

Practical Training in Geomatics Studies in Latvia

Janis STRAUHMANIS, Latvia

Key words: geomatics education, field training, training contracts, international cooperation

SUMMARY

In Latvia, the basis of geomatics studies was laid in the late 20th century, when the Riga Technical University started providing training in this field. Practical training involves work at a company that specializes in geodesy, cartography or real-estate management, and the length of it is at least 16 weeks (bachelors programme). The main task of students is to gain practical knowledge, learn about the organisation of work, master practical skills in their field and gather material for their bachelor or master papers. Currently, the Department of Geomatics of Riga Technical University offers two professional study programmes: a bachelor study programme and a master study programme. The both programmes include practical training in state or private companies. It should be noted that FIG documents emphasize the need to enhance the practical training of surveyors and therefore, in our opinion, it is necessary to find opportunities for international cooperation in providing practical training for students.

KOPSAVILKUMS

Ģeomātikas studiju pirmsākums Latvijā bija 20.gadsimta beigās, kad Rīgas Tehniskajā universitātē sākās arī prakses ieviešana šajās studijās. Vismaz 16 nedēļu ilga prakse (bakalaura studijās) nozīmē reālu darbu uzņēmumā, kurš specializējas ģeodēzijā, kartogrāfijā vai nekustamā īpašuma pārvaldībā. Studentu galvenais uzdevums prakses laikā ir iegūt darba iemaņas, iepazīties ar darba organizāciju, paplašināt prasmes, kā arī savākt materiālus bakalaura vai maģistra darbam. Patreiz Rīgas Tehniskajā universitātē Ģeomātikas katedra īsteno divas profesionālās studiju programmas ģeomātikā: bakalaura un maģistra. Abās programmās ir ieviesta prakse valsts vai privātajos uzņēmumos. Jāatzīmē, ka Starptautiskās Mērnīku federācijas dokumentos tiek uzsvērtā mērnīku praktiskās sagatavošanas nozīme un pēc mūsu domām, nepieciešams attīstīt starptautisko sadarbību studentu prakses organizēšanā.

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INTRODUCTION

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Bachelor Degree Professional Study Programme "Geomatics"

| | | |
|----------|---|-------------------|
| A | MANDATORY SUBJECTS | 136,5 ECTS |
| | | 28,5 ECTS |
| | Mathematics | 13,5 |
| | Physics | 9 |
| | Fundamental rights | 3 |
| | Labour safety | 1,5 |
| | Civil defence | 1,5 |
| | | 67,5 ECTS |
| | Application of geodetical measurements | 9 |
| | Economics | 3 |
| | Environmental engineering | 3 |
| | Computer sciences (basic course) | 4,5 |
| | High geodesy | 9 |
| | Mathematics additional parts | 4,5 |
| | Descriptive geometry and engineering graphics | 3 |
| | Geographical information systems | 6 |
| | Geomatics (basic course) | 3 |
| | Global positioning systems | 4,5 |
| | Legislation in geomatics | 3 |
| | Property valuation | 4,5 |
| | Real estate cadastre | 4,5 |
| | Civil engineering (basic course) | 1,5 |

| | | | |
|----------|---|-------------------|-----|
| A | MANDATORY SUBJECTS | 136,5 ECTS | |
| | | 28,5 ECTS | |
| | Building mechanics (basic course) | | 4,5 |
| | | 40,5 ECTS | |
| | Geodesy | | 4,5 |
| | Engineering geodesy | | 3 |
| | Photogrammetry | | 9 |
| | Digital relief models | | 3 |
| | Geodesy (practical course) | | 3 |
| | Systems of property valuation | | 3 |
| | Hydrographic measurements | | 3 |
| | Land management (basic course) | | 6 |
| | Cartography | | 6 |
| B | SUBJECTS OF LIMITED CHOICE | 49,5 ECTS | |
| | Topographic measurement of cities | | 3 |
| | Geodetic network | | 6 |
| | Global positioning systems | | 4,5 |
| | Geographical information systems | | 6 |
| | Application software in geomatics | | 4,5 |
| | Basic geomatic data application | | 6 |
| | Land law | | 4,5 |
| | Land information systems (basic course) | | 6 |
| | Physical planning (basic course) | | 4,5 |
| | Geodetic instruments | | 3 |
| | Computer graphics in geomatics | | 9 |
| | Geodetic gravimetry | | 3 |
| | Cadastral measurements | | 3 |
| | Roads (basic course) | | 4,5 |
| | | 6 ECTS | |
| | General sociology | | 3 |
| | Managerial sociology | | 3 |
| | Applied etiquette | | 3 |
| | Political science | | 3 |
| | | 6 ECTS | |
| | English | | 6 |
| | German | | 6 |
| C | SUBJECTS OF FREE CHOICE | 15 ECTS | |
| D | PRACTICE | 39 ECTS | |

| | | |
|----------|---|-------------------|
| A | MANDATORY SUBJECTS | 136,5 ECTS |
| | | 28,5 ECTS |
| E | Bachelor thesis (with engineering project) | 18 ECTS |
| | Total | 270 ECTS |

