

Developments in the Austrian Surveying Education

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Key words: University Curriculum, Advanced Technical College, Civil Engineer, Assistant Surveyor.

ABSTRACT

In Austria was a substantial change of surveying education during the last years. Today the offer is broader than it had been three years ago. The paper gives an overview about all possibilities of professional education in the fields of surveying and geoinformation in Austria.

In the year 2000 the first advanced technical college called "Fachhochschule" started with a study named "Geoinformation". And since the year 2001 students have the choice between two different kinds of surveying education at Austrian universities: In Vienna there is the traditional study for "Diplomingenieur". In Graz a new field of study "Geomatics" was implemented, the first one with bachelor and master degree in Austria.

Practical education also is offered at federal institutions and private offices with an increasing training in soft skills, like manager training and business economics.

In 1998 a new apprenticeship was implemented to train assistant surveyors. Generally pupils start this 3.5 years termed education at the age of 15.

But finally there is the question: Do the universities focus enough on the surveying market and on their customers or are they just hunting for getting more and more students?

ZUSAMMENFASSUNG

In der Vermessungsausbildung Österreichs erlebten wir während der letzten Jahre eine große Veränderung. Heute ist das Angebot um vieles größer als noch vor drei Jahren. Dieser Überblick zeigt alle Möglichkeiten der beruflichen Ausbildung auf den Gebieten der Vermessung und Geoinformation in Österreich.

Im Jahr 2000 hat die erste Fachhochschule mit einem Studium „Geoinformation“ den Betrieb aufgenommen. Und seit Herbst 2001 können die Studierenden zwischen zwei einschlägigen Ausbildung auf den österreichischen Universitäten wählen. In Wien ist es das traditionelle Diplomingenieur-Studium und in Graz haben wir das neue Studium „Geomatics“ mit Bachelor- und Master-Abschluss.

Dann gibt es noch Beispiele der praktischen Berufsausbildung zum Ingenieurkonsulenten für Vermessungswesen und beim Bundesamt für Eich- und Vermessungswesen (BEV). Hier finden sich immer öfter die Themen Führungskräfte-Training und Betriebswirtschaftslehre.

Seit 1998 gibt einen neuen Lehrberuf „Vermessungstechniker“. Die Ausbildung dazu beginnt mit 15 Jahren und dauert dreieinhalb Jahre.

Zum Schluss stellt sich die Frage: Beachten die Universitäten den privaten Vermessungssektor und damit ihre eigentlichen Kunden ausreichend oder versuchen sie nur mehr und mehr Studenten zu bekommen?

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1. INTRODUCTION

In Austria for many years no essential changes occurred in professional training and education. The entrance to the European Union had an impact to the Austrian surveying education and caused some substantial changes. The ongoing globalisation effects a stronger competition of all educational institutions. That leads to a stronger orientation on markets and customers for all educational branches. Just like in many other lines of business the developing and changing of the surveying education is taking place in shorter and shorter intervals.

2. UNIVERSITY CURRICULA

Since many years students can get a full academic surveying education just at two places – the Technical Universities at Vienna and Graz. Like the international trend the number of students was slightly decreasing. Just in the study year 2001/2002 was a trend reversal and there are some more students.

2.1 Vienna University of Technology

Students can study “Vermessung und Geoinformation” (Surveying and Geoinformation) in the traditional way. The focal points are:

- Engineering Survey
- Theoretical Geodesy
- Photogrammetry and Remote Sensing
- Cartography
- Geoinformation and
- Geophysics.

In the second phase of this education two different areas of concentration are offered:

- Geoinformation and
- Geodesy and Geophysics.

The scheduled duration of the whole course is ten semesters, but in practice the students need 15 semesters on average.

2.2 Graz University of Technology

Beginning with the study year 2000/2001 a new curriculum is offered. This course is structured in two parts according to the American/British educational model:

- Bachelor-study “Geomatics Engineering” and
- Master-study “Geomatics Science”.

An update of all contents of teaching goes hand in hand with this new structure. The bachelor-study is orientated to “Geo” and “Informatics”. The duration is six semesters. It is followed by the master-study. The main focus of this part is multidisciplinary. It takes four semesters more and has two main subjects:

- Geoinformation and
- Satellite Geodesy and Navigation.

Depending on his/her individual profile of education every student can choose between a lot of optional subjects.

2.3 Individual Degree Programs

In Austria two fully academic individual studies are offered:

- “g-tec” started 2000/2001 in Rottenmann/ Styria (operated by the University Linz and the Graz University of Technology) and
- “Geoinformation” started 2001/2002 in Vienna (operated by five institutes of the Vienna University of Technology).

