EU-Land21

Trans-European Education for Landscape Architects

Output O2: Peer learning methods on the development of a curriculum

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1 Introduction

1.1 Context: the EULAND21 project

The design of a programme, blocks of competences and modules is Output 2 of the Erasmus + Strategic Project EULAND21.
In the face of recent environmental, social and economic challenges, the profession of landscape architecture (LA) is assigned new roles and missions of being prepared to respond to rising expectations of environment and society. The role of a landscape architect is not only adding aesthetic value. Landscape architects ensure sustainability of ecosystems in general, thus contributing to implementation of strategies like Europe2020, Paris agreement on Climate Change Mitigation, etc.
Currently about 80 higher education institutions (HEI) in more than 30 countries provide LA education in Europe. Aiming for trans-European recognition of the LA profession it is essential to have harmonised but levered education systems across the continent. We need LA education systems and training programmes that allow for regional socio-economic and environmental specifics, on one hand, and are in line with the basic European requirements, on the other, so that landscape architects can practice their profession without borders and benefit from interaction of multicultural environments. IFLA (International Federation of Landscape Architects) and ECLAS (European Council of Landscape Architecture Schools) in close cooperation with national LA associations and academic community have analysed LA education in all European countries and developed the explicit set of requirements for providing and improving LA education in Europe (ECLAS Guidance on Landscape Education, 2010). Still, many schools and programmes to different extent mismatch the framework drafted by this guidance document and therefore need an upgrade. Current LA professionals lack competencies of team working, interdisciplinary thinking and practice-oriented skills for landscape planning, design and maintenance, as stipulated in European Landscape Convention that was adopted and ratified by all participating partner's countries. Thus, the aim of the project is to develop a 1st cycle joint study programme in LA, which will focus on developing both professional and transversal competencies, be flexible and adaptable to emerging market trends.
The objectives of the EULAND21 project are (1) to identify the gaps in LA education and bridge them by using the IFLA-ECLAS Guidance methodology, practical experiences and specific tools to promote learning. The project partners also (2) assess the legal framework in their countries to ensure smooth accreditation of joint degree programme that will facilitate mobility of existing and incoming students. In order to develop the study programme they (3) identify the specific competencies that are needed in different countries and (4) select corresponding educational tools to address them resulting in more competent specialists with better employability opportunities. Instead of duplication and competition, partners go for networking and complementary cooperation. The project drafts a map of key and LA specific competences across the participating HEIs, regions and the whole EU.

In Lithuania, the project will lead to establishing a new LA study programme at VGTU, in other countries – to upgrade of existing LA programmes. The cooperation opens the space for joining training between different HEIs and launching a joint or double degree programmes. Partners will upgrade the programmes in a practice-oriented way to respond to the needs of labour market and strengthen employability skills of graduates. The project ensures this by involving IFLA-Europe

(umbrella practice and education association of LA professionals) and DSL (collaboration between Dutch LA companies and research institutions) into all project activities. Moreover, partnership with IFLA-Europe will allow project partners accessing all national LA associations across the Europe even beyond the present partnership, and DSL – leaders of LA in Europe.

This report relates to output O2 of the project.

1.2 Aim of Output 2

The aim of activity O2 within the EULand21 Project is to draft the conceptual framework for the development of a landscape architecture study programme. It is based on a set of academic *competences*, corresponding blocks of competences (*learning lines)* and *training subject modules* (TSMs) and relevant *learning methods and materials (for instance reference books)*.

Output 2 consists of two parts: A1 The blocks of competences (also called learning lines) which are developed for the whole learning trajectory of 1st and 2nd cycle, for bachelor and master-level. And part A2 provides a pool of modules that can be used by schools to design a first cycle study programme of 180, 210 or 240 ECTS in landscape architecture. Some of the modules can also be part of a second cycle (master) study programme.

The first objective is to use this framework to develop a first cycle programme at the Vilniaus Gedimino TU in Lithuania. Secondly the project aims to develop flexible learning pathways so that schools can select necessary modules and introduce them into new or existing programmes based on their needs. Schools can use the descriptions of the blocks of competences (learning lines) and modules to update and further develop their study programmes.

This report is reviewed by IFLA Europe in order to make it consistent with their framework for the recognition of landscape architecture programmes. The external feedback can be found in the Appendix “Process Report of External Review EULAND21 Blocks of Competences and Modules”.

This report forms the key output to design joint or double degrees study programmes that meet the standards for accreditation according to national and European guidelines.

Additional information will be made available on a Moodle platform installed by Vilniaus Gedimino TU with references, videos, instructions, etcetera.

1.3 Activities

For developing the framework two main activities are carried out: the design of blocks of competences and developing the description of blocks of competences (learning lines) , modules and contents. Step by step the following activities were undertaken:

- Analysing literature on learning, teaching and assessment and the legal framework for higher education in Europe;
- Analysing case studies of teaching landscape architecture;
- Organising meetings with experts and educators to discuss the framework;
- Assessing feasibility of proposed blocks of competences (learning lines) and TSM in real case scenarios during summer schools and training sessions.
- Discussing with partners compatibility of each subject between institutions.

2 A framework for landscape architecture programmes

2.1 Context

The conceptual framework builds upon the conclusions of output O1 of the EU Land 21 project 'Guidelines on Revising and Developing Study Programmes in Landscape Architecture'. This analysis provides the legal, educational and pedagogic framework for landscape architecture education.

Figure 1. Context of the conceptual framework for a landscape architecture programme – author Prof F. Auweck, IFLA

The foundation consists of the ECLAS Guidance report (ECLAS 2010) and the , IFLA Charter and Guidance Documents. It conforms with the Birmingham Declaration on the Minimum Requirements for European Landscape Architecture Studies to Qualify for Professional Recognition by EFLA and ECLAS (2012). The competences and the starting points for a landscape programme are further elaborated in order to make these applicable for the development of a curriculum.

The framework comprises a detailed description of the competences, a set of blocks of competences (learning lines) and modules based on the subject-specific competences of landscape architecture and guidelines for course units. A learning line is based on acquiring a subject specific competence and forms a continuous trajectory that shows from start to the advanced level how students acquire in various modules and courses. The relation between programme, competences, blocks of competences (learning lines), modules and course units is shown in figure 2.

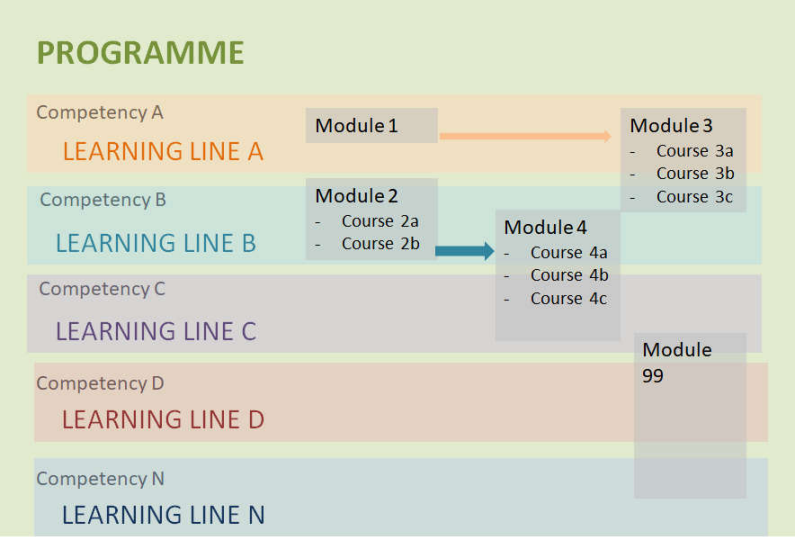

Figure 2 The relation between programme, subject specific competences, blocks of competences (learning lines), modules, and courses.

A programme is based on sets of competences. For subject specific competences blocks of competences (learning lines) are developed that define how the competences are taught during the programme. Each learning line is related to a set of modules. The blocks of competences (learning lines) describe the levels, tasks, activities. The actual learning and teaching takes place in modules (subdivided in courses) that address one or more competences and have specific teaching modes.

2.2 Starting points

Starting points for the development of the framework are set on the level of a programme, for the blocks of competences (learning lines), modules, courses and the learning modes. The general principle is that the programme meets the standards and requirements for the discipline of landscape architecture, including professional practice and academic standards. The programme is expected to respond to the need of high-level academic landscape architecture training in Europe and increase the quality of education in partner countries by offering the tools for continuous upgrading and modernisation of the LA study process. As a result, international landscape architecture training should encourage trans-national mobility and better employability of the graduates.

Programme

The starting points for landscape architecture programmes are:

a. A first cycle programme consists of 240 ECTS in order to meet the standards of the IFLA Europe recognition (E2_IFLA Guidance Document for Recognition or Accreditation_2008_with_IFLA Europe addenda_2017). If the first cycle contains less ECTS, it should be followed by a master programme that sums up at least to 240 ECTS.

b. In each programme the students should learn for at least 50% of their time in studios or integrating project work in order to be able to acquire the core competences in an integral way (see Figure 3).

c. A bachelor programme should contain a course unit that consists of t an internship for acquiring the basic professional competences of at least 15 ECTS and preferably 30 ECTS (see Figure 3).

d. For the completion of the programme students should prove their competence by a combination of a landscape architecture final project and a thesis showing their research capacity. The combination of these two course units should consist of at least 30 ECTS (In the example of Figure 3, a four years programme both cover 60 ECTS). For combination of a 3 years bachelor and a 2 years master it can be difficult to allocate an adequate number of ECTS to professional practice in the bachelor phase. Then part of the professional practice should be included in the master cycle.

