LATVIA UNIVERSITY OF LIFE SCIENCES AND TECHNOLOGIES
FACULTY OF ENVIRONMENT AND CIVIL ENGINEERING

APPROVED
by the academic staff meeting of
Department of Landscape Architecture and Planning
January 30, 2018

Landscape Studies

Jelgava

Programme

Code of the study course at LLU IS Register Arhi1036
6 CP (96 h): lectures. 40 h, lab.w. 56 h, examination.
The author: Daiga Zigmunde, Professor of Department of Landscape Architecture and Planning.
Compulsory course of the Bachelor's degree level study programme "Landscape Architecture and Planning" of the Faculty of Environment and Civil Engineering included in the 1st semester of full-time studies.

Abstract:
A general introduction about aims and tasks, scale and specific directions of landscape architecture and planning. The concept of landscape in ecology, geography and other fields. Factors influencing visual character and development of landscape. Role of nature processes and human activities in the development of landscape. Historical development of Latvian landscape. Perception and cognition of landscape. Landscape types and their characteristic. Landscape analysis.

The aim of the study course*:*
The aim of the study course is to create understanding of the profession of a landscape architect and its role in the improvement of the quality of living space. Students acquire basic knowledge of factors influencing landscape character and landscape spatial structure. Students learn to understand the interaction between the landscape and human perception in the past, present and future. Students are introduced with a general introduction into the field of landscape architecture. The meaning of the notion "landscape" and its interdisciplinary character.

Learning Outcomes (knowledge, skills and competence):
After completing the course students will have:

- **knowledge:** terminology used in landscape architecture, meaning of the notion "landscape"; knowledge of nature and anthropogenic factors influencing development of landscape; knowledge of different landscape types, their characteristic elements and spatial structure.
- **skills:** to assess the role and place of human and nature elements in establishment of aesthetic, ecological, social and functional qualities of a landscape; skills to detect different landscape types according to their elements.

- **competence:** to carry out the assessment of the place conditions before starting the design of a definite territory; to aggregate information about nature and anthropogenic factors, the type of building structure; competence to work according to the requirements of Latvia's legislative documentation regarding construction, monument protection and nature conservation; competence to appreciate heritage and nature values in economic development of an area; etc.

Relation of the study course with other subjects:
There is no need for prior knowledge, because the study course has an introductory character, the task of which is to develop students understanding of the landscape and processes in it.

Requirements for individual work:
Individual assignments on various themes characterizing landscape have been developed and submitted by students.

Assessment of knowledge:
Individual assignments have been completed and submitted for evaluation.

Requirements for the admission to the examination/test:
Individual practical assignments should be submitted in the scheduled time. The grade for individual practical assignments submitted after the scheduled time (if there is no valid reason) shall be reduced by 1 point. One written test with a positive grade. Attendance of classes at least 75%.

***Procedure and requirements for settling missed lectures*:**
If a student has attended less than 75% of classes, the topic of each missed class should be studied individually by himself/herself. An essay on the missed subject should be submitted. If a student has attended less than 50% of classes, the study course cannot be passed and the student has to study it repeatedly. If the student has missed classes due to illness or other valid reason, a doctor's sickness certificate or other certificate for a specific period of time should be submitted; in this case an assay from the missed class is not required.

Extended content of the programme

Introduction into speciality. General introduction into the study process and landscape architecture. The role of student self-government. The facilities of LLU Fundamental Library for the needs of the study process. Introduction to the structure and activities of the Faculty and LLU. The view of specialists practicing landscape architecture on the landscape architecture applications in practice**.**
Introduction. The content of the landscape concept, its relation to ecology, geography and terms of other sciences that are used for designating territorial units.
Factors determining creation and development of landscapes. Nature factors and processes, their usage in landscape architecture and planning, outdoor construction. Social and anthropogenic factors. Spontaneous processes and processes originated by human activity, their role in creating landscape structures. Developing different aspects of the landscape and information layers using GIS technologies.
Soil, Latvian soil, its characteristics. Maps of Latvian soil. The role of soil in practical landscape architecture and planning - Soil structure and density, pH level and

its effect on plant selection, soil analysis (N-P-K), water permeability and freezing depth**.**

Geomorphology. Genetic types of the relief, the classification of relief shapes. Relief in Latvia. Regional peculiarities in landscape design and appearance.

Vegetation. Families, species, varieties. Flora of Latvia. Dendrology Plants in Latvia. Climatic zones, their influence on plant selection.

