

APPROVED
by the academic staff meeting of
Department of Landscape Architecture and Planning
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Sustainable Landscape Development

Jelgava

Programme

Code of the study course at LLU IS Register Arhi5055

6 CP (96 h): lectures. 36 h, pract.w./seminars 30 h, lab.w. 30 h, a formal test with a grade.

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Compulsory course of the full-time 1st semester Master's degree level study programme "Landscape Architecture and Planning" of the Faculty of Environment and Civil Engineering. The language of instruction is English.

Abstract:

The study course provides students with the basic knowledge of landscape planning, an important branch of landscape architecture, approaching it from the point of view of solving complex tasks. Students acquire basic principles of sustainable development of landscape architecture and its characteristic features, energy planning, territory planning and architectural essence of urban space, the role of landscape planning in the development planning, prerequisites and standards for landscape planning, as well as tools for landscape plan development and implementation.

The aim of the study course:

The aim of the study course is to acquire the basic knowledge of landscape planning in the context of sustainable development by including and using ecological, economic and social aspects of landscape / territory in planning.

Learning Outcomes (knowledge, skills and competence):

After completing the course students will have:

- **Knowledge:** students have knowledge of how to solve and assess various theoretical aspects of urbanisation in landscape planning to understand, interpret, apply and critically assess different information; knowledge about planning processes in municipalities and approaches in landscape planning.
- **Skills:** students are able to choose relevant research and data processing methods for the analysis of the current situation, substantiate the choice, interpret the results of data analysis and make appropriate conclusions.

- **Competence:** Students have competence to perform data analysis in cooperation with a supervisor; apply other research results in practice, forecast landscape planning framework in relation to development processes in Latvia and other regions.

Relation of the study course with other subjects:

The study course is related to other study courses acquired in the academic Bachelor's degree programme "Landscape Architecture and Planning".

Requirements for individual work:

Individual laboratory assignments have been developed and submitted and presented by students. Reports on topics in relation to any of areas/aspects of sustainable landscape planning have been developed and presented in the seminars by students.

Assessment of knowledge:

Presentation and discussions in seminars. Individual laboratory assignments have been completed and submitted and have received a positive evaluation (a pass).

Requirements for the admission to the examination/ test:

Attendance of classes at least 75%. Individual laboratory assignments submitted and presented in the scheduled time. Participation in the seminars, submitted presentations for seminars. The grade for individual practical assignments submitted after the scheduled time (if there is no valid reason) shall be reduced by 1 point. An accumulative assessment is received, calculating the average grade from the received grades.

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 essay for the missed class is not required.

Extended content of the programme

The concept of "region". The region's diversity and types, the essence of "regional approach". The regional structure of Latvia. Different formations of the regions. Different zoning schemes.

Regional policy. Regional development plans, history of development planning. Strategic and directive planning. Planning "from the bottom up", resource identification and updating ideas.

Basic principles of regional planning. Planning of ideas and activities. The image of the region and its perception. The factors influencing the image of the region. Sustainable spatial planning, resource balancing and organization for climate change reduction. The role of regional marketing in promoting competitiveness. Types and principles of regional marketing. Marketing tasks and goals. Regional marketing, marketing strategies. Assessment of regional marketing opportunities in Europe. SWOT analysis. Strategic orientation.

Regional development, its criteria, management possibilities and methods. Regional competitiveness assessment approaches and models. External communication guidelines. Regional marketing factors. Critical success factors in regional marketing.

Territorial planning. The aim and scope of the territorial planning, spheres of application, different types of plans. Legislative and regulatory framework. Territorial planning procedures in Latvia, its hierarchy. Environmental impact assessment in the context of territorial planning. Planning of parish development, its main principles. Elaboration of parish development programmes, definition of a vision and objectives. SWOT analysis. Ecological footprint. Sociological surveys. Analysis of risk objects. Cooperation with neighbors. Territory planning using a variety of digital tools: MicroStation, AutoCad, GIS technologies.

Landscape management. Landscape management system development in Latvia and its components. Organizations related to landscape development issues.

Landscape Convention. The purpose and basic principles of the Convention. Implementation of the Landscape Convention in European countries and Latvia. European Landscape Award competition, examples of competition projects. Landscape policy guidelines.

Sectors having an impact on Latvian rural landscapes. Forestry, agriculture and rural development policy, their impact on the landscape. Use of GIS technologies in rural landscape planning and management.

Sustainable Development Guidelines of Latvia. Latvian Planning Documents and Structure. National Plan, Sustainability Strategy, regional and local documents.

Sustainable planning principles. Sustainable, smart and flexible environment. Spatial planning resources and their sustainable planning and management. The role of people in ensuring a sustainable landscape. Resource planning and management using GIS technologies.

Types of sustainable cities and their development models. Urban area development plans and multifunction zoning. Examples of European urban planning practices. Creating a system of functional zones and their conditions in ArcGIS.

Sustainable infrastructure and traffic organization. Street network planning principles in the urban environment. Cycling routes and public transport. Park & Ride and Park & Bike system. Green roof planning above highways, creating public green spaces.