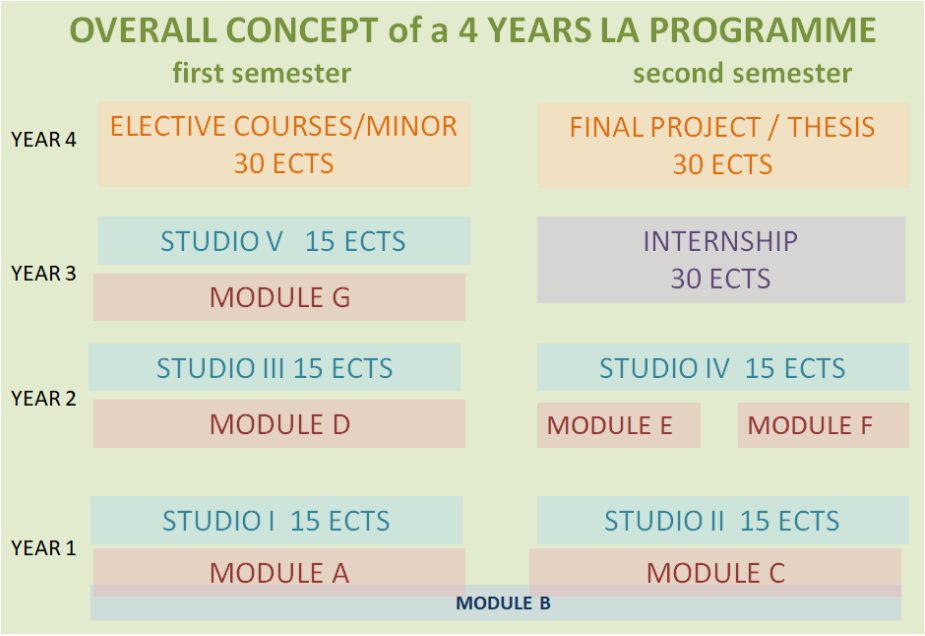

Figure 3 Example of the overall concept of a 4 years LA Programme with final project, elective semester and internship

e. A programme has allocated possibilities for the personal and professional profile of students in the form of elective and optional course units / a minor. Students can study at another university (e.g. by Erasmus exchange, at other faculties of their own university or choose elective subjects (mostly specialisations) offered by their own programme.

f. A landscape programme should also reserve a number of ECTS for courses/modules that are university broad and in which students are acquiring more general competences.

g. Relevant themes and challenges in society and for the environment such as climate change, flood prevention, inclusive planning, food security, are integrated by selecting projects and planning commissions that relate to these issues. In this way the content of the programme is always up to date and addresses the needs of society.

Competences

The starting points for competences are:

h. The competences are based on the ECLAS Guidance report (2010) with additional details from the EU Teach project and the results of the EBANALAS analysis that was carried out within the framework of the EULAND21 project.

i. To the competences the project added a block of competences that relates to 'Landscape architecture foundation, background and supporting competences'.

j. Students acquire generic competences (presenting, working in interdisciplinary groups) in several course units. When defining the actual programme a competence matrix should be drawn up to show where students practice these and in which course unit the assessment takes place. Each student develops a process / work progress book in which he/she notes down the progress of generic and other competences. The process book is part of the assessment.

k. A learning line is based on a subject specific competence. It shows the different levels of competences. For each learning line a chart is defined that provides a format for developing a programme consisting of modules and course units in a structured way.

Modules and courses

l. A module consists of a minimum of 5 ECTS and may be divided in courses. Assessment takes place on the level of a module.

m. A course is related to one or more competences and a set of generic competences. For the latter a competence-matrix is drawn up that shows where students acquire their competences and when these are assessed.

n. The allocated number of ECTS is based on the EBANALAS analysis of a set of existing and recognised landscape architecture programmes in Europe.

2.3 Competences based on the ECLAS Guidance report & IFLA Guidance

The ECLAS Guidance was derived from the so-called Tuning Project carried out within the LE:NOTRE Networking Project (www.le-notre.org). The European Union's 'Tuning Project' aimed to provide a practical framework to implement the Bologna Process. The name 'Tuning' was chosen for the project to reflect the idea that universities would be interested in having points of reference, convergence and common understanding for developing their degree programmes; they would not look for a kind of harmonisation that leads to making unified, prescriptive or definitive European curricula. The Tuning Project implied that greater comparability and transparency should be achieved through a 'bottom-up' dialogue, held between the academics involved in teaching and developing the subject area at Europe's universities. The common points of reference were developed and agreed jointly by academics within each of the disciplines concerned. In the framework of the Tuning Project five 'lines' were distinguished to organise discussions in participating subject areas:

1. Generic competences of transferable skills,
2. Subject-specific competences,
3. The role of ECTS as an accumulation system,
4. Approaches to learning, teaching and assessment,
5. The role of quality enhancement in the educational process.

Landscape architecture competences

Core competences of landscape architecture centre on the process of intervention in landscapes to create new or revitalised places, by means of landscape planning, design and management, as well as by project implementation. Two interdependent core competences of landscape architecture are:

- Knowledge, skills and understanding of planning, design and management, to create new or conserve existing landscape situations, closely integrated with an
- holistic knowledge and understanding of the nature of landscape and the ways in which it is perceived in time and space, and the pressures and driving forces to which landscapes are subjected.

According to the terminology used in the 'Tuning Project' *generic competences* refer to knowledge, skills and understanding that students acquire regardless of their particular area of studies. These are often also referred to as transferable or 'soft' skills. Generally speaking, landscape architecture degree programmes are ideally placed to provide students with the opportunity to acquire and practise a wider range of generic competences as a result of the emphasis placed on project work, and it is largely in the context of project and studio teaching that generic competences are learned and practised throughout the degree programme. It is, however, important that course descriptions explicitly specify which these are, and that thought is given to how the acquisition of generic competences can be further improved.

Generic competences were divided by the 'Tuning Project' into three categories:
a. instrumental competences, i.e. capacity for analysis and synthesis (code INS);
b. interpersonal competences, i.e. critical and self-critical abilities and teamwork (code INT);
c. systemic competences, i.e. capacity for applying knowledge into practice (code SYS).

Competences specific to landscape architecture *(subject specific competences*) are defined according to 12 fields reflecting the key areas of knowledge and expertise of the discipline. These fields are expressed in terms that are specifically landscape architecture related; each of them also include

areas of knowledge, skills and understanding which are common to a number of neighbouring disciplines. Such subject matter from neighbouring disciplines may also feature prominently in the curricular of landscape architecture programmes.

These key areas of knowledge and expertise are grouped according the aspects of landscape architecture they address: theory, process, categories of projects, materials, tools, and practice. This is in line with the areas of knowledge and skills that are defined in the IFLA Guidance: 1.Landscape design and planning, 2. Man, Society and environment, 3. Natural and functional aspects of landscape, and 4. Techniques and Management.

Type of competence	**Blocks of Competences / Learning line**	
Basic	G1	Landscape architecture foundation, background and supporting competences
Theory	A1	Theory and Methodology in Landscape Architecture
Process of Planning, Design & Management	B1	Landscape Design
	B2	Landscape Planning
	B3	Landscape Management
Categories of projects	C1	Urban Open Space Planning (and Policy)
	C2	Interpretation and Conservation/Management of Cultural Landscapes
	C3	Conservation/Management of Parks and Gardens
	C4	Planning/Design for Infrastructure Projects (and Landscape Impacts)
Vegetation & Materials	D1	Materials and Construction Techniques
	D2	Vegetation Establishment and Plant Materials
Tools	E1	Information Technology in Landscape Architecture
Practice	F1	Professional Practice of Landscape Architecture & Entrepreneurship
Fig 4. The 12 subject-specific competences for landscape architecture (ECLAS 2010) with an additional one for the foundations of geoscience and ecology		

To the ECLAS blocks of competences one learning line is added that relates to 'Landscape architecture foundation, background and supporting competences. It covers subjects such as the foundations of geoscience and ecology (hydrology, ecology, soil science, geology, etcetera).

2.4 A didactic approach for landscape architecture education

A didactic approach for landscape architecture education

The didactic approach used for developing this programme is based on the theory of Social Constructivism in learning: Vygotsky's (1986) Zone of Proximal Development (the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance, or in collaboration with more capable peers).
The learning is called constructivist because the learner must elaborate on and link the new information to other information. It is cumulative learning because this other information should already exist as prior knowledge.
It is goal-oriented learning because the learner is only the most receptive for adopting new knowledge if he or she knows what it is for and what it takes for him. Therefore students must be presented with tasks and problems that are consistent and representative of the various contexts in which they will have to apply their acquired knowledge and skills later on in the real profession. This means that assignments, tasks and problems that are used in the learning environment should have a high reality level.

Learning theories and the position of constructivism (Fetzer, 2013)
Constructivism is much different from earlier theories such as behaviourism in which a learner is supposed to reproduce specific characteristics by means of repetition of external schemes or through reward or penalty schemes. With the introduction of the cognitivist approach the emphasis shifted to mental skills such as understanding, analysing and evaluating. These skills are the foundation for any type of problem-solving. Learning with models plays an important role as well as the transferability of knowledge and skills from one context to another. Cognitivism accepts that a learner may develop different mental concepts depending on his/her previous knowledge. However, this theory also assumes that there is one correct external model that a learner is supposed to internalise. Therefore, the teacher would take the role of an instructor who is introducing this reference model to the students and constantly observing their practice. Consequently, there might be more or less correct ways of how students succeed in this process.
This is the point where constructivism comes in. This theory assumes that there is no objective way of representing the reality. Instead, there are as many constructions of reality as there are people in the world. In a learning context this means: both learners and teachers are constantly constructing realities, meanings and concepts. There can be communication and exchange about these constructions but there is no final model that could be transferred from a sender to a receiver. There is no objective observation.
The cognitivist approach aims at the development of problem-solving competences. This approach is adequate for evident problems for which transferable problem-solving models can be taught and learnt. Constructivism looks instead for ill-defined or probably even invisible problems in fuzzy and complex situations for which no transferable model exists yet. Such situations are quite common in contemporary landscape architecture practice.

Characteristics and elements of a constructivist learning environment
A starting point is that the individual mind decides whether knowledge is viable or not. The precondition for viability is the possibility to connect new knowledge to existing mental concepts. Observation, differentiation and individual responsibility are thus crucial for the success of constructivist learning. In this context, the main role of the teacher is to offer opportunities for authentic encounter, diversity experience, discourse, communication and mutual awareness in order to facilitate and stimulate constructivist learning processes. This does not mean that lecturing would not take place any more. But the lecture represents only one version of a possible truth that is presented with the aim of triggering individual knowledge construction. The teacher becomes an attentive and motivated observer of a process for which also a high level of self-reflection and calmness is required.

The approach of interaction-based constructivism provides a practical model for specifying learning processes. There are three main phases of knowledge processing: reconstruction, construction and deconstruction. If confronted with a question, a task or a problem, students would first start reconstructing the subject. This means that they try to identify how much they already know, what the previous experiences were, which concepts they have internalised and what they actively remember about it. During the construction phase, they would elaborate on the theme according to their previous knowledge and communicate this state to others. The following deconstruction can take the form of discourse, reflection, possibly critique, cooperation and other interactive processes. During deconstructions, new concepts and connections may emerge (or not) and provide the basis for the next reconstruction process, which could happen any time in a similar, a related or a completely different context.

