Environmental Education on the Faculty of Informatics of Masaryk University

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Introduction

Masaryk University Brno, the second largest university in the Czech Republic, comprises eight faculties with more than 140 departments, institutes and clinics, embracing a broad spectrum of academic disciplines and fields of research. More than 14,000 students study at the University. As demands for increased access to higher education continue to grow, the University is preparing to develop its programs to accommodate more students to meet that need. One of these demands was also to introduce environmental education program. Since 1989, Masaryk University has been working to build links with universities in Europe and elsewhere. The university plays an active role in supporting the European Union TEMPUS and SOCRATES programmes and other European networks and consortia.

The University strategy of environmental education issues from European strategy of environmental education and activities of the Association of University Departments of Environmental Sciences in Europe [auDes] presented on latest auDes' annual conferences about environmental education:

- Multidisciplinarity and International Cooperation in Environmental Education (hold 18-20 September 1997 in Chambery, France),
- Case Studies in Environmental Education and Research (15-17 April in 1999 Zürich, Switzerland) and
- 6th International Audes Conference: (BRIDGING MINDS & MARKETS: Emerging Issues in Environmental Education & Employment in Europe. (hold 5, 6 and 7 April 2001 in Venice, Italy).

Faculty and students actively participate in fellowship and research programs abroad. This enabled to introduce European trends of environmental education on University from the second half of nineties.

Actual goals of environmental education on Masaryk university

In the framework of negotiations with the European Union, on June 1, 2001, the Czech Republic completed one of the most difficult and financially most demanding chapters – Chapter 22: Environment. The Ministry of the Environment (ME) succeeded to complete Decision of the Government the Czech Republic No. 1048/2000, On State Programme of Environmental Education and Public Awareness:

- Training and information activities, education and public awareness,
- Integration of training relating to Act No 123/1998 Code for new personnel in institutions where environmental information is available,
- Updating the internet webs of the ME,

- Methodical management for environmental enlightenment, education and public awareness both for environmental units of district offices and of the ME regional departments.

This Decision of the Government brought actual goals of environmental education to University and also Faculty of Informatics, which belongs to academic institutes of “university” type and has interdisciplinary character (from natural science to technical orientation).

However the University approach brought further aspects depending on faculties (legal, social, economic, political, etc.), which will modify their goals of environmental education.

Actual stage of environmental education on Faculty of Informatics

Faculty of Informatics of MU has following study programmes:

- Bachelor study programmes of Informatics,
- Master study programmes of Informatics, Geography, Mathematics, Physics, Teacher Training for Secondary Schools,
- Doctoral study programmes of Informatics.

This orientation gave the framework for environmental education on the faculty. There are two basic courses for bachelor and master programmes, which syllabuses follows:

I. Environmentalistics, which consists of 14 lectures devoted to:

- Environment and the environment protection (basic concepts),
- Components of the environment: water, air, ground, nature and landscape, row materials, wastes,
- Global environmental problems (climat changes, population explosion, reduction of biodiversity), sustainable development, Agenda 21,
- The private and state sector roles in environmental protection,
- Economic aspects of the environmental protection, globalization of the world economics,
- Macro- and microeconomics of the environment, economic stimuli for environmental protection, systems for environmental management (ISO 14000, EMAS), environmental accounting and taxes,
- Microenvironmentalistics - ecology of households and workplaces, agreements of good neighbourship,
- Environmental information, freedom of access to environmental information (in CZ and abroad), public participation in environmental issues,
- Environmental impact of information and communication technology

II. Environmental information systems, which consists of 14 lectures devoted to:

- Definition of environmental information and their IT implementation,
- Freedom access to environmental information in the Czech Republic (CR), European union (EU) and the world,
- Definition of environmental information systems (EIS) and their specification in environment protection,
- Metadata and metainformation systems,
- Main principles of the development of EIS in the public administration of the CR and EU,

- Standards of ICT in public administration, structure and hierarchy EIS of public administration,
- The role of the Czech legislation in EIS and their harmonisation with EU, OECD and UN ones,
- Database structures and user functions of EIS for waste, water, hazardous chemicals and air protection management and national, international environmental reporting data flows,
- Special ICT and the methodology of development web EIS and the role of GIS,
- International and national EIS used by the Ministry of Environment Protection (EEA, EIONET, examples of EIS, etc.),

Students of this course have to develop the annual project of analysis and re-engineering of chosen web EIS.

There is further course of environmental education for master and doctoral study programmes of the faculty, which is devoted to **Systems of Integrated Management** (systems of environmental, quality and health and safety management), see http://wwwdata.muni.cz/to.en/study/teaching.asp?Subjekt=fi.

Students of these study programmes can also attend to courses of environmental education on further three faculties of Masaryk university on:

- Department of Environmental Law and Land Law of the Faculty of Law,
- Department of Environmental Studies of the Faculty of Social Studies,
- Research Centre for Environmental Chemistry and Ecotoxicology of the Faculty of Sciences.

Conclusion

The Faculty of Informatics was established in 1994 and from this time the above courses were hold by authors of paper. More than 150 students passed through these courses and gained the new approach to environmental protection and sustainable development.

New environmental informatics lecturers and experts at environmental information systems were educated, whose are working in public administration and commercial practise. They developed many environmental information systems in the Czech Republic and abroad.

Main experiences from above mentioned teaching process would be demonstrated during presentation on conference.