Sustainable landscape design at local level. Local elements - rainwater collection systems, individual greenery elements, green roofs and facades. Ecological building and use of local climatic conditions, vegetation, water resources for environmentally safe construction. Use of recycled materials in construction.

Planning territories of urban activities. Mapping technologies of residential and tourist activities - maps of mental, recreational and daily activities. Recording activities using GIS technologies.

City's green network and blue-green structure. Watercourse planning, protection and management. Formation and maintenance of greenery in urban environment. Design of greenery and watercourses using GIS technologies.

Transformation of brownfields into green areas. Processing and management of brownfield inventory and the analysis of monitoring data using GIS technologies.

Eco villages, types of alternative energy production and the role of climate change reduction. Basic principles of forming eco villages. Energy producing landscapes.

Bio-corridors, passive and smart buildings, other landscape elements of the city. Local elements - rainwater collection systems, individual greenery elements, green

roofs and facades. Ecological building and use of local climatic conditions, vegetation, water resources for environmental construction. Use of recycled materials in construction.

List of practical assignments, seminars (30 h)

1. Practical assignment: assessment of regional marketing opportunities. SWOT analysis (4h)
2. Practical assignment: to study, collect information about the activities of a country of a student's choice in the implementation of the Landscape Convention (2h)
3. Practical assignment: special literature studies on sustainable urban planning approaches and modules (4h).
4. Seminars: analysis of good practice examples of sustainable spatial planning (4h); Presentation and discussion during seminars (6h).
5. Practical assignment: Analysis of basic principles of creation of eco village (4h) and modelling in the classroom (6h)

List of laboratory assignments (30 h)

1. Territory planning by means of various digital tools: Microstation, AutoCad, GIS technologies (6h).
2. Planning and managing resources for territorial planning using GIS technologies (4h).
3. Establishment of functional zones of the territory and their conditions in the ArcGIS medium (4h).
4. Mapping technologies for residents' and tourist activity: mental, recreation and daily activity maps and mobility tracking using GIS technologies (6h).
5. Design of greenery and watercourse structure using GIS technologies (6h).
6. Collection and management of brownfield inventory and monitoring data using GIS technologies (4h).

Lectures (36 h)

1. The concept of “*region*”. The region's diversity and types, the essence of "regional approach". (2h).
2. Regional policy. Regional development plans, history of development planning. (2h)
3. Basic principles of regional planning. Planning of ideas and activities (2h)
4. Regional development, its criteria, management possibilities and methods (2h)
5. Territorial planning. The aim and scope of the territorial planning, spheres of application, different types of plans. (1h)
6. Legislative and regulatory framework. Territorial planning procedures in Latvia, its hierarchy. Planning of parish development, its main principles. (2h)
7. Analysis of risk objects. Cooperation with neighbors. (1h)
8. Territory planning using a variety of digital tools: MicroStation, AutoCad, GIS technologies. (2h)
9. Landscape management system development in Latvia and its components. (1h)
10. The purpose and basic principles of the Convention. Implementation of the

- Landscape Convention in European countries and Latvia. (1h)
11. Sectors having an impact on Latvian rural landscapes. Forestry, agriculture and rural development policy, their impact on the landscape. Use of GIS technologies in rural landscape planning and management. (2h)
 12. Sustainable Development Guidelines of Latvia. Latvian Planning Documents. (1h)
 13. Sustainable planning principles. Sustainable, smart and flexible environment. Planning and management of resources. The role of people in ensuring a sustainable landscape. Resource planning and management using GIS technologies. (2h)
 14. Types of sustainable cities and their development models. Creating a system of functional zones and their conditions in ArcGIS. (2h)
 15. Sustainable infrastructure and traffic organization. (1h)
 16. Sustainable landscape design at local level. (2h)
 17. Planning of territories for urban activities. (2h)
 18. City's green network and blue-green structure. (2h)
 19. Transformation of brownfields into green areas. (2h)
 20. Basic principles of forming eco villages. (2h)
 21. Bio-corridors, passive and smart buildings, other landscape elements of the city. (2h)

Bibliography:

Compulsory reading:

1. Ainavu plānošana, apsaimniekošana un aizsardzība lauku pašvaldībās (2001). Rīga: Vides aizsardzības un reģionālās attīstības ministrija. 28 lpp.
2. Apdzīvotu vietu ilgtspēja (2001). Rīga: LU. 60 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 pilsēt būvniecība. Rīga: Rīgas Tehniskā universitāte. 219 lpp.
6. Kruše P., Kruše M., Althaus D., Gabriēls I. (1995) Ekoloģiskā būvniecība. Rīga: Preses nams. 400 lpp.
7. Nitavska N., Zigmunde D. (2013) Zaļās pilsētvides plānošana. Rokasgrāmata plānotājiem. Jelgava: Zemgales plānošanas reģions. 114 lpp.
8. Thompson I.H. (1999) Ecology, Community and Delight. London: E&FN Spon. 188 p.
9. Vaidere I., Vanags E., Vanags I., Vilka I. (2006) Reģionālā politika un pašvaldību attīstība Eiropas Savienībā un Latvijā. Rīga: Latvijas Universitātes Akadēmiskais apgāds, Latvijas Statistikas institūts. 296 lpp.
10. Vide un ilgtspējīga attīstība (2010) (red. M. Kļaviņš un J. Zaļoksnis). Rīga: LU akadēmiskais apgāds. 334. lpp.

