14. LT: Lietuva (Lithuania)

Author: Romanas KRIVICKAS (EAEEIE, Kauno technologijos universitetas, rkr@soften.ktu.lt)

14.1. General information

Higher education is divided into undergraduate, graduate, and doctoral studies. Universities award Bachelor's, Master's and Doctor's degrees.

Undergraduate studies (160 credits = 240 ECTS credits) lead to a Bachelor's (*Bakalauras*) degree.

Master's (*Magistras*) degree is awarded for an individual who has received a Bachelor's degree and conducted the 60 to 80 (90 to 120 ETCS) credits study programme in one and a half or two years, acquiring a special training and skill for research.
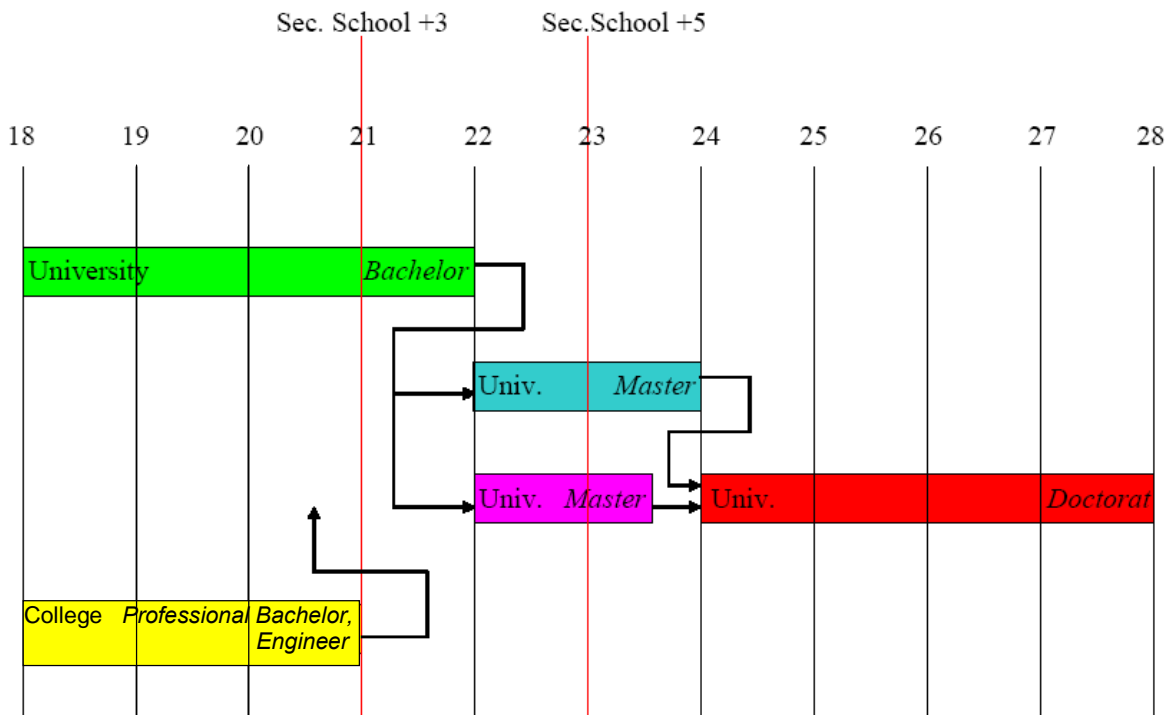

Figure 14.1: Lithuanian Higher Education System in EIE disciplines.

The Doctor of Science (*Mokslu daktaras*) degree (D.Sc), which equates with a Ph.D., takes a further three or four years to acquire and is only awarded to those whose research provides a significant and original contribution in the selected field.

Higher non-university technical education is offered in colleges. Technical colleges award Professional Bachelor, Engineer's degree (*Profesinis bakalauras, Inžinierius*) (120 credits = 180 ECTS credits).

The academic year consists of an autumn and spring semester.

The autumn semester starts on September 1 for 16 weeks followed by Christmas vacation and four weeks winter exam session.

The spring semester starts at the beginning of February for 16 weeks with four weeks spring exam session.

