his or her own attitude and character. There are different cultures, different attitude, but in my opinion they are bringing a positive contribution. Diversity means more interaction, and this is definitely an advantage of the Summer School.

-What other advantages of the Summer School can you find?

-Both the professors and the students are more relaxed. You don't have to rush to the examination. And if you are attending a summer school it means that you are interested in this topic. Anyway, if you want to spend two or three weeks attending a school it means that you are more relaxed, but you are really interested. They are both positive issues.

-And what do you think about Polytech?

-It seems to me very dynamic, it is moving with big steps into the internationalization process. We had something similar at Polimi. 4-5 years ago we invested a lot of time efforts in order to push international attitude and moved all the Master of Science courses fully taught in English. It was a big step, a big effort, so I think that you are progressing at the same way as we did. Today you have a big diversity of [international educational programs taught in English](#). I think it's the most interesting way to proceed. It's a big opportunity for the students, and very fruitful for them and for their future.



-According to your professional point of view what is the future of power plant engineering?

-I think that the future is very challenging, but is very important for all the countries. Energy is a global problem. Especially if you look at the environmental issues you cannot solve the problem country by country or just with the domestic approach. If the global warming is real, you can solve it only with a global solution. So from the environmental point of view it is a global problem. It's a world problem. From the economic and industrial point of view energy is a very important sector in

every country. It is something that is very challenging not only for the environmental issues, but it is also a key aspect for the global economy and for the economy of the country. There is something that you need day by day, for the normal life you cannot imagine your life without energy, without transportation, without air conditioning, without electricity - so it is a very important issue. Nowadays there are a lot of students now who are interested in energy engineering. The number of them has increased a lot. Energy is a very complex item; it is connected with economics, politics, etc. But nevertheless I believe that this would be a trend for the next decades.

-What are the trends of the modern educational systems?

-New education opportunities: Massive Open Online Courses (MOOCs). This could be very useful, especially when you have an international classroom. The students come from all over the globe, and everyone has different background. MOOCs help them to prepare with the online material. Then I would like to note so called 'flipped courses'. The students get some topic and educational material, and only after their study they come to the professor, who interacts with them. It can be a project, but not a classical lecture. Also I like project-based learning. The class is divided into working groups, and the students learn how to work together.

-What do you advise to the students to be successful in their studying?

-Follow your real interest, but at first, of course, find it. When you define it, you have to put every effort in order to learn, to study, to attend courses that are most interesting for you. Interact very strictly with your professors and your colleagues, because learning is a dynamic process. You cannot learn only by attending lectures or reading a textbook. You need to interact with the teachers and those who know more than you, and also with those who are on the same level as you. Only during the interaction you can understand what you have really learnt.

-Professor Ricotti, thank you very much for the interesting interview! We wish you good luck in your pedagogical and research activity, and, of course, grateful students!

Дата публикации: 2017.08.24

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