The role of case studies in the constructivist environment
One major challenge for such type of learning environment is to guarantee effective communication of all those individual construction processes in order to allow for the required discourse and

exchange. This challenge is even more demanding with regard to the subject area and the intercultural context in which the subject is supposed to be discussed. Landscape architecture as a practice-led discipline works a lot with case studies (Francis, 2001). Case studies require knowledge on various levels such as landscape, social and political context, planning and design principles and legal frameworks, to name only a few. Obviously, some form of knowledge management is required at this point if a large number of international students is supposed to work with case studies according to constructivist principles. Therefore, a case study framework was introduced right at the beginning of the action research cycle. The framework follows the guidelines proposed by Marc Francis (2001) that were the basis for a suggestion provided by Simon Swaffield (2008) for the LE:NOTRE Thematic Network. The case study framework has the important function of allowing for high individual flexibility on the one hand (in particular for knowledge construction) and comparability of the individual contributions on the other hand. The framework connects the individual knowledge production to the wider group processes and thus provides the foundation for subject-specific discourse. The framework has been used differently in the course of this action research cycle. In some seminars the case studies have been documented individually on the wiki first and then the outputs were discussed in groups or in the plenary. In other seminars the framework was used to scaffold a collaborative writing process within a working group so that the discussions would already happen as part of the case study development.

Landscape architecture education and the constructivist learning approach

The nature of landscape architecture is procedural and the profession “must aim to take into account multi-layered views of the complexity of the landscape and its associated meanings and values for individuals, groups and society as a whole.” (ECLAS 2010: p.18). Furthermore, the emphasis of landscape architecture is on the design, planning and management processes that bring concrete change. Such change management implies knowledge and coordination of numerous spatial, economic and social processes, including involvement of the public. In this context, knowledge creation reveals itself through new forms of spatial organisation. This is the core objective of landscape architecture for which academic courses are supposed to prepare their students. Holistic teaching methods such as design studios have long tradition in this educational context. Design studios are a form of collaborative learning characterised by intensive exchange with group members and peers. Studios serve as a testing ground for all types of knowledge gained in theory and lecture courses. They foster those competences that are needed for taking up the profession. Design studios create a very competence-oriented, constructive and dynamic learning environment. A profound and widely recognized analysis of this process of reflective practice has been done by Donald Schön in his book ‘The Reflective Practitioner’ (Schön 1983).

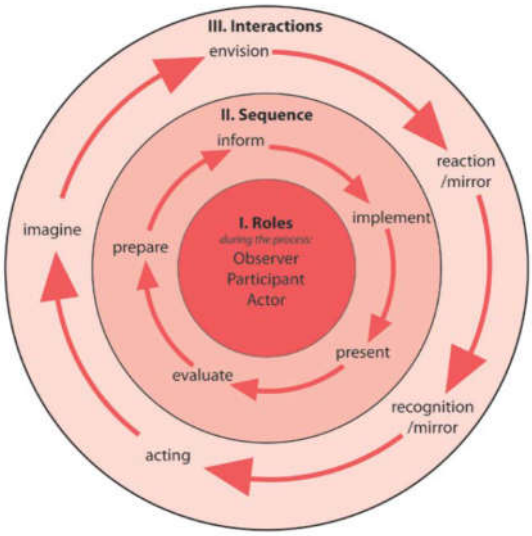

Figure 5. Holistic model for curriculum planning according to constructivist principles. The inner circle shows the roles both teachers and students may take during this process. They always need to aware of the respective role they are taking. The middle circle shows the logical sequence of activities. This sequence may take place several times and with unpredictable variations. The outer circle refers to the interactions between all actors during this process. Kersten Reich proposes this model for holistic and activity-oriented training. Figure taken from Fetzer, 2014

These characteristics of landscape architecture and its educational setting constitute big challenges to computer-supported learning environments. If collaborative knowledge creation dynamics are the core of this domain: How can this paradigm be maintained in an online environment? Computer-supported collaborative learning needs to go beyond knowledge sharing. Methods and models for enhancing knowledge building (or 'deep constructivism') are required if such a learning mode is to become relevant for landscape architecture education. The antagonism of 'design-mode thinking' versus 'belief-mode thinking' is crucial in this context.

The constructivist convention of 'no single external truth' also applies to the post-modern concept of landscape. Landscape is not an objectively measurable element. Landscapes are actively, constantly and individually constructed in and by our minds. This construction builds on previous knowledge while being nested and influenced by a cultural context and the values embedded therein. Conceptualising landscape is a part of the knowledge construction process that has been described already. Acting with and within the constructivist landscape approach requires strong generic competences in particular in the fields of diversity appreciation, synthesis (i.e. synthesis of different viewpoints) and knowledge creation (based on this synthesis) to name only the most relevant. The appreciation of generic competences has been confirmed within the European academic community as part of the tuning process.

With the sequence of modules the learner proceeds for each learning line from the basic level, through the intermediate level to the advanced (and master) level. Within the framework of the studio each learner constructs his or her own learning process. The learner makes his personal trajectory visible in the form of log books or process reports. Feedback is given by peers and by the tutors during studio critics and coaching. The assessment focuses on assessing the competences that are described in the learning lines and modules for which the process report or log also is assessed.

Competence levels and learning lines

The blocks of competences and modules are developed according to the principle of bridging the Zone of Proximal Development. Four levels of competence are defined: basic, intermediate, advanced, and master arranged in so called learning lines. The learning lines specify what is covered for each competence level and what needs to be mastered before a next step can be taken. The three levels are differentiated in role, products, actions, context, complexity, support, orientation towards the profession, and relation to the subject-specific competences.

The student acquires these competences by working alone or with others on the basis of professional assignments. In each part of the program, a professional product (or part thereof) is associated with the related activities. Around this professional product, knowledge and skills are built to make the professional product possible. The student works on the professional product by studying academic and professional literature, making reference studies, developing skills in studio-practice internally and externally, including computer practice and conducting professional activities such as measuring a site, etcetera.

In the beginning of the program the assignments are relatively simple, centred round one or two competencies. Later in the study the assignments become more complex and the competences are developed integrally. The studio as a learning environment and method is well suited for integrative learning. Case studies and reference studies are used to support these.

The program has a strong cumulative character: it constantly builds on previously acquired knowledge and skills. The assignments become therefore more complex and students are expected to carry these out to an increasing extent independently.

Competence levels

The blocks of competences (learning lines) and modules are developed according to the principle of bridging the Zone of Proximal Development. Therefore three levels of competence are defined: basic, intermediate, and advanced. The levels are differentiated in role, products, actions, context, complexity, support, orientation towards the profession, and relation to the subject-specific competences (Figure 6).

Level -> Aspect	Basic	Intermediate	Advanced	2nd Cycle
EQF	**6: 1st cycle bachelor level**			**7: 2nd cycle master**
Example of role	Junior clerk in a landscape team	Self-managing team member in a landscape team	Self-managing junior practitioner; team member that can co-ordinate a project.	Self-managing practitioner; team member that can co-ordinate a project and a team
Type of products	Simple professional products	Realistic professional product for a medium sized project or a well-defined area	Professional products for a junior practitioner	Professional products for a practitioner
Type of actions	Common professional actions	Experienced in all professional activities.	Mastering the whole range of professional activities	Mastering the whole range of professional activities including strategic and co-ordination
Context	The context is clear and provided with the task	Integration of the real life context	The student explores and defines the context him-/herself	The student explores and defines the context him-/herself and can support others in this
Com-plexity	These assignments have an unequivocal schedule of requirements and either an incremental design or a subdivision into sub-assignments.	The assignment has to be explored and redefined by the students.	Students define assignments themselves on the basis of a problem field or a general description by a commissioner or group of stakeholders.	Students define problems fields and assignments themselves on and advise commissioners or group of stakeholders in defining these.
Support	The student receives ample support during the performance of these sub-assignments and weekly feedback from the supervisors.	The students plan their work themselves and seek advice from tutors / experts on a regular basis.	The students study and work as professionals seeking feedback from peers and experts.	The students study and work as professionals seeking feedback from peers and experts.
Orien-tation towards the course and the profession	A general insight into the professional field. Familiarity with the methods and methods of approach used by the professional field. Insight into all the subject-specific professional competences	A deeper insight in the professional field, mastering the basis methods and approaches of the discipline. The student has selected a position that is appropriate to his or her ambitions and capabilities.	Students have an excellent overview of the professional field and can define their position in it. They contribute to developing the methods and approaches of the discipline.	Students have an excellent overview of the professional field and can define their position in it. They innovate methods and approaches of the discipline.
Relation to subject-specific competenc es	The module addresses one or two competences, and include aspects of research	The module addresses 2 or 3 competences. Requires a deepening of understanding of the integration of competences, including aspects of research.	The module relates to all landscape architecture competences and includes research and entrepreneurial competences.	The module relates to all landscape architecture competences and includes research and entrepreneurial competences.

Figure 6. Definition of the levels basic, intermediate and advanced and second cycle

Teaching modes

Studio learning is at the centre of landscape architecture education: it is here where students work on planning and design proposals for landscape inventions. Students work either individually or in small groups. Supervision and guidance includes frequent consultations and presentations. Around the studio a set of other teaching modes may be arranged to support specific learning processes. These consist of lectures, seminars, and excursions.

The role of case studies
Francis (2001) states that: "landscape architecture is predominantly taught by example. Case studies are an effective and established way to use examples in the classroom or studio. Most schools include some form of case study method in their curriculum. Case studies are a useful way for students to gain insight into past projects in order to successfully design new ones. They are particularly instructive in teaching history and useful for students in community outreach projects. Case studies are an excellent way to get students involved in landscape architecture research since the method is easy for students to use."

Because landscape architecture students should develop a varied set of references for their design work and have a good experience of existing urban and rural landscapes excursions (study trips) are an important part of LA programmes. The excursions can be either prepared by teachers or by students. Performing preparatory seminars and writing summary reports enforces the learning effect.

Study trips and excursions, both to reference projects and to the site or planning area, are also needed to enable students to experience their project landscape and to personally collect data and information. Landscape architects must be able to perform their own landscape analysis and, ideally, this analysis is based on immediate exposure to the landscape.

Lectures and seminars contribute additional information to the studio. These are important for instruction on the use and selection of methods; included are theories and case studies that are relevant to the studio work. If they are designed to provide interaction between teachers and students seminars help students to deepen their understanding of theories and to reflect on the content of case studies. For preparing and writing a paper, or a thesis, teaching assumes the form of a tutorial. This mode of teaching and learning is mostly done on a one to one basis.

To acquire practical skills, i.e. working with specific software or maintenance techniques, different forms of practical work are included into programmes, modules, courses, etc.
Practical exercise(s) are undertaken by students, either individually or in groups, with direct supervision by a teacher or instructor. For the practical work a pre-defined task of the use of specific techniques should be provided. For best learning effect, practical training may also be linked to studio projects. For example, sketching may be trained during landscape analysis, certain software applications may be trained in connection with designing scenarios and planning alternatives.

Workshops are short, often intensive, courses in which groups of students have a specific (design or planning) task or explore a specific subject in which they participate actively and share their knowledge, skills and experiences. Workshops often include several plenary sessions in which the students show their results to each other or to external parties.

