



## **The Swiss Virtual Campus “Dealing with Natural Hazards and Risks, NAHRIS”**

**N. Bischof (1), and C. Lienert (2)**

(1) WSL Swiss Federal Institute for Snow and Avalanche Research SLF, Davos, Switzerland (bischof@slf.ch), (2) ETH Zurich, Institute of Cartography

The overall goal of the Swiss Virtual Campus project Dealing with Natural Hazards and Risk (NAHRIS) is to create a common educational course program that compiles the most recent knowledge in the field of natural hazards and risk management. Several Higher Education Institutes from all parts of Switzerland were involved in the realization of this Internet course platform. NAHRIS is primarily targeted at University students on the BSc level. However, it also enjoys growing popularity among researchers and practitioners employed in these working areas.

The main novelty of NAHRIS lies in the holistic examination of the natural hazard and risk management domain including technical, environmental and social aspects. Four of five learning modules address in a rather sectoral way the most prevalent issues such as Knowledge and Tools (Module 1), Hydrological and Meteorological Hazards (Module 2), Geological and Tectonic Hazards (Module 3) and Vulnerability (Module 4). The module Integral Natural Risk Management (Module 5) integrates the foregoing modules. The whole internet course is structured hierarchically, consisting of modules, topic groups and learning units. This consistent structure allows extending the course with additional contents.

During the four-year development phase of NAHRIS (2002-2005), the first step was to gather the contents in form of story-boarded learning units and to design the overall graphical user interface. Internal development guidelines helped to maintain consistency between the learning contents with the technical feasibility. Content integration, detection and solution of technical shortfalls and access design were the main tasks during the implementation phase. The consolidation phase saw the completion of NAHRIS. A total of 87 learning units were made available online headed by the

portal page [www.nahris.ch](http://www.nahris.ch). The launch of NAHRIS was aligned with the beginning of the winter semester 2005/2006 at Swiss Universities which helped to promote it to several professorships. At the time of writing, over 430 individual users world-wide take advantage of the course.

Given the scale and the duration of the project NAHRIS, the result is certainly a success. While at the beginning, the challenges were to set realistic goals, the timely realization was the main challenge in the course of further developments. The choice of technical platform on which the course is now ultimately running was another challenge that could be solved during the consolidation phase in 2005.

The main added pedagogical value to NAHRIS users is that they are enabled to independently train their self-reliance when learning about natural hazards and risk management, where theory is closely connected with practice. Acquired knowledge, logical understanding and problem-solving skills are checked by self evaluation tests after each learning unit. The incipient topic navigation ensures that users may enter the course based on their previous knowledge. Some learning units may be worked through together, others may be integrated in University classes and studied within the lesson. Combined with University contact classes, NAHRIS is an ideal blended e-learning tool incorporating instrumental and receptive learning forms.

Technically, NAHRIS is set up on a web server and each course page is dynamically loaded using server and client side technology. The portal page is linked with a database management system in order to manage user registration and password-protected authentication. Multimedia elements are provided by animated texts, audio, graphics, animations and interactivity. Communications with the user is held by e-mail. User registration, support and information about news are distributed by this channel while feedback forms are integrated in the portal site.