The basic unit of a study programme is a course module. It may involve various forms of study: lectures, laboratory work, practice, tutorials, seminars, independent study, research, projects, other work or a combination of some of these. The duration of a course module is one semester.

The measure of a course module and all course plans is a credit. One credit corresponds to 40 hours of a student's work.

Two credits are equivalent to 3 ECTS credits.

14.1.1 *Electrical and Information Engineering in Lithuania, boundaries of the field of study*

- Electrical Engineering,
- Electronics Engineering,
- Information Engineering.

14.1.2 *Content, degrees and accreditations*

The guidelines for higher engineering education study programmes are defined by legislation.

The study programmes are developed by universities and registered at the Department of Science and Higher Education of Lithuanian Republic.

The Lithuanian Centre for Quality Assessment in Higher Education is in charge for the quality of study programmes.

The study programmes should be available on the web sites of the universities.

14.1.3 *Implementation of the Bologna-BMD system in Lithuania*

As implementation of Bologna system is still in progress, the following changes have taken place:
- The three level system of higher education was introduced.
- An advanced system of credits for measuring the amount of study and promoting student exchange was introduced.

- A ten-point grading scale assessment system was introduced.

- An external assessment system for the quality of studies was introduced.

- The content of education has been updated - the system has become more flexible, students are offered more choice, more time is provided for the students' individual work.

- Universities and colleges are using ECTS credits in student exchange.

14.2. Figures on the weight of EIE in Lithuania

* see the list of universities given in appendix A

Official number of students, October 1, 2007

Professional Bachelor, Engineer

Engineering	KK	KVTK	ŠK	PK	VK	KTK	UK	AK	ŽK	Total	%
Electrical	61	146	91	127		169	-	-	-	594	25.58
Electronics					278	73	-	-	-	351	15.12
Information	93		181	178	569		156	160	40	1377	59.30
Total	154	146	272	305	847	242	156	160	40	2322	100

Bachelor

Engineering	KUT	VGTU	KU	SU	VU	Total	%
Electrical	482	291	176	104	-	1053	28.54
Electronics	406	890	-	193	153	1642	44.51
Information	436	243	92	223	-	994	26.95
Total	1324	1424	268	520	153	3689	100

Master

Engineering	KUT	VGTU	KU	SU	VU	Total	%
Electrical	227	76	11	-	-	314	26.34
Electronics	165	140	-	21	31	357	29.95
Information	343	178	-	-	-	521	43.71
Total	735	394	11	21	31	1192	100

.

	Engineering	EIE
Professional Bachelor, Engineer	6054	2322
Bachelor	10541	3689
Master	2314	1192

14.3. Degrees in EIE in Lithuania

14.3.1 Professional Bachelor, Engineer (technician) level

Professional Bachelor, Engineer (non-university higher education, three years after secondary school)

- *Electrical Engineering*

    Automatic control (KK)

    Electrical and automation equipment (PK, KVTK, SK)

- *Electronics Engineering*

Electronics Engineering (KTK, VK)

Telecommunications (VK)

• *Information engineering*

Computer Engineering (VK, ZK, PK)

Information systems (PK, VK)

Informational Systems Technology (UK, SU, AK)

Administration of computer network (AK, KK)

14.3.2 Bachelor level

Bachelor *(four years after secondary school) in:*

• *Electrical Engineering*

Electrical Engineering (KTU, KU, SU)

Automation and Control (KTU, VGTU)

Electric Power Technology (KTU)

• *Electronics Engineering*

Electronics Engineering (KTU, VGTU, SU)

Electronics Engineering and Management (KTU)

Telecommunications (KTU)

Telecommunication Engineering (VGTU)

Telecommunication Physics and Electronics (VU)

Computer Engineering (VGTU)

• *Information Engineering*

Information Engineering (KTU, KU, SU) :

Information Technologies (SU)

Information System Engineering (VGTU).