To acquire professional competences internships should be included into LA programmes. These consist of an extended period of supervised residency on the part of the student in a design or planning office or in a nursery or contracting firm to gain practical work experience.

Experience gained during periods of practical training outside of the university should be reflected upon, for example by writing a scientific term paper, or by keeping and discussing a diary, or by preparing a thematic report.
An overview of the teaching modes in alphabetical order is shown in Scheme 1.

Teaching mode	Acronym	Definition
Case study analysis	CSA	A case study is a well-documented and systematic examination of the process, decision making and outcomes of a project which is undertaken for the purpose of informing future practice, policy, theory, and/or education (Francis, 2001). Apart from the case study, students will carry out other research tasks, and these are categorised under the heading of Self-Study.
Study Trip	ST	Field visit or visits, usually lasting for a number of days. Preparatory research and/ or the writing of a report is usually also involved. [Synonym: "Field Trip"]
Field visit	FV	Visit to a site e.g. the area where the design assignment is located, of a reference project for the studio or for a case study.
Internship	IN	Professional training in a (landscape) office or at a department of a local authority as an apprentice under guidance of a academically schooled practitioner.
Lecture	LE	Form of teaching in which information is imparted, usually verbally and visually, to a large group of students with a minimum of interaction.
Practical work	PW	Teaching form involving practical exercise(s) or undertaken by students, either individually or in groups, involving direct supervision of a group of students in the performance of a pre-defined task or tasks of the use of specific techniques. [e.g. landscape maintenance, planting, small construction works) that also includes a personal evaluation of the work by the student.
Self-study	SS	Teaching mode in which students are given a programme of reading, exercises to work through, or a research task without any specific input from the teacher. This might also include writing a thesis. Depending on the level (basic, intermediate, advanced, master) the self-study is supervised to a certain extent.
Seminar	SE	Small group teaching mode, in which short papers on subject areas defined by the teacher are prepared by individual students or small groups and presented to the whole group. Might be combined with introductory lectures.
Studio & Project work	SP	Form of teaching in which students are involved in the development of design or planning proposals working to a given brief or one which they develop themselves, either individually or in small groups. Supervision, involving consultations and intermediate presentations, takes place on a regular but flexible basis by one or more staff. [Synonym:"Project Work"]
Workshop	WO	Short, often intensive, courses with group work on specific (design or planning) tasks which often include plenary presentations of (mid-term) results.

Scheme 1. Overview of teaching modes

Principles for defining the teaching modes are:

1. Planning the sequence of studios and project work and the period for an internship according to the main rationale of the programme and the educational framework of the university.
2. Making sure that studios are supported by a set of other teaching modes: lectures, seminars, case study work.
3. Enhancing the learning results of students by making logbooks of the working process, portfolios with their results and reflections.

3. Output 2- A1 Designing Blocks of Competences / Learning lines for landscape architecture

The blocks of competences (learning lines) are based on the subject specific competences. Each serves as a continuous learning-teaching trajectory through the whole programme. For the blocks of competences (learning lines) a Learning Line Card (LLC-card) is developed (Appendix A1). For every learning line the following aspects are defined: description of the content, competence(s) developed, level according to the European Qualifications Framework, learning aims for the levels basic, intermediate, advanced and master, amount of ECTS credits, annotation, aim of the LL, planned LL learning outcomes, examples of a role / roles, examples of the situation(s), actions with criteria for assessment, results with criteria for assessment, suggested modules with ECTS, supporting courses, and references

In Appendix A1 the blocks of competences (learning lines) an presented with in charts that define all the aspects mentioned above.

4. Output 2 – A2 Developing Descriptions of Modules and Contents

The modules are based on the subject specific competences. Each module is linked to one or more blocks of competences (learning lines) . In the first phase of the programme this is mostly on learning line with one subject specific competence. Later on modules get more complex and are related to several blocks of competences (learning lines) and subject specific competences. For the modules a Training Subject Module Card (TSM-card) is developed. The type of information that will be provided is shown in the scheme below.

Aspect		***Explanation***				
1	**Module title**	*The title that reflects the main contents of the module (e.g. the process, the type of projects, the focus). E.g. Landscape planning studio in cultural landscapes.*				
2	**Competence(s) developed**	*A short overview of the subject-specific competences and the related generic competences: instrumental (methodic and technologies),social and personal, systematic.*				
3	**Language of instruction**	*Either in English another language*				
4	**TSM code**	*A code that is unique for each module. For instance EU-LAND21-M001.*				
5	**European Qualifications Framework level**	*6 First cycle – Bachelor and/or 7. Second cycle*				
6	**Levels**	*A short explanation for the level in which students acquire each competence (example below)*	*1*	*2*	*3*	*2nd cycle*
		Competence A	*X*			
		Competence B		*X*		
		Competence C... etc			*X*	*X*
7	**ECTS credits**	*The amount of ECTS that can be are needed to obtain the competences of this module.*				
8	**TSM Annotation**	*Description of the content of the module*				
9	**Aim of the TSM**	*Description of the aim*				
10	**Planned TSM learning outcomes**	*A description of the learning outcomes of the module in the form of the acquired competence.* *Statements of what a learner is expected to know, understand and/or be able to demonstrate after completion of a process of learning. Learning outcomes are distinct from the aims of learning, in that they are concerned with the achievements of the learner rather than the overall intentions of the teacher. Learning outcomes must be accompanied by appropriate ASSESSMENT CRITERIA which can be used to judge that the expected learning outcomes have been achieved. Learning outcomes, together with assessment criteria, specify the minimum requirements for the award of CREDIT, while marking is based on attainment above or below the minimum requirements for the award of credit. Credit accumulation and transfer is facilitated if clear learning outcomes are available to indicate with precision the achievements for which the credit will be awarded* *A description of the learning*				
11	**Context: example(s) of the role(s)**	*An example of the role that the landscape architect (student) has to perform in relation to the competence*				

Aspect		***Explanation***
12	**Context: example of the situation**	*An example of a situation in academic or professional practice in which the landscape architect (student) has to carry out the activities and produce the results.*
13	**Actions**	*A list of activities for producing the result mainly focusing on the steps that should be undertaken and the way they should be carried out.*
14	**Criteria for actions**	*Criteria for the process of how the student should work on the results. These may be used for assessing the process.*
15	**Results**	*The results of completing the tasks that are related to the competence*
16	**Criteria for results**	*A set of criteria in order to assess the quality of the result.*
17	**Teaching modes**	*An overview of which teaching modes are productive for acquring the competences, based on the overview in section 2.4. For each mode there is an indication of the % of the time that is allocated.*
18	**Assessment mode**	*An indication of the way to assess the competence*
19	**Relation to other modules**	*A diagram that shows which module should be completed before and which module follows the current one*
20	**References**	*Main literature and additional references, if possible related to the three levels (basic, intermediate, advanced).*

Later in 2019 a detailed overview of modules will be presented.

5. Generic competences

Generic competences were divided by the 'Tuning Project' into three categories:

a. instrumental competences, i.e. capacity for analysis and synthesis;

b. interpersonal competences, i.e. critical and self-critical abilities and teamwork;

c. systemic competences, i.e. capacity for applying knowledge into practice.

Results of the ranking of generic competences suggested through the Tuning Project are listed in Scheme 2 and shows with which core competences they can best be taught and learned (by an X in the cell) or should be assessed as well (A in the cell).

	Subject-specific competences												
Generic competences	**G1**	**A1**	**B1**	**B2**	**B3**	**C1**	**C2**	**C3**	**C4**	**D1**	**D2**	**E1**	**F1**
Instrumental competences													
INS.1. Capacity of analysis and synthesis	X	**A**	**A**	**A**	**A**	X	X	X	X	X	X	**A**	**A**
INS.2. Capacity for organisation and planning			**A**	**A**	**A**	X	X	X	X				X
INS.3. Ability to manage public participation			**A**	**A**	**A**	**A**			**A**				
INS.5. Grounding in basic knowledge of the profession: Spatial (3D) thinking; Ability to take the dimension of time into account		X	**A**	**A**	**A**	X	X	X	X	A	A	X	A
INS.6. Visual, oral and written communication	X	X	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**		X
INS.7. Knowledge of a second language		X	X	X	X							X	
INS.8. Elementary computing skills	X	X	X	X	X	X			X	X	X	**A**	X
INS.9. Information management skills	X	X	X	X	X	X	X	X		X	X	**A**	X
INS.10. Problem solving; Ability in negotiating, moderation and conflict management		**A**	**A**	**A**	**A**	**A**			X				X
INS.11. Decision making		**A**	**A**	**A**	**A**	X			X	X	X		**A**
INS.12. Ability to understand complex and dynamic systems		X	**A**	**A**	**A**	X	**A**	X	**A**	X	X	X	X
INS.13 Dealing with complexity and ability to think and act in an integrated and holistic way		**A**	**A**	**A**	**A**	X			**A**				**A**
Interpersonal competences													
INT.1. Critical and self-critical abilities / Reflective practice and the ability to learn from failures	X	**A**	**A**	**A**	**A**								
INT.2. Ability to accept criticism and to take it into account		**A**	**A**	**A**	**A**								**A**
INT.3 Teamwork			**A**	**A**	**A**								**A**
INT.4. Interpersonal skills			**A**	**A**	**A**								X
INT.5. Ability to work in an interdisciplinary team		X	**A**	**A**	**A**	X	X	X	**A**				
INT.6. Ability to communicate with experts in other fields		X	**A**	**A**	**A**	X	X	X	**A**	X	X	X	**A**
INT.7. Appreciation of natural diversity and multiculturality / Understanding the cultural environment			X	X	X	**A**	**A**	**A**			X		X
INT.8 Ability to work in an international context		X	X	X	X								X
INT.9 Ethical commitment		**A**	**A**	**A**	**A**	**A**						X	**A**
Systemic competences													
SYS.1. Capacity for applying knowledge in practice			X							X	X	X	X
SYS.2. Research skills	X	**A**	X	X	X					X	X		
SYS.3. Capacity to learn	X	X	X	X	X	X	X	X	X	X	X	X	X
SYS.4. Capacity to adapt in new situation			X	X	X								X
SYS.5. Capacity to generate new ideas		**A**	**A**	**A**	**A**					X	X	X	**A**
SYS.6. Leadership			**A**	**A**	**A**								**A**
SYS.7. Understanding of cultures and customs of other countries			**A**	**A**	**A**								
SYS.8. Ability to work autonomously		**A**	**A**	**A**	**A**					X	X		**A**
SYS.9. Project design and management			**A**	**A**	**A**								**A**
SYS.10. Initiative and entrepreneurial spirit			**X**	**X**	**A**				X				**A**
SYS.11. Concern for quality		**A**	**A**	**A**	**A**					X	X		
SYS.12. Will to succeed			**A**	**A**	**A**				X				
SYS.13 Capacity of argumentation, abstraction, project management, to set priorities			**A**	**A**	**A**							X	X
Key: **A**= assessment of the competence; X = learners actively work on acquiring the competence													

Scheme 2. Assessment and development of generic competences in learning lines

6. Planning course units into programmes

For the design of a landscape architecture programme first a concept of the structure is developed. Important choices are whether the programme is the same during all the years or whether a specialisation is offered, for instance a choice between landscape design and landscape planning after the first two years or a possibility to make specific combinations of landscape planning, design, construction and management. An example for this can be the 3-years bachelor programme in Kassel where students opt for planning or design after the first year.