History of the development of Latvian landscapes. The development stages of the Baltic Sea. The arrival of people in the territory of Latvia and the development of settlements and human activity from the historical point of view. The role of socio-economic, political, nature factors in the development.

Landscape structure. Factors creating landscape structure, their characteristics. Landscape structure analysis and mapping using GIS technologies.

Human perception and landscape. Application of subjective and expert methods in landscape assessment and planning.

Visual landscape spaces, their formation and regularities of the structure. Sights and visible landscape relationship. Possibilities of visual landscape mapping and classification. Background and differentiating factors. Practical application of the visual structure analysis of landscape.

Functional landscape spaces, regularities of their formation. Functional landscapes as a result of the previous development processes and as an influencing factor of future development. Road landscape, its characteristics.

Typological diversity of landscapes. Classification principles. Distribution regularities. Specific types of landscapes in different geographic conditions. Urban and rural landscape characteristics, differences. Mapping of landscape types using ArcGIS and MicroStation.

Landscape zoning in Latvia. Zoning principles and objectives. Large shapes of relief and wide panoramas of landscape in Latvia.

Forest landscapes. Elements of forest landscape and their characteristics. Types of forests in Latvia. Basic principles of forest management.

Urban landscapes. History of the formation of cities. Urban structure. Approaches to urban landscape analysis and planning. Functional zones and their characteristics.

Rural landscapes. Problems and possible solutions when planning rural landscapes. Ecological approach to planning.

Water landscapes. Characteristics of water elements, their role in the landscape. Artificial and natural bodies of water. Restrictions on the planning of the landscape at the waters - the tow paths and the protection zone.

Recreational landscapes. Recreational landscape planning specifics. Identification and planning possibilities of recreational objects and tourist routes using GIS technologies.

Landscape evaluation and analysis. An insight into landscape inventory and analysis - phases, scale, main principles. Types and approaches to landscape analysis, materials and resources to be used. Digital maps. Using ArcGIS, MicroStation for landscape analysis.

Laboratory works (56 h):

1. Landscaping factors and elements. The climate. City climate. Precipitation. Wind. The sun and temperature. Relief. Soil. Water Vegetation. Forest cover. Trees and shrubs. Meadows. Herbaceous plants. (4h)
2. Landscape zoning in Latvia. Mapping landscapes, landscape vicinity and types and adding information through GIS technologies. (6h)

3. Landscape space structure / scene analysis. (4h)
4. Road landscape analysis and modelling of its perceptions using GIS. (6h)
5. Forest landscape analysis using evaluation criteria. (4h)
6. Analysis of urban landscape. (6h)
7. Developing different aspects of the landscape and information layers using GIS technologies. (6h)
8. Analysis and mapping of landscape structure using GIS technologies. (4h)
9. Restrictions when planning the landscape at the waters - the tow path and the protection zone, the addition of information to maps using GIS technologies. (4h)
10. Identification of recreational objects and tourist routes and planning possibilities using GIS technologies. (6h)
11. Digital maps. Use of ArcGIS, MicroStation in landscape analysis. (6h)

Lectures (40h)

1. Introduction into speciality. (2h)
2. The content of the landscape concept. (2h)
3. Factors determining creation and development of landscapes. Developing different aspects of the landscape and information layers using GIS technologies. (2h)
4. Soil, Latvian soil, its characteristics. (2h)
5. Geomorphology. (2h)
6. Vegetation. Families, species, varieties. Flora of Latvia. (4h)
7. History of the development of Latvian landscapes. (1h)
8. Landscape structure. Landscape structure analysis and mapping using GIS. (3h)
9. Human perception and landscape. Application of subjective and expert methods in landscape assessment and planning. (1h)
10. Visual landscape spaces, their formation and regularities of the structure. (3h)
11. Functional landscape spaces, regularities of their formation. (1h)
12. Typological diversity of landscapes. Mapping of landscape types using ArcGIS and MicroStation. (3h)
13. Landscape zoning in Latvia. (2h)
14. Forest landscapes (2h)
15. Urban landscapes (2h)
16. Rural landscapes (1h)
17. Water landscapes (3h).
18. Recreational landscapes (2h)
19. Evaluation and analysis of landscape (2h)
20. Digital maps. Use of ArcGIS, MicroStation in landscape analysis (2h)

Bibliography

Compulsory reading:

1. Āboltiņš O. (2010) No leduslaikmeta līdz globālajai sasilšanai. Dabas vides pagātne un tagadne Latvijā. Rīga: LU Akadēmiskais apgāds. 128 lpp.
2. Ainavu plānošana, apsaimniekošana un aizsardzība lauku pašvaldībās (2001). Rīga: Vides aizsardzības un reģionālās attīstības ministrija. 28 lpp.
3. Bells S., Nikodemus O. (2000) Rokasgrāmata meža ainavas plānošanai un dizainam. Rīga. 76 lpp.
4. Bokalders V., Bloka M. (2013) Ekoloģiskās būvniecības rokasgrāmata. Kā projektēt veselīgas, racionālas un ilgtspējīgas ēkas. Rīga: Biedrība "Domas

spēks". 691 lpp.
5. Briņķis J., Buka O. (2001) Teritoriālā plānošana un pilsētbūvniecība. Rīga: Rīgas Tehniskā universitāte. 219 lpp.
6. Kļaviņš M., Blumberga D., Bruņiniece I., Briede A., Grišule G., Andrušaitis A., Āboliņa K. (2008) Klimata mainība un globālā sasilšana. Rīga: LU Akadēmiskais apgāds. 174 lpp.
7. Kruše P., Kruše M., Althauss D., Gabriēls I. (1995) Ekoloģiskā būvniecība. Riga: Preses nams. 400 lpp.
8. Kundziņš M. (2004) Dabas formu estētika. Rīga: Madris. 168 lpp.
9. Maldavs Z., Melluma A., Seile A. (1981) Ģeomorfoloģijas pamati. Rīga. 178 lpp.
10. Melluma A., Leinerte M. (1992) Ainava un cilvēks. Rīga: Avots. 168 lpp.
11. Ryden L., Migula P., Andersson M. (2003) Environmental science. A Baltic University Publication.
12. Vides zinātne (2008). M.Kļaviņš (red.). Rīga: LU Akadēmiskais apgāds. 599 lpp.
13. Vides un ilgtspējīga attīstība (2010). M. Kļaviņš un J.Zaļoksnis (red.). Rīga: LU akadēmiskais apgāds. 334. lpp.
14. Ziemeļniece A. (1998) Estētiskā kvalitāte ainaviskajā telpā. Jelgava: Latvijas Lauksaimniecības universitāte. 98 lpp.

Further reading:

1. Ainavu aizsardzība. Nozares pārskats rajona plānojuma izstrādāšanai (2000). Rīga: Vides aizsardzības un reģionālās attīstības ministrija. 92 lpp.
2. Apdzīvotu vietu meži un dārzi (1988). K.Buivids (sast.). Rīga: Zinātne. 181 lpp.
3. Dienvidsēlijas ainavas. Ainavu inventarizācija, apsaimniekošana un aizsardzība (1996). Rīga: Vides aizsardzības un reģionālās attīstības ministrija. 130 lpp.
4. Fenby-Taylor H. (2016) BIM Landscape. NY: Landscape Institute, Taylor & Francis Group. 175 p.
5. Geographical Information Systems. Trends and Technologies (2014). (eds. E.Pourabbas). Broken Sound Parkway NW, Suite: CRC Press, Taylor & Francis Group. 359 p.
6. Introductory readings in Geographic Information Systems (1990) (eds, D.J.Peuquet, D.F.Marble). London, New York, Philadelphia: Taylor & Francis. 442 p.
7. James A., LaGro Jr. (2008) Site Analysis: A Contextual Approach to Sustainable Land Planning and Site Design. 357 p.
8. Journal of Landscape Architecture (Jola). [tiešsaiste] : European Council of Landscape Architecture Schools (ECLAS). Online ISSN 1862-6033. [skatīts 06.06.2011]. Pieejams: http://www.info-jola.de/heft_current_issue.htm
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10. Latvijas dabas fonds. (2001) Latvijas biotopi.
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13. Stahlschmidt P., Swaffield S., Primdahl J., Nellemann V. (2017) Landscape Analysis. Investigating the Potentials of Space and Place. NY: Routledge. 224 p.
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18. Wang F.(2015) Quantitative Methods and Socio-Economic Applications in GIS. Broken Sound Parkway NW, Suite: CRC Press, Taylor & Francis Group. 334 p.
19. Wang. F., Raton B. (2006) GIS and Basic Spatial Analysis. In: Tasks Quantitative Methods and Applications in GIS, FL: CRC Press, Taylor & Francis Group, p. 1-18.
20. Žukova Z. (2001) Latvijas zili zaļā rota. Rīga: Jumava. 330 lpp.
21. Яргина З.Н. (1991) Эстетика города. (Pilsētas estētika) Maskava: Стройиздат. 367 с.