**MASTER DEGREE PROFESSIONAL STUDY PROGRAMME
„GEOMATICS”**

| | | |
|----------|----------------------------------|------------------|
| A | MANDATORY SUBJECTS | 10,5 ECTS |
| | Global positioning systems | 4,5 |
| | Geographical information systems | 4,5 |
| | Labour safety | 1,5 |
| B | MANDATORY SUBJECTS | 37,5 ECTS |
| | Application of geodetical data | 9 |
| | Local geodetical network | 4,5 |
| | Digital terrain models | 4,5 |
| | Real estate valuation | 4,5 |
| | GPS Heighting | 4,5 |
| | Real estate management | 3 |
| | Thematic cartography | 3 |
| | Digital mapping | 3 |
| | Environmental photogrammetry | 3 |
| | Architectural photogrammetry | 3 |
| | Theoretical cartography | 4,5 |
| | Geodetical instruments | 3 |
| | | 6 ECTS |
| | Pedagogy | 3 |
| | Psychology | 3 |
| D | PRACTICE | 9 ECTS |
| E | MASTER THESIS | 30 ECTS |
| | Total | 90 ECTS |

The head of the Department of Geomatics or a person he has authorised concludes an agreement with the chief executive of the company, which specifies the rights and responsibilities of both parties, e.g. informing about the course of practical training and the performance of students, regular meetings with students, and others. In addition to this agreement, the parties also sign a document which specifies what types of tasks the students are supposed to perform.

At the agreement main points are:

- the company fix all tasks of practical training;
- the Department must to inform company about all changes at the practical training programm;
- the company must regulary inform Department about all changes at the practical training programm;
- if it is necessary for company Department can help with geodetic instruments, because Latvian surveying companies mainly are smale.

Second document fix all tasks which student must to resolve at the practical training and this document signed by supervisor of training, student and representative of company.

The copies of the two documents have to be attached to the account of the work accomplished during the practical training, which the students have to submit and defend at the Department.

The bachelor study programme requires that students gather material, firstly, for their engineering project, which has to be attached to the bachelor thesis and, secondly, at least a part of material for their bachelor thesis, because the theme of the bachelor thesis is the same as that of the engineering project. Therefore, special attention is given to the preparation of tasks of the practical training. For examble it will be topographic surveying or proceeding of geodetic measurements by specialized software.

For the students of the master study programme, the practical training is shorter and the main emphasis is put on gathering the information they need to write their master thesis.

The account of the practical trainig has to be prepared in accordance with the regulations approved by the Department of Geomatics. The account consists of two parts: a text and graphs, and it should contain at least 30 pages.

Structure of the account is such:

- title page,
- copy of the agreement,
- copy of the task of the practical training,
- main text with ilustrations, tables, maps,

- student's analyze of the results of the practical training,
- executive of the company analyze of the practice.

The assessment of the students' practical work is given not only by the academics of the Department of Geomatics but also by a representative of the company where the students had their practical training.

The main problems:

- reaching an agreement with the managers of companies on the specified tasks to be performed by the students (it is especially difficult to cooperate with private companies because they are not interested in providing practical training to students, although they need qualified specialists);
- reaching an agreement on the tasks to be performed by the student with the adviser of the student's bachelor thesis, who very often is not the supervisor of the student's practical training, because the theme of the engineering project is more specific and more concrete than that of the bachelor thesis.

Currently, the academics of the Department of Geomatics have started work on preparing methodological guidelines for practical training in the field of geomatics.

It should be noted that FIG documents emphasize the need to enhance the practical training of surveyors and therefore, in our opinion, it is necessary to find opportunities for international cooperation in providing practical training for students. We have already taken the first steps in this direction by training the students from the University of Valencia (Spain) and providing them practical training in geodesy.

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BIOGRAPHICAL NOTES

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