14.3.3 Master level

Master (two or one and a half years after bachelor level) in:

• *Electrical Engineering*

Electric Power Engineering (KTU)

Electric Power System Engineering (VGTU)

Control Engineering (KTU)

Control Technologies (KTU)

Industrial Power Equipment and Automation (KU)

Marine Power Equipment and Automation (KU)

Automation (VGTU)

• *Electronics Engineering*

Applied Electronics (KTU)

Electronics (VGTU)

Electronics Engineering (KTU

Engineering Electronics (KTU

Signal Technology (KTU)

Radioengineering (SU)

Telecommunications (KTU)

Telecommunication Systems (KTU)

Telecommunication Engineering (VGTU)

Telecommunication Physics and Electronics (VU)

Computer Engineering (VGTU)

• *Information Engineering*

Information Technologies (KTU, VGTU)

Information System Engineering (KTU)

Software Engineering (KTU)

Distance Learning Information Technologies (KTU, VGTU)

Business Process Management Technologies (VGTU)

Single-Chip Systems (KTU)

14.3.4 Doctor level (three or four years after master level)

• *Electrical and electronics engineering*
• *Information Engineering*

Abbreviations

- *AK - Alytaus kolegija / Alytus College*
- *KK - Kauno kolegija / Kaunas College*
- *KTK - Kauno technikos kolegija / Kaunas Technical College*
- *KVTK - Klaipėdos verslo ir technologijų kolegija / Klaipeda Business and Technology College*
- *PK - Panevėžio kolegija / Panevezys College*
- *SK - Šiaulių kolegija / Siauliai College*
- *VK - Vilniaus kolegija / Vilnius College*
- *UK - Utenos kolegija / Utena College*
- *ZK - Žemaitijos kolegija / Zemaitija College*
- *KTU / Kauno technologijos universitetas / Kaunas University of Technology*
- *KU - Klaipėdos universitetas / Klaipeda University*
- *SU - Šiaulių universitetas / Siauliai University*
- *VGTU - Vilniaus Gedimino technikos universitetas / Vilnius Gediminas Technical University*
- *VU - Vilniaus universitetas / Vilnius University*

14.4. References

The information given in this monograph is based on the following documents and web links:

- http://www.aikos.smm.lt/aikos/webdriver.exe?MIval=/DizPirmas.html
- http://www.ktu.lt
- http://www.vgtu.lt
- http://www.vu.lt
- http://www.su.lt
- http://www.ku.lt
- http://www.akolegija.lt
- http://www.kauko.lt
- http://www.ktk.lt
- http://www.viko.lt
- http://www.klvtk.lt
- http://www.siauliukolegija.lt
- http://www.panko.lt
- http://www.utenos-kolegija.lt
- http://www.zemko.lt

Doctoral
Studies

14.5. Doctoral Studies in Lithuania

14.5.1. Supervision

Scientific Board or Supervisor

Scientific board chosen by the Senate of the University. The student, in most cases, has the same personal supervisor during its thesis work on an active research area of the supervisor.

Subject Assignment

Subject assigned at the beginning of the doctoral studies, by agreement between student and supervisor.

Who can be a Supervisor

Professor or researcher in the department with PhD and with the appropriate experience.

Tasks of Scientific Board/Supervisor

1.	General management	YES
2.	Deciding/advising layout of course	NA
3.	Assigning a thesis subject	YES

Duration

Four years.

14.5.2. **Development**

Courseware?

Yes.

Course Work

1. The students have to take course work during their doctoral degree preparation. The course work is assessed by examinations and is offered as specialist graduate course units.

2. Extension: 200 hours for the first year. There are four course units: three for the first year and the fourth for the second or third or fourth year.

3. Credit system: KTU. Three ECTS correspond to two KTU. There are twenty KTU credits allocated to course work.

4. Monitoring of the doctoral student. In case of failure the student must retake the exam.

Contribution to Teaching

Supervision of undergraduate laboratory work.

Presentation of Work

At international conferences.

14.5.3. Thesis Work

Submission of Doctoral Written Thesis

1.   <u>Language</u>: Lithuanian. Alternative language: English.

2.   <u>No credits</u> allocated to the doctoral thesis.

3.   The doctoral thesis is a previously unpublished substantial written report.

Oral Presentation of Thesis Work

1.   <u>Language</u> normally used: Lithuanian. Alternative language: English.