Figure 7. Example of the structure of the bachelor programme in Kassel (Germany).

The programme starts in the first year with an integral studio that includes various aspects of landscape architecture. The core of the second semester is a studio on site design in combination with landscape construction. In year two students choose between planning and design and the content of their studios depend on that. The third year starts with practical work and the students proves his or her skills by a final project and a bachelor thesis.

This shows that the basis of a landscape architecture programme is formed by a number of studios that relate to the core competences. A possible concept for the EU LAND 21 programme is shown in Figure 8.

Figure 8. Concept of the possible structure of the EU LAND 21 bachelor programme

Every semester students learn by a studio project that is related to the various objects of landscape architecture. The programme starts with a integrated project where analysis, planning, design and management are integrated. The aim of this studio is to let them experience the different aspects of landscape architecture. The studio is supported by introductions and parallel to the studio modules on core competences – e.g. spatial design and planting design. In the following semesters the studios concern projects on various levels of scale with a different context: site design (garden, a small park or square), rural or cultural landscapes, urban open space, green infrastructure, infrastructure projects. Some studio focus more on the planning aspect, some more on the design aspect and others might include a larger portion of management or construction. Integrated with these studios are the courses that are most fit to the character of the project: e.g. for computer skills Autocad is related to landscape construction, GIS is related to landscape planning. Also the content of the modules that run parallel to the studios is chosen to enhance the learning effect of that takes place in the studio.

In the EULAND 21 project, we offer the possibility that programmes are composed of a set of courses, modules and blocks of competences (learning lines) . In this way a school can make use of these building blocks to develop a new or to update an established programme.

The (re)design of a programme may consist of the following steps:

1. Define the profile and focus of the programme (planning or design, scale, type of projects, possibilities for specialisation);
2. Choose whether students can study different routes, specialisations;
3. Define the subject and main learning outcomes of the studios in every term or semester;
4. Define the importance (expressed in amount of ECTS) of the various core competences (Figure 4) and blocks of competences (learning lines) ;
5. Select modules and course units that logically link to the studios or a planned in parallel to it.
6. Define in which modules / courses students acquire their generic competences and where these are assessed.

7. Assessment

Programme assessment is both formative and summative, and takes place in a variety of formats, including examinations (written essays, oral examination) and peer assessment. Student progress is also monitored on the basis of continuous assessment. While the form of assessment may vary, it is linked to clearly defined goals and anticipated learning outcomes in the TSM-formats. The assessment takes place on the level of a module, integrating the results of course elements.

The assessment strategy of landscape architecture programme is based on the following basic principles and guidelines:

a. The assessments of the project simulations (studios / projects) also involve input and feedback from the professional practice, representatives of interest groups or commissioners. Not only are these particularly valuable, they are also fully compatible with the assurance of academic standards.
b. Each element of programme assessment is predicated on 'fitness for purpose'. Assessment supports the teaching aims and objectives of the various components of the programme, such that each learning objective and specified outcome is matched with an appropriate means of assessment, whether for knowledge, understanding or skill. Assessors use forms that make the corresponding competences transparent, and these our handed over to the students in the beginning of each module.
c. Substantive knowledge and understanding is assessed through essays and oral examination;
d. Design projects are assessed on the basis of the project plans, project documents, multimedia presentations, oral presentations, students logbooks and oral examination;
e. Management and communication skills are assessed through peer assessment and during the working-while-learning period.
f. The generic competences are assessed according to the overall matrix. Students are asked to reflect on these in process or logbooks, which are part of the assessment.

The assessment methods ensure that lecturers can monitor the progress of individual student at each stage of the programme.

Feedback

Assessment informs each student of his or her individual level of attainment against the learning objectives set for each component of the study programme:

- After the conclusion of a landscape design, planning or management project, the commissioner and advisor from the professional practice or governmental organisation give the students feedback on their result and performance, setting it against a professional benchmark;
- Per class, lecturers discuss the results of essays;
- Students' performance and progress as landscape architects is discussed, both individually and within the project groups.

Transparancy

The criteria whereby each individual assessment is to be judged are clear to assessors and students alike. These criteria are appropriate to the learning outcomes to be assessed and to the range of attainments expected for the level of work.

Where outside professional assessors are involved (for example, with regard to project simulations and presentations of the results of the projects), the assessment procedures are discussed thoroughly with these assessors, to ensure that they fulfil the programme criteria and satisfy general academic standards. The final responsibility however for the assessment lies with the examiners of the universities.

The assessment methods and criteria enable each student to fully recognise the levels of knowledge and skills they must attain in order to meet the requirements of the programme. The description of each course unit should contain the assessment forms (including the assessment criteria and their relative weight).

Assessment modes

In each TSM format the main modes of assessment are defined. A short description is given in the table below.

Table 1. Assessment modes

Code	Assessment mode	Description
EXW	Written Examination	An external (i.e. assessed by an exam board) or internal (i.e. assessed by a teacher) written assessment taken at the end of a course unit or later in the academic year.
EXO	Oral Examination	An external (i.e. assessed by an exam board) or internal (i.e. assessed by a teacher) oral assessment taken at the end of a module (or course unit) or later in the academic year. The oral examination is performed by at least two assessors and the student receives afterwards a short assessment scheme with the results. One assessors communicates the outcome of the oral examination directly after the session.
TES	Test	Written tests taken within the normal teaching period as part of an annual or the final assessment.
PPR	Poster Presentation	A written or oral presentation of some work on a display which can be read by a number of people. Used by individuals or groups to demonstrate work undertaken individually or collectively. Poster presentations are enjoyed by invited professionals.
REP	Report	Documents which present detailed interpretation and content, and critical analysis of the results of an experiment, investigation and/or project on a particular topic or area. A report usually contains different sections, such as introduction, methods, results, discussion and conclusion.
PDI	Project Diary / Process Report	Container for writing that is recorded over a period of time. The writing may accompany a programme of learning, work, fieldwork or placement experience or a research project. It may be highly structured or 'free'. technical and design aspects (detail drawings,) can improve the written content. It can also comprise the students reflection on his or her own progress in acquiring (generic) competences).
ESS	Essay	Essay can be used as an assessment method to determine student understanding of course content and/or issues as well as students' opinions and perceptions.
SKB	Sketch Book	A document of sketches (visual thinking) about a project, field study etc. This assessment mode normally taken within the normal teaching period as part of an annual or the final assessment.

Glossary for landscape education

In this report the following terms are used. Most terms are derived from the ECLAS Guidance report (ECLAS 2010). The terms that are added or have a different sense are presented in italics.

Term	Explanation
ACCREDITION	Accreditation is a certification of the academic quality of an institution of higher learning. Some countries have independent/private organizations that oversee the educational accreditation process, while other countries accredit through a government agency. Some countries require accreditation and others consider it voluntary. The accreditation process results in formal recognition of a degree programme or institute of higher education by a (non) governmental organisation with formal consequences like the right to deliver a degree, funding by the government of the programme or the institute or certain rights of its graduates.
ASSESSMENT	The total range of written, oral and practical tests, as well as projects and portfolios, used to decide on the student's progress in the COURSE UNIT OR MODULE. These measures may be mainly used by the students to assess their own progress (formative assessment) or by the University to judge whether the course unit or module has been completed satisfactorily against the LEARNING OUTCOMES of the unit or module (summative assessment)
ASSESSMENT CRITERIA	Descriptions of what the learner is expected to do, in order to demonstrate that a LEARNING OUTCOME has been achieved.
CASE STUDY	A case study is a well-documented and systematic examination of the process, decision-making and outcomes of a project, which is undertaken for the purpose of informing future practice, policy, theory, and/or education.
CLASS	The group of students in the same year of a given PROGRAMME OF STUDY.
COMPETENCES	In the Tuning Project competences represent a dynamic combination of attributes - with respect to knowledge and its application, to attitudes and responsibilities - that describe the LEARNING OUTCOMES of an educational programme, or how learners are able to perform at the end of an educational process. In particular, the Project focuses on subject-area related competences (specific to a field of study) and generic competences (common to any degree course). The European Qualifications Framework describes competence in terms of responsibility and autonomy. It refers to the proven ability to use knowledge, skills and personal, social and/ or methodological abilities, in work or study situations and in professional and personal development.
COMPREHENSIVE EXAM	ASSESSMENT of the overall LEARNING OUTCOMES achieved over the past/previous years.
CONTINUOUS ASSESSMENT	Tests taken within the normal teaching period as part of an annual or the final ASSESSMENT.
CREDIT	The 'currency' used to measure student WORKLOAD in terms of the NOTIONAL LEARNING TIME required to achieve specified LEARNING OUTCOMES.
CREDIT ACCUMULATION	In a credit accumulation system LEARNING OUTCOMES totalling a specified number of CREDITS must be achieved in order to successfully complete a semester, academic year or a full PROGRAMME OF STUDY, according to the requirements of the programme. Credits are awarded and accumulated if the achievement of the required learning outcomes is proved by ASSESSMENT.
CREDIT FRAMEWORK	A system that facilitates the measurement and comparison of LEARNING OUTCOMES achieved in the context of different qualifications, PROGRAMMES OF STUDY and learning environments.
CREDIT LEVEL	An indicator of the relative demand of learning and of learner autonomy. It can be based on the year of study and/or on course content (e.g., Basic/Advanced/Specialised).
CYCLE	A course of study leading to an academic DEGREE. One of the objectives indicated in the Bologna Declaration is the "adoption of a system based on two main cycles, undergraduate and graduate." DOCTORAL STUDIES are generally referred to as the third cycle.
DEGREE	Qualification awarded by a higher education institution after successful completion of a prescribed PROGRAMME OF STUDY. In a CREDIT ACCUMULATION system the programme is completed through the accumulation of a specified number of credits awarded for the achievement of a specific set of LEARNING OUTCOMES.

Term	Explanation
DESIGN WORKSHOP	Short intensive design project carried out over a limited timescale, usually one or two days without or with limited supervision.
DIPLOMA SUPPLEMENT	The Diploma Supplement is an annex to the original qualification designed to provide a description of the nature, level, context, content and status of the studies that were pursued and successfully completed by the holder of the qualification. It is based on the model developed by the European Commission, Council of Europe and UNESCO/CEPES. It improves the international transparency and the academic/professional recognition of qualifications
DISTANCE LEARNING	Form of course unit delivery where students are not bound to a specific time or place in order to participate in the course, but instead are required to work through prepared material and exercises in their own time and with a minimal of supervision.
ECTS	European Credit Transfer System - A system for increasing the transparency of educational systems and facilitating the mobility of students across Europe through credit transfer. It is based on the general assumption that the global workload of an academic year of study is equal to 60 credits. The 60 credits are then allocated to course units to describe the proportion of the student workload required to achieve the related LEARNING OUTCOMES. Credit transfer is guaranteed by explicit agreements among the home institution, the host institution and the mobile student.
EQF	European Qualifications Framework for Life Long Learning, with the descriptors of 8 levels of competences: knowldge, skills and Responsibility and autonomy. See: https://ec.europa.eu/ploteus/content/descriptors-page
ELECTIVE COURSE	A course to be chosen from a predetermined list or another course that can be taken up into a student‘s programme after approval of the examination board.
EXAM	Normally formal written and/or oral test taken at the end of a course unit or later in the academic year. Other assessment methods are also in use. Tests within the course unit are classed as CONTINUOUS ASSESSMENT.
EXCURSION	Course unit consisting of a field visit or visits, usually lasting for a number of days. Preparatory research and/ or the writing of a report is usually also involved. [Synonym: "Field Trip"]
FIRST DEGREE	First HIGHER EDUCATION qualification taken by the student. It is awarded after the successful completion of first CYCLE studies which, according to the Bologna Declaration, should normally last a minimum of three years or 180 ECTS credits.
GEOGRAPHIC INFORMATION SYSTEMS	Geographic Information Systems (GIS) are computer systems for capturing, storing, querying, analysing, and displaying geodata. GIS developed from the integration of four different computer applications: image processing (raster-based), computer aided design (CAD) (vector-based), mapping/cartography and database management (Kraak and Ormeling, 2010). Introductory works to GIS include Longley and Batty (2003), Chang (2010) and Longley et al. (2011). Useful accounts on geo-visualisation are Dodge et al. (2008) and Kraak and Ormeling (2010).
GRADE	A final evaluation based on the overall performance in the PROGRAMME OF STUDY
GROUP PROJECT	A piece of work given to a group of students which needs co-operative work for completion. This work may be assessed either individually or as a group. A final assessment should however always consist of an individual assessment.
HIGHER EDUCATION	PROGRAMMES OF STUDY which may be entered by students holding either a qualified school leaving certificate of an upper secondary school after a minimum of twelve years of schooling or other relevant professional qualifications. Providers may be universities, universities of professional studies, higher education institutions or colleges.
ICT TEACHING	Teaching/studying/learning making use of information and communication technology. It usually takes place in e-learning environments.
INDEPENDENT PROJECT	A piece of work given to a single student or a group of students for completion. This work will be assessed either individually or as a group.
INTENSIVE COURSE	A short full time course of one to four weeks concentrating on a particular topic. It may take place at another institution or in a summer school.
INTERNSHIP	Extended period of supervised residency on the part of the student in a design or planning office or in a nursery or contracting firm to gain practical work experience. Frequently accompanied by the keeping of a diary and/or the preparation of a report. [Synonym: "Office or Practical Experience"]

Term	Explanation
LEARNING LINE	*In the EULAND21 programme this is based on learning a subject specific competence and forms a thread in various course units. A standard description of a learning line consists of its competences, the level, amount of credits, aim, planned learning outcomes, roles and situations, learning activities, results, related modules and courses, and references.*
LEARNING OUTCOMES	Statements of what a learner is expected to know, understand and/or be able to demonstrate after completion of a process of learning. Learning outcomes are distinct from the aims of learning, in that they are concerned with the achievements of the learner rather than the overall intentions of the teacher. Learning outcomes must be accompanied by appropriate ASSESSMENT CRITERIA which can be used to judge that the expected learning outcomes have been achieved. Learning outcomes, together with assessment criteria, specify the minimum requirements for the award of CREDIT, while marking is based on attainment above or below the minimum requirements for the award of credit. Credit accumulation and transfer is facilitated if clear learning outcomes are available to indicate with precision the achievements for which the credit will be awarded.
LECTURE	Provision of content by presentation and explanation (possibly including demonstration) by a lecturer.
LECTURE COURSE	Form of teaching in which information is imparted, usually verbally and visually, to a large group of students with a minimum of interaction.
MARK	Any numerical or qualitative scale used to describe the results of ASSESSMENT in an individual COURSE UNIT or MODULE.
MODULE	*A self-contained, formally structured learning experience with a coherent and explicit set of LEARNING OUTCOMES and ASSESSMENT CRITERIA which students follow within the framework of a semester or a teaching period. See section 4 in this report.*
NOTIONAL LEARNING TIME	The average number of hours a student will take to achieve specified LEARNING OUTCOMES and gain CREDITS.
ORAL PRESENTATION	A verbal presentation to a lecturer and possibly other students by an individual student. It may be on a topic researched by the student in the published literature or a summary of project work undertaken.
PRACTICAL WORK	Teaching form involving practical exercise(s) or undertaken by students, either individually or in groups, involving direct supervision of a group of students in the performance of a pre-defined task or tasks of the use of specific techniques. [Synonym: "Laboratory Exercise"]
PRIVATE STUDY	Teaching mode in which students are given a programme of reading and/or exercises to work through without any specific input from the teacher.
PROGRAMME OF STUDY	An approved set of COURSE UNITS and MODULES recognised for the award of a specific DEGREE. A programme of study can also be defined through the set of LEARNING OUTCOMES to be achieved for the award of a specified number of CREDITS.
QUALIFICATION	A formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards
RECOGNITION (PROFESSIONAL)	The way a profession is regulated on a European or a national level according to a set of standards of the recognizing organisation. The effect of this recognition varies, depending on the legal authorization of the recognizing body. On a national level it may result in the right to use the title of landscape architect, the right to work as a landscape architect or to work a specified type of commissions or to be allowed to formally “sign” a plan.
SECOND DEGREE	Second HIGHER EDUCATION QUALIFICATION taken by a student after the FIRST DEGREE. It is awarded after the successful completion of second CYCLE studies and may involve some research work.
SEMINAR	Small group teaching mode, in which short papers on subject areas defined by the teacher are prepared by individual students or small groups and presented to the whole group.
SKILLS AND COMPETENCES	The skills and COMPETENCES developed as an outcome of the learning process can be divided into ‘subject-area related’ and ‘generic’.
STUDIO	Form of teaching in which students are involved in the development of design or planning proposals working to a given brief or one which they develop themselves, either individually or in small groups. Supervision, involving consultations and intermediate presentations, takes place on a regular but flexible basis by one or more staff. [Synonym:"Project Work"]

Term	Explanation
STUDY TRIP	Field visit or visits, usually lasting for a number of days. Preparatory research and/ or the writing of a report is usually also involved. [Synonym: "Field Trip"]
THESIS	A formally presented written report, based on independent research work, which is required for the award of a degree (generally SECOND DEGREE or doctorate).
TUNING	Developing agreement and harmony by combining single sounds into a common "tune" or pattern of sounds. In the case of the Tuning project, it relates to higher education structures in Europe and recognises the diversity of traditions as a positive factor in the creation of a dynamic common HE area.
TUTORIAL	Form of teaching in which a small group of students, possibly only one, are taught on a one to one basis (often used in relation with individual dissertations). A period of instruction given by a tutor aimed at revising and discussing materials and topics presented at LECTURES.
UNDERGRADUATE STUDIES	A course of study leading to a FIRST DEGREE
WORKLOAD	All learning activities required for the achievement of the LEARNING OUTCOMES (i.e., lectures, practical work, information retrieval, private study, etc.).
WORKSHOP	A supervised session where students work on individual tasks and receive assistance and direction when needed.

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References Blocks of Competences – Learning lines

This list of references is a compilation of all references that are taken up in the learning lines in Appendix A1 of this report. For each reference one can find for which learning line a reference is relevant. The first part of this list contains reference books and articles; the second part shows the relevant European and International directives, regulations and strategies.

The codes in the header of this table of the subject specific competences can be found in section 2.3 figure 4.

Entry	**G 1**	**A 1**	**B 1**	**B 2**	**B 3**	**C 1**	**C 2**	**C 3**	**C 4**	**D 1**	**D 2**	**E 1**	**F 1**
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Alexander, R. , R. Myer, Essential Garden Design Workbook								C 3					
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Brink, A. van den, et al. (eds.) 2016. Research in Landscape Architecture: methods and methodology. London: Routledge		A 1											
Brookes, John. 2001. Garden Design								C 3					
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Carmona, M, C. de Magalhães, L. Hammond (eds). 2008.						C							

Entry	**G 1**	**A 1**	**B 1**	**B 2**	**B 3**	**C 1**	**C 2**	**C 3**	**C 4**	**D 1**	**D 2**	**E 1**	**F 1**
Public Space, The Management Dimension, Routledge						1							
Clifford, Derek. 1962. A history of garden design.Faber and Faber, London; German edition: Geschichte der Gartenkunst, transl. by Hubert Klemke(ed) and extended by Heinz Biehn (1966): Prestel Verlag, München								C 3					
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Creswell, J. W. 2009.. Research design: Qualitative, quantitative, and mixed method approaches. Los Angeles: Sage		A 1											
Cross, Nigel: Designerly ways of knowing, Springer, 2007		A 1	B 1										
Cureton, P. 2017. Strategies for Landscape Representation, Digital and Analogue Techniques. Routledge												E 1	
Deming, E and S. Swaffield (2012) Landscape Architecture Research, John Wiley & Sons, 2011 ISBN: 978-0-470-56417-2 (p 205-222)		A 1											
Dodge, M., McDerby, M., and Turner, M. (eds). 2008. Geographic Visualization. Concepts, Tools and Applications.London, John Wiley & Sons												E 1	
Dunnet, N. & J. Hitchmough (Eds). 2014. The dynamic landscape. Design, Ecology and Management of Naturalistic Urban Planting. Routledge, London & New York.											D 2		
European Environment Agency, 2010. Ten messages for 2010, Cultural landscapes and biodiversity heritage. ISBN 978-92-9213-147-0							C 2						
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Fortlage, C.A. and E.T. Phillips. 2001. Landscape Construction, Volume 1: Walls, Fences and Railings. Routledge.									C 4	D 1			
Fortlage, C.A. and E.T. Phillips. 2001. Landscape Construction, Volume 2: Roads, Paving and Drainage. Routledge.									C 4	D 1			
Foster, K. (2010) Becoming a Landscape Architect: A Guide to Careers in Design, Wiley, London, ISBN: 0470338458													F 1
Francis, M. 2001. A Case Study Method for Landscape Architecture, Landscape Journal, vol 20,						C 1							

Entry	**G 1**	**A 1**	**B 1**	**B 2**	**B 3**	**C 1**	**C 2**	**C 3**	**C 4**	**D 1**	**D 2**	**E 1**	**F 1**
CELA/University of Minnesota, pp 15-29													
Gehl, Jan. 2010. Cities for People. Island Press, Washington. ISBN 13-978-1-59726-573-7.			B 1			C 1							
Glasson, J. & R. Therivel. 2012. Introduction To Environmental Impact Assessment, 4th Edition, Routledge									C 4				
Goldschmidt, G. 1991. The dialectics of sketching Creativity Research Journal 4 (1991) p 123-143						C 1							
Goudie A. 2001. The Nature of the Environment. Blackwell	O												
Grunewald, Karsten, Bastian, Olaf (Eds.) 2015. Ecosystem Services – Concept, Methods and Case Studies. Springer	O												
Harney, M (Ed), 2014. Gardens & Landscapes in Historic Building Conservation, Wiley & Sons.							C 2						
Heywood, Cornelius and Carver. 2011. An introduction to Geographical Information systems, 4th edition, Pearsons Education, ISBN13 978-0273722595												E 1	
Hensey, P. 2016. Construction Detailing for Landscape and Garden Design. Surfaces, steps and margins. Routledge.									C 4	D 1			
Hensley, D. 2010. Professional landscape management, University of Arkansas					B 3								
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Hernik J., Gawroński K., Dixon-Gough R. 2013. Social and economic conflicts between cultural landscapes and rural communities in the English and Polish systems. Land Use Policy 30 (2013) 800- 813							C 2						
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Hunt, John Dixon. 1992. Gardens and the Picturesque.								C					

Entry	**G 1**	**A 1**	**B 1**	**B 2**	**B 3**	**C 1**	**C 2**	**C 3**	**C 4**	**D 1**	**D 2**	**E 1**	**F 1**
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Jacobs, 2001. Great streets. Cambridge, MIT Press, 2001, sixth pr.						C 1							
Johnson, B & Kristina Hill (eds) 2001. Ecology and Design: Frameworks For Learning. Island Press	O									D 1			
Kingsbury, N. 2010. Piet Oudolf Landscapes in Landscapes. The Monacelli Press.											D 2		
Kirkwood, Niall: The Art of Landscape Detail: Fundamentals, Practices and Case Studies, Wiley 1999													
Kostof, S. The city shaped — Urban patterns and meanings through history, London, Thames & Hudson, 1999						C 1							
Kraak, M.J., and Ormeling, F. (2010) Cartography. Visualization of Spatial Data. London, Prentice Hall.												E 1	
Lavoie, C. 2005: Sketching the landscape: exploring a sense of place, Landscape Journal 24(2005) - 1 p 13-31						C 1							
Liu, J. & W.W. Taylor (eds) 2002) Integrating Landscape Ecology into Natural Resource Management, Cambridge University Press					B 3								
Loidl, H-W, S. Bernard, 2003, Opening Spaces			B 1										
McHarg, Ian. 1971. Design with Nature. American Museum of Natural History.			B 1		B 3		C 2						
Miller, W. R. 2012. Introducing Geodesign: The Concept. Esri, GeoDesign Services.												E 1	
Moe, Dagfinn, Dickson, James & Jorgensen, Per (Eds.). 1994. Garden History: Garden Plants, Species, Forms and Varieties from Pompeii to 1800. Pact Belgium, Rixensart								C 3					
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Murphy, M.D. 2005. Landscape architecture theory – an evolving body of thought. Waveland Press, Long Grove, Illinois		A 1											
Murphy, M.D. 2016. Landscape architecture theory: an ecological approach. Island Press.		A 1											
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Entry	**G 1**	**A 1**	**B 1**	**B 2**	**B 3**	**C 1**	**C 2**	**C 3**	**C 4**	**D 1**	**D 2**	**E 1**	**F 1**
ISSN 1875-0192 (print), ISSN 1879-8217 (online)													
Oudolf, P. & N. Kingsbury. 2013. Planting: A New Perspective. Timber Press, London – Portland.											D 2		
P. Hobhouse, The story of gardening								C 3					
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Robinson, N. 2011. Planting Design Handbook, 2nd Edition. Ashgate Publishing.											D 2		
Roe, Maggie & Ken Taylor (eds.). 2014. New Cultural Landscapes, Routledge.							C 2						
Sadler, B. & J. Dusik (eds). 2016. European and International Experiences of Strategic Environmental Assessment; Recent progress and future prospects. Routledge									C 4				
Sadler. B. 2011. Handbook of Strategic Environmental Assessment. Routledge									C 4				
Schaller, J. and C. Mattos. ArcGIS ModelBuilder Applications for Landscape Development Planning in the Region of Munich, Bavaria												E 1	
Shepheard, Peter. 1954. Modern Gardens, Architectural Press London						C 1							
Smithson, P., Addison, K., Atkinson, K. 2008. Fundamentals of the Physical Environment. Routledge	O												
Smithson, P., Addison, K., Atkinson, K. 2008. Fundamentals of the Physical Environment. Routledge							C 2						
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Entry	**G 1**	**A 1**	**B 1**	**B 2**	**B 3**	**C 1**	**C 2**	**C 3**	**C 4**	**D 1**	**D 2**	**E 1**	**F 1**
Tattom J. (2006). Urban Highways and the Reluctant Public Realm. In: The Landscape Urbanism Reader. Princeton Architectural Press. P. 179-196.									C 4				
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Treib, Marc. 1993. Modern Landscape Architecture: A critical Review. Cambridge – London						C 1							
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Turner, T. 2011. European gardens — History, philosophy and design, London, Routledge						C 1							
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Vassilopoulos, A. a.o (eds). 2008. Geoinformation Technologies for Geo-Cultural Landscapes: European Perspectives. CRC Press.												E 1	
Von Seggern, H.; Werner J.; Grosse-Bächle L.: Creating Knowledge. Innovation Strategies for Designing Urban Landscapes, Studio Urbane Landschaften, Jovis Verlag, 2008		A 1	B 1			C 1							
Vroom, M.J. (ed) 1992 . Buitenruimten — ontwerpen van Nederlandse tuin– en landschapsarchitecten in de periode na 1945 — Outdoor space — Environments designed by Dutch Landscape Architects since 1945						C 1							
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Yudelson Jerry. 2016. Reinventing Green Building. New Society Publishers. Gabriola Island BC Canada. ISBN 978-0-86573-855-9.			B 1		B 3								
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Zimmermann, Astrid (ed.). 2008. Constructing Landscape, Birkhäuser Verlag A.G., Berlijn. ISBN 9783034607209, second edition					B 3				C 4	D 1			

European and international strategies, directives, guidelines

Entry	**G 1**	**A 1**	**B 1**	**B 2**	**B 3**	**C 1**	**C 2**	**C 3**	**C 4**	**D 1**	**D 2**	**E 1**	**F 1**
Convention of Biological Diversity (Rio, 1992), Convention on the Conservation of Migratory Species of Wild Animals, CMS (Bonn, 1979), \\\Convention of the Conversation of European Wildlife and Nature (Bern 1979));			B 1		B 3								
Directives focusing on utilisation and handling of risks and dangers: Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks; Waste framework directive (2008/98/EC); Directive 2002/49/EC of the European Parliament and of the Council of 25 June 2002 relating to the assessment and management of environmental noise.			B 1		B 3								
European categories of protected areas and environmental networks (NATURA 2000, other)			B 1		B 3								
The European Union's Biodiversity Action Plan, Halting the loss of biodiversity by 2010 – and beyond: ISBN 978-92-79-08071-5, European Communities, 2008: http://ec.europa.eu/environment/nature/info/pubs/docs/brochures/bio_brochure_en.pdf	G 1			B 2									
European planning instruments and tools (e.g. environmental impact assessment EIA, strategic impact analysis SIA) and specific national instruments;			B 1		B 3								
European strategies/programmes to ensure and to foster abiotic resources like water, climate, soil (European Soil Charta (1972) / Convention on Wetlands of International Importance especially as Waterfowl Habitat. Ramsar (1971) European Climate Change Programme (ECCP));			B 1		B 3								
European strategies/programmes to ensure and to foster landscape and cultural heritage (e.g. European landscape convention (Florence, 2000), The Convention on the Protection of the Archaeological heritage of Europe, usually referred to as the Valletta Treaty or Malta Convention (1992));			B 1		B 3								
European strategies/programmes to ensure nature protection via integrative strategies (The Sixth Environment Action Programme of the European Community (2001-2012), Alpine convention (96/191/EG), The European Charter for Sustainable Tourism in Protected Areas);			B 1		B 3								
Instrumental directives focusing on the question how to implement environmental standards in the EU-states: Directive 2001/42/EC of the European			B 1		B 3								

Entry	**G 1**	**A 1**	**B 1**	**B 2**	**B 3**	**C 1**	**C 2**	**C 3**	**C 4**	**D 1**	**D 2**	**E 1**	**F 1**
Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment (EIA), European SEA Directive 2001/42/EC);													
International and European approaches for spatial development and land use management like mono-/multifunctional landscapes;			B 1		B 3								
Knowledge of landscape related strategies to implement a sustainable spatial development (e.g. European spatial development perspective (ESDP) and Territorial agenda of European Union (Leipzig, 2007));			B 1		B 3								
Life Cycle Assessment LCA and Life Cycle Costing LCC methods and tools for sustainable materials and solutions. EU Public Procurement Directive EC 2014/24/EU, Article 68.			B 1	B 2	B 3								
Policies in Europe concerning landscape and environmental values at present and in future (e.g. European agriculture policies, intensification of agriculture);			B 1		B 3								
Thematic directives focusing on environmental goods: Habitats directive on the conservation of natural habitats and of wild fauna and flora (Council Directive 92/43/EEC (1992); Directive 2009/147/EC of the European Parliament and of the Council on the conservation of wild birds 2009 (SPA)), Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy; Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration; Thematic Strategy for Soil Protection [SEC(2006)620] [SEC(2006)1165]);			B 1		B 3								

Appendix Process Report of External Review EULAND21 Blocks of Competences and Modules

EULAND21 prepared a concept for the programme with starting points, blocks of competences (learning lines) with learning outcomes and a set of modules for landscape architecture programmes in higher education.
External feedback was given on the basis of a presentation and a seminar on the 28th of April 2018 and the documentation that was sent out to representatives of the International Foundation for Landscape Architecture in Europe (IFLA-Europe) and the European Council of Landscape Architecture Schools (ECLAS). ECLAS members could also give individual feedback.

Feedback was received from:

ACRONYM	*Contac person*
IFLA-Seminar	Marina Cervera Alonso de Medina, mcerveraalonsodemedina@gmail.com
IFLA	Ms Emilia Weckman, lecturer / Aalto-University Finland, Vice President (Education), Chair of School Recognition Panel, vpeducation@iflaeurope.eu, IFLA Europe /International Federation of Landscape Architects (IFLA), for IFLA Europe
ECLAS	Prof Ellen Fetzer, Vice-president European Council of Landscape Architecture Schools (ECLAS) Academic coordination and lecturing in landscape architecture programmes at Nürtingen-Geislingen University and Weihenstephan-Triesdorf University of Applied Sciences, ellen.fetzer@hfwu.de, for ECLAS,
INSA	Sabine Bouche-Pillon, Maître de conferences INSA Centre Val de Loire, Campus BLOIS,France, sabine.bouche-pillon@insa-cvl.fr – INSA
Spain	Cristina del Pozo, Bachelor´s Degree in Landscape Architecture, Antiguo Cuartel de Pavía | San Pascual s/n | Aranjuez, Madrid | 2830

An overview of the questions and answers is presented below. In the second column the response by EULAND21 is formulated. The changes are integrated in the final outcomes of the EULAND21 project.

Questions and answers	**Response by EULAND21**
1.1 Framework and concept of the programme and principle of learning lines. These questions relate to chapter 2 of the main report: Trans-European Education for Landscape Architects, Output 02: Peer learning methods on the development of a curriculum mainly focused on the 1st cycle (bachelor).	
IFLA: In the beginning 1.1. the aim of the EU Land project (the whole project) should be explained – for example with a text from the EU project application which tells very clearly and short what this project is about?	This explanation can be found in Output 1 of the project. In addition the short introduction of the project is added as section 1.1. Context: the EULAND21 Project.
Section 2.1 Context:	
2.1.a Is the context of the project clearly explained?	
Please choose **only one** of the following: O 1 - O2 - O3 - O4 - O 5 1= fully agree and 5 = do not agree at all	
IFLA: O2- agree	OK

Questions and answers	**Response by EULAND21**
ECLAS: O1: fully agree	OK
2.1.b If you have any suggestions to improve the clarification, please write these below.	
IFLA: The second paragraph 2. A framework for a first cycle landscape architecture programme should be generally talking about all programs (meaning BA level, Master and PhD).	PhD level is not included in the framework. And indeed, the first part relates both to master and bachelor level. We changed that in paragraph 2.4.
IFLA: if the report focuses only BA level, it should be somewhere later in the report (maybe connected with Vilnius programme?)	The report first starts with Masters and bachelor level, and then focuses on Bachelor-level. We clarified this in the text.
IFLA: The learning lines are concentrated to a 4 year Bachelor programme – they should be flexible structured and also be able to use in a 3+2 structure - not be only to be used in a 4 years programme.	The learning lines can be used in a 3+2, a 4+1, 4+2 or 5 years integrated programme. We will explain this more clearly.
IFLA: Figure 1. Context of the conceptual framework for a landscape architecture programme: There should be a clear relation to Bologna, IFLA Charter and Guidance Documents + ECLAS (to explain the Framework of LA Education documents in Europe)	This explanation is taken up in Output 1 of the EULAND21 project. We made a reference to this document. In paragraph 2.1 we added the IFLA Charter as a foundation.
IFLA: the new slide by Fritz Auweck (6/2018, done after IFLA Europe Edu+PP Munich meeting) collecting all documents would be better figure here ?	The new image is now included as Figure 1.
IFLA: 2.1 mentions: The foundation consists of the ECLAS Guidance report (ECLAS 2010). There should be also referring to IFLA Charter	This is added here.
ECLAS: Whenever you use abbreviations and references to important documents it might be good to add a direct link to the document. The ECLAS guidance report can be downloaded here: https://lnicollab.landscape-portal.org/goto.php?target=cat_103&client_id=main Regarding the Tuning project, the website is still online and might be referred here: http://www.unideusto.org/tuning/	Good suggestion, we include the links.
2.2 Do you have any suggestions to change the starting points for the programme, competences and or modules?	
IFLA: Here (in section 2.2) should be more explanation on what the focus of the project was. Now it goes very quickly to details. A short introductory text would be good.	We added here the general principles.
IFLA: You write "The starting points for a bachelor landscape programme are": It should be mention also Master programs and PhD, 2nd and 3rd cycle. Why talking only about bachelor programmes.? All levels should be included	This is now extended to the master. The PhD programmes have quite a differ approach that calls for further investigation. See paragraph 5.7 of the ECLAS Guidance.
IFLA: Referring to "A first cycle programme consists of 240 ECTS in order to meet the standards of the IFLA Europe recognition." Here reference to the Guidance document (E2_IFLA Guidance Document for Recognition or Accreditation_2008_with_IFLA Europe addenda_2017) + bring up the main issues from there.	The reference is mentioned here. The content of the IFLA Guidance is defined in Output 1 on page 17.

Questions and answers	**Response by EULAND21**
IFLA Referring to b. In each programme the students should learn for at least 40% of their time in studios or integrating project work in order to be able to acquire the core competences in an integral way (see Figure 3). This should be 50% - IFLA Charter (E1_IFLA Charter for Landscape Architectural Education_2017_with_IFLA Europe addenda_2017), pge 4. point 1. ALSO very strong recommendation from IFLA Europe Education committee/ SRP members!	This is now changed to 50%.
IFLA Referring to c. A bachelor programme should contain a course unit that consists of t an internship for acquiring the basic professional competences of at least 15 ECTS and preferably 30 ECTS (see Figure 3). This can be tricky in 180 ECTS programmes – easier in 240 ECTS programmes.	In 3 years programmes this will indeed prove to be difficult. In some cases it might call for allocating time for professional practice in the master programme.
ECLAS: This seems ok and in line with current practice of curriculum design.	OK
IFLA-seminar on starting points related to mobility a. International mobility of the graduates is related to their mobility experience during the studies. Study programmes should have a compulsory requirement for student's and teacher's mobility. b. The innovative model of mobility between the emerging (EU-LAND21) academic networks that are based on the Common Training Framework in LA should be promoted and pilot-tested. c.. To promote collaboration between the academia and the practice, IFLA and ECLAS can develop several joint initiatives as a) platform of offices and mentors for internship, b) a Young Professional Programme, and c) Common Training Framework in LA.	This is addressed by EULand21 by: Ad a. Adding study time for a minor or international exchange semester (starting point e). Ad b. and c. The consortium aims to develop the CTF in collaboration with IFLA Europe. For this a Memorandum of Understanding is signed.
2.3 Competences based on the ECLAS guidance report **Do you have any suggestions to add a competence or to complete the general content of a LA programme that is defined by these blocks of competences?** **In figure 4 on page 9 you can find an overview of the blocks of competences, learning lines.**	
IFLA: The social aspect should be emphasised more	This is part of the LL Urban Open Space and it also added in the form of learning aims in the Learning Lines for Design, Planning and Management.
IFLA: Ecology and natural sciences? Natural and functional aspect of Landscape? See IFLA Charter Areas of Knowledge	This is part of the Learning Line Landscape architecture foundation, background and supporting competences
IFLA: Also reference to "European" EU and EUC policies and environmental regulations and directives (IFLA Eu Teach)	The key references taken from the EU Teach project are included in the learning lines and list of references. The learning lines also make use of the formulation of aims of EU Teach.
ECLAS: I am not sure if the projects should be specified in this way. Because you always miss out some possible project contexts. I was wondering if this should be more	The modules allow learning on the basis of a great variety of projects. The categories Cultural Landscapes, Urban

Questions and answers	Response by EULAND21
generic to allow for any type of project to be represented.	open space, Infrastructure projects may seem a bit restrictive, but the planning and design learning lines can also include brownfield areas, residential areas, water-scapes, recreational areas, foodscapes, etctera. This is mentioned in the learning lines.
2.4 In section 2.4 the didactic approach is explained. Do you have any suggestions to improve the approach? *	
IFLA: no additions	OK
ECLAS: I find the chapter a bit too basic. Please use constructivist and not constructive, these are different terms.	In this section EULAND21 now explains the learning process a bit more. The term is corrected.
2.5 Levels: basic, intermediate, advanced and master. In figure 5 on page 11 the content of the levels is explained, do you agree with the definition of these levels? **O 1 - O2 - O3 - O4 - O 5** **1= fully agree 5= do not agree at all**	
IFLA: agree (O2) ECLAS: agree (O2)	OK OK
Levels: Do you have any suggestion to improve the definition of the levels?	
IFLA: no additions	OK
ECLAS: I think research competences need to be included in all levels and from the very beginning.	Now also in the basic level research is defined.
ECLAS: I have another comment on the teaching modes (page 13). You mention only case study analysis but students might take up other research approaches as well. One suggestion could be to divide this into the three agreed perspectives of 'research of design' (which would be the case study analysis), 'research for design' (for example and ecological or sociological analysis) or 'research by designing' which would ideally happen as part of the planning/design studio.	The various types of research are not really teaching modes, and indeed, a case study analysis may also not fit very well in the overview of Teaching modes. We solved this by mentioning the other forms of research and placed these under the heading of self-study. Lectures on the types of research are part of the module and students can opt in their research task for one of the strategies methods.
2.6 Content of Blocks of Competences - Learning lines **The description of learning lines in Appendix A1 Please note down any themes that you are missing in the learning lines, if you do not miss anything please note down: 'no additions'**	
IFLA: see the general comment above	See responses above.
ECLAS: Short editing comment: on page 35 the abbreviation SUDS should stand for Sustainable Urban Drainage System	Is corrected.
ECLAS: The module description on planning and design: I think the literature list here is a bit arbitrary. I do not think that the Landscape Urbanism reader is correct here, it is currently quite a weird mix of readings for the most important module. I do not have an alternative at hand but I think that this needs to be reworked. This observation is also relevant for some of the other modules. It is not clear according to which criteria the references have been selected. I am not sure if this is so useful at the end of the	The key-references are updated, and are added as a separate chapter in the Main report. Although that we agree that there are more key reference in other languages, EULAND21 selected literature in English in order to make it accessible for all exchange students and staff that work together in an international context. Of course schools can add their

Questions and answers	Response by EULAND21
day, especially since the focus is on English/US literature while there is a lot of material also in other EU languages. But maybe this would be a new ERASMUS+ project….	key literature in their own language.
2.6 Structure of the description of the learning lines. Do you have any comