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# RiskLab - a joint Teaching Lab on Hazard and Risk Management

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In the future natural disasters are expected to increase due to climatic changes that strongly affect environmental, social and economical systems. For this reason and because of the limited resources, governments require analytical risk analysis for a better mitigation planning.

Risk analysis is a process to determine the nature and extent of risk by estimating potential hazards and evaluating existing conditions of vulnerability that could pose a potential threat or harm to people, property, livelihoods and environment. This process has become a generally accepted approach for the assessment of cost-benefit scenarios; originating from technical risks it is being applied to natural hazards for several years now in Switzerland.

Starting from these premises “Risk Lab”, a joint collaboration between the Institute of Earth Sciences of the University of Applied Sciences of Southern Switzerland and the Institute for Economic Research of the University of Lugano, has been started in 2006, aiming to become a competence centre about Risk Analysis and Evaluation.

The main issue studied by the lab concerns the topic “What security at what price?” and the activities follow the philosophy of the integral risk management as proposed by PLANAT, that defines the process as a cycle that contains different and interrelated phases.

The final aim is to change the population and technician idea about risk from “defending against danger” to “being aware of risks” through a proper academic course specially addressed to young people.

In fact the most important activity of the laboratory consists in a degree course, offered both to Engineering and Architecture students of the University of Applied Sciences of Southern Switzerland and Economy Students of the University of Lugano.

The course is structured in two main parts: an introductive, theoretical part, composed by class lessons, where the main aspects of natural hazards, risk perception and evaluation and risk management are presented and analyzed, and a second part, composed by practical activities, where students can learn specific statistical methods and test and use technical software. Special importance is given to seminars held by experts or members of Civil Protection and risk management institutes. Excursions are often organized to directly see and study practical case studies (Eg. The city of Locarno and the lake Maggiore inundations).
The course is organized following a “classical” structure (it’s mainly held in a class or in an informatics lab), but students can also benefit from a special web portal, powered by “e.coursers” , the official USI/SUPSI Learning Management System , where they can find issues and documents about natural hazards and risk management. The main pedagogical value is that students can attend a course which is entirely devoted to dealing with natural and man-made hazards and risk, allowing them to resume geological, space planning and economic issues and to face real case studies in a challenging and holistic environment.

The final aim of the course is to provide students an useful and integrated “toolbox”, essential to cope with and to resolve the overwhelming problems due to vulnerability and danger increase of the present-day society.

The course has by now reached the third academic year and the initial results are encouraging: beyond the knowledge and expertise acquired, the graduate students, that are now for the most part working in engineering studies or private companies, have shown to have acquired a mentality devoted to understanding and managing risk.

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