2.   Oral presentation with oral examination for an open/public audience.

3.   <u>Duration</u>: typical duration of 1,5 to 3 hours including examination with no upper time limit.

14.5.4. Examination

Thesis Examination Board

1.   <u>Composition</u>: minimum of three internal examiners (60%) and minimum of two external examiners (40%) with a total minimum of five members.

2.   <u>Selection</u> by the rector or equivalent.

Evaluation

1.   <u>Result</u> based on the reading of the thesis and the oral presentation of the thesis work, with no grading system.

2.   <u>If the student fails</u>, he/she may resubmit a revised thesis within one year.

14.6. Questionnaires

Lithuania

3 – ACTIVITIES DURING DOCTORAL STUDIES

3.1- SUPERVISION OF DOCTORAL STUDIES

3.1.1 Are the doctoral studies supervised by a Scientific Board/supervisor? If no, please proceed to 3.1.5.   YES

3.1.2 **How many members are in the Scientific Board?**

3.1.3 How are the members of the Scientific Board chosen?

3.1.3.1 Elected by the Faculty, Department?   Y/N

3.1.3.2 Chosen by the student?   Y/N

3.1.3.3 Chosen in another way? Please specify: Y

By the Senate of the University.

3.1.4 Which are the main tasks of the Scientific Board/ Supervisor?

3.1.4.1 General management of the doctoral studies.   Y

3.1.4.2 Deciding the layout of the course, advising the students on their coursework.   Y/N

3.1.4.4 Assigning the thesis subject.   Y

3.1.4.5 Other. Please specify:

3.1.5 Does the student need a personal supervisor during her/his studies?   Y

3.1.5.1 Does the same person supervise her/his thesis work?   Y

3.1.6 Must the subject of the doctoral thesis be an active research area in the department?   Y

3.1- SUPERVISION OF DOCTORAL STUDIES

3.1.7   The doctoral thesis subject is normally assigned:

3.1.7.1   At the beginning of the doctoral studies?

Y

3.1.7.2   After a specified period of coursework?

Y/N

3.1.7.3   Other. Please specify:

Y/N

3.1.8   The thesis supervisor of a doctoral student can be:

3.1.8.1   Any professor or lecturer in the department?

Y/N

3.1.8.2   Any researcher in the department?

Y/N

3.1.8.2.1   In this case, is there a need for a second supervisor who is a professor or lecturer in the department?

3.1.8.3   Any researcher in another institution?

Y/N

3.1.8.3.1   In the latter case, is there a need for an internal supervisor?

Y/N

3.1.8.4   Other methods. Please specify:

Y

Professor or researcher in the department, with Ph.D. and with an appropriate experience.

3.1.9   The thesis subject is assigned by:

3.1.9.1   Agreement between the student and the proposed supervisor?

Y

3.1.9.2   Other methods. Please specify:

Y/N

3.2- COURSE WORK

3.2.1   Do the students have to take coursework during their doctoral degree preparation? If no, please proceed to 3.3.

Y

3.2.2   **Extension and assessment.**

3.2.2.1	What is the number of contact hours spent in coursework in each year?	Year 1	**Year 2**	**Year 3**	**Year 4**
		200 hrs	**15 hrs**	**hrs**	**hrs**

Remark: Four course units: three for the first year and the fourth for the second or third or fourth year.

3.2- COURSE WORK

3.2.2.2   **In which form is this coursework offered?**

- As specialist graduate course units.

Y

- As course units taken from the undergraduate programme.

- Other. Please specify.

3.2.2.3   Is the coursework assessed by examinations?
If not, please give details:

Y

3.2.3   **Credit system**

3.2.3.1   Is the coursework in your institution described by a credit system?

Y

3.2.3.2   Is it the ECTS system?

N

If not, what is the relationship with ECTS?   3 ECTS correspond to 2 KTU credits

3.2.3.3   How many credits are allocated to coursework?   20 KTU **credits**

3.2.4   **Monitoring**

3.2.4.1   Do you monitor the performance of the doctoral student taking coursework?

Y

3.2.4.2   **What regulations apply in case of failure in one or more course units?**

- Retake the exam.