Both studies have their key aspects oriented to Geoinformation, Computer Science and Business Economics.

3. FACHHOCHSCHULE (ADVANCED TECHNICAL COLLEGE)

Technikum Kärnten offers a study named „Geoinformation“. This study is scheduled to eight semesters and strongly orientated to practice. The students are doing most of their work in projects. As English can be seen as the language of technology, this language will be lectured during the whole study. The interest for this new field of study can be seen in more than 50 applicants for 24 study places in the last year.

4. CIVIL ENGINEER FOR SURVEYING (CADASTRAL LICENCE)

There is a professional body (Bundeskammer der Architekten und Ingenieurkonsulenten), established by civil law, which regulates the activities of academic educated engineers for the private practice.

Following upon graduation as “Diplomingenieur” at a technical university (equivalent to a MSc degree), a minimum practice of three years must be proved, one year of this in cadastral work. Before gaining a licence to practice cadastral work a state examination has to be passed.

5. APPRENTICESHIP “ASSISTANT SURVEYOR”

This way of education was created newly in 1998. At the age of 15 years young people get the chance to learn a technical surveying job in a practice oriented way. The education takes three and a half years. It is finished with an examination, which has a theoretical and a practical part.

These people plan, organise, do and document surveying works within predetermined limits.

6. TRAINING AND EDUCATION AT BEV (FEDERAL OFFICE OF METROLOGY AND SURVEYING)

At BEV and at the regional surveying offices basic training as well as life-long learning is organised internal. There is a BEV-owned training centre for basic training courses in Vienna. Participants also can live in this building. The educational phase for academics lasts for four years and they have an individually program to see all parts of the organisation. In 2001 focal points of staff development were:

- Leadership-Training
- Education for Quality Management
- Customer Orientation and Marketing
- Knowledge of Business Economics and
- Technical Education and Training.

7. PERSPECTIVE TO FUTURE

In the field of surveying and geoinformation all concerned people can feel the situation of a changing profession. A lot of discussions are running about the different developments, ways and prospects. It seems that geoinformation increases importance in comparison with traditional surveying. And it is beyond any dispute, that multidisciplinary becomes more and more important.

In my opinion the Austrian universities gradually approach to the needs of practice. But there is a need for much more orientation to practice, as it is demonstrated by the Fachhochschule. The competition in our field of practice increases and to meet the requirements there must be a permanent dialog between practice and educational institutions.

LINKS

vg.geoinfo.tuwien.ac.at	Technische Universität Wien (Vienna University of Technology) – Vermessung und Geoinformation
www.geoinfo.tuwien.ac.at/diplom	Technische Universität Wien (Vienna University of Technology) – individuelles Studium Geoinformation
www.cis.tugraz.at/geo-it	Technische Universität Graz (Graz University of Technology) - Geomatics
www.boku.ac.at	Universität für Bodenkultur
www.unileoben.ac.at	Montanuniversität Leoben
www.rottenmann.at/diplomstudium	Individuelles Studium g-tec
www.cti.ac.at	Technikum Kärnten (Fachhochschule) - Geoinformation
www.arching.at	Bundeskammer für Architekten und Ingenieurkonsulenten BAIK
www.bev.gv.at	Bundesamt für Eich- und Vermessungswesen BEV (Federal Office of Metrology and Surveying)
www.ovg.at	Österreichische Gesellschaft für Vermessung und Geoinformation ÖVG (Austrian Society for Surveying and Geoinformation)

BIOGRAPHICAL NOTES

Gert Steinkellner

1956	Born nearby Vienna/ Austria
1983	Diploma in Civil Engineering (Surveying) from Vienna University of Technology
1983-1984	Scientific assistant at Institute for Photogrammetry and Remote Sensing, Vienna University of Technology
1984-1990	Technical expert (Department of National Borders) at Bundesamt für Eich- und Vermessungswesen BEV (Federal Office of Metrology and Surveying)
1990-1997	Head of the Section for Training and Education at BEV
since 1992	Austrian Delegate to FIG Commission 2 (Professional Education)
since 1996	Secretary General of Österreichische Gesellschaft für Vermessung und Geoinformation ÖVG (Austrian Society for Surveying and Geoinformation)
1997-now	Vice-head of the Department of Staff Management and Staff Development at BEV
1999-2001	Trainer for Hungarian managers and member of Advisory Board in the EU-Project SDiLA (Staff Development in Land Administration)
2001-now	Head of the Austrian delegation to FIG General Assembly
2001	Trainer for Russian experts in the EU-project “Inventory of land and registration of rights” (LARIS Centre, Moscow).