Further reading:

1. Ābolīņš O. (2010) No leduslaikmeta līdz globālajai sasilšanai. Dabas vides pagātne un tagadne Latvijā. Rīga: LU Akadēmiskais apgāds. 128 lpp.

2. Applied Urban Ecology: A Global Framework (2011) M. Richter, U.Weiland (eds.), 235 p.
3. Armstrong H.W., Taylor J. (2000) Regional economics and policy. 3rd edition. Oxford: Blackwell. 432 p.
4. Basics Landscape Architecture 02: Ecological Design (2011) (eds. N. Rottle, K Yocom)
5. Beer A.R., Higgins C. (2000) Environmental Planning for Site Development. A manual for sustainable local planning and design. London: E&FN Spon. 352 p.
6. Bendere R., Teibe I, Pacina J.M., Sunnsets H., Kasparinskis R., Kudreņickis I., Bennett A.F. (2003) Linkages in the Landscape. The Role of Corridors and Community Participation and Geographic Information Systems (2002) (eds. W.J.Craig, Harris T.M.Trevor and D.Weiner). London & NY: Taylor & Francis Group. 410 p.
7. Bioloģiskās daudzveidības stratēģija (2000). Rīga: Vides aizsardzības un reģionālās attīstības ministrija. 13 lpp.
8. Connectivity in Wildlife Conservation. Cambridge: IUCN, Gland. 254 p.
9. Fenby-Taylor H. (2016) BIM Landscape. NY: Landscape Institute, Taylor & Francis Group. 175 p.
10. Geographical Information Systems. Trends and Technologies (2014). (eds. E.Pourabbas). Broken Sound Parkway NW, Suite: CRC Press, Taylor & Francis Group. 359 p.
11. Godschalk D.R., Malizia E.E. (2017) Sustainable Development Projects. Integrating Design, Development, and Regulation. London & NY: Routledge. 129 p.
12. Introductory readings in Geographic Information Systems (1990) (eds, D.J.Peuquet, D.F.Marble). London, New York, Philadelphia: Taylor & Francis. 442 p.
13. Kennen K., Kirkwood N. (2015) Phyto: principles and resources for site remediation and landscape design. Routledge, New York. 346 lpp.
14. 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.
15. Landscape and Sustainability (2000) (eds. J.F. Benson and M.H. Roe). London & NY: Spon Press. 337 p.
16. Latvijas ilgtspējīgas attīstības pamatnostādnes. Pieejams: <http://www.varam.gov.lv/varam/doc/ilgt.att/pamatnost.htm>
17. Makhzoumi J., Pungetti G. (1999) Ecological Landscape Design and Planning. London: E&FN Spon. 330 p.
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19. Representing Landscapes: Digital (2015) (eds. N. Amoroso). London & NY: Taylor & Francis Group. 293 p.
20. Resilient Sustainable Cities. A future (2014) (eds. L.J. Pearson, P.W. Newton, P.Roberts). NY: Routledge. 267 p.
21. Roehr D., Fassman-Beck E. (2015) Living Roofs in Integrated Urban Water Systems. London, England, Routledge. 178, lpp.
22. Ryden L., Migula P., Andersson M. (2003) Environmental science. A Baltic University Publication.
23. Selman P. (2012) Sustainable Landscape Planning. The Reconnection Agenda. London: Routledge. 177 p.

24. Šmigins R., Vidužs A., Burlakovs J. (2016) Klimata izmaiņas, ko rada antropogēnie procesi - atkritumu un notekūdeņu apsaimniekošanā. Rīga: Biedrība "Latvijas Atkritumu saimniecības asociācija". 145.lpp.
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28. Stremke S., Van Den Dobbelsteen A. (2013) Sustainable Energy Landscapes: Designing, Planning, and Development: Applied Ecology and Environmental Management. A SERIES (eds. Sven E. Jørgensen). Broken Sound Parkway NW, Suite: CRC Press, Taylor & Francis Group. 514 p.
29. The Routledge Companion to Landscape Studies (2013) (eds. P.Howard, I.Thompson, E.Waterton). NY: Routledge. 513 p.
30. The Routledge Handbook of Sustainable Design (2018) (eds. R.B.Egenhoefer). NY: Routledge. 547 p.
31. Thompson J.W., Sorvig K. (2000) Sustainable landscape construction: a guide to green building outdoors. Washington: Island Press. 350 p.
32. Walliss J., Rahmann H. (2016) Landscape Architecture and Digital Technologies. Re-conceptualising design and making. London & NY: Taylor & Francis Group. 296 p.
33. Wang F.(2015) Quantitative Methods and Socio-Economic Applications in GIS. Broken Sound Parkway NW, Suite: CRC Press, Taylor & Francis Group. 334 p.
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