Y

- Take a different course unit.

3.3- PRESENTATION OF WORK RESULTS:

3.3.1   In the department.

3.3.2   At national conferences.

3.3.3   At international conferences.

Y

3.4- CONTRIBUTION TO TEACHING:

3.4.1   Supervision of undergraduate laboratory.

Y

3.4.2   Teaching undergraduate courses.

4 - AWARDING OF DOCTORAL DEGREE

4.1- SUBMISSION OF DOCTORAL THESIS

4.1.1	Which language is normally used for the thesis?	Lithuanian
4.1.2	Are alternative languages used for the thesis? Please Specify: **English.**	Y
4.1.3	Which language is normally used for the oral presentation and/or examination?	Lithuanian
4.1.4	Are alternative languages used in the oral presentation and examination? Please Specify: **English.**	YES
4.1.5	Are credits allocated to the doctoral thesis?	N
4.1.6	**The doctoral thesis is:**	
4.1.6.1	A previously unpublished substantial written report.	Y
4.1.6.2	A collection of individual or co-authored scientific papers with an introduction and/or commentary.	
4.1.6.3	Other. Please specify:	

4.2- THESIS EXAMINATION AND DEGREE AWARDING

4.2.1	Is there an oral presentation of the thesis work for an open audience as part of the evaluation procedure?	YES
4.2.2	Composition of the thesis examination board. Please, give the typical number of:	
4.2.2.1	Internal examiners.	Min. 3 (60%)
4.2.2.2	External examiners.	Min. 2 (40%)
4.2.2.3	TOTAL.	Min 5

4.2- THESIS EXAMINATION AND DEGREE AWARDING

4.2.3   How is the examination board chosen?

4.2.3.1   By the supervisor.

4.2.3.2   By the scientific committee of the institution.

4.2.3.3   By the rector or equivalent.

Yes

4.2.3.4   By the national ministry.

4.2.3.5   Other. Please specify:

4.2.4   Do the examiners base their evaluation mark on:

4.2.4.1   Reading the thesis.

Y

4.2.4.2   The oral presentation of the thesis work.

Y

4.2.4.3   Both.

4.2.4.4   What is the typical duration of the oral part of the thesis examination, if applicable?

(1,5 – 3) hours

4.2.4.5   Is there an upper limit to the duration of the thesis examination?

N

4.2.5   Is the oral part of the examination taken behind closed doors?

N

4.2.6   What happens if the student fails?

4.2.6.1   May not resubmit for doctorate.

Y/N

4.2.6.2   May resubmit revised thesis.

Y

4.2.6.3   May do further work as specified by examination board.

Y/N

4.2.6.4   If the thesis is to be re-submitted is there a time limit for this to occur? Please specify:
After one year.

Y

4.2.7   Is there a grading system for the doctoral degree based on the quality of the work?

N

LT: Lietuva (Lithuania)

Universities

City	Name of the institution (national language)	Name of the institution (English)	http address
Kaunas	Kauno technologijos universitetas (KTU)	Kaunas University of Technology	http://www.ktu.lt
Klaipeda	Klaipedos universitetas (KU)	Klaipeda University	http://www.ku.lt
Siauliai	Siauliu universitetas (SU)	Siauliai University	http://www.su.lt
Vilnius	Vilniaus Gegimino technikos universitetas (VGTU)	Vilnius Gediminas Technical University	http://www.vtu.lt
Vilnius	Vilniaus universitetas (VU)	Vilnius University	http://www.vu.lt

Colleges

City	Name of the institution (national language)	Name of the institution (English)	http address
Kaunas	Kauno technologijos kolegija (KTK)	Kaunas Technical College	http://www.ktk.lt
Klaipeda	Klaipedos kolegija (KK)		http://www.klk.lt
Klaipeda	Klaipedos verslo ir technologijų kolegija (KVTK)		http://www.kazum.lt
Siauliai	Siaulių kolegija (SK)		http://www.siauliukolegija.lt
Vilnius	Vilniaus kolegija (VK)	Vilnius College in Higher Education	http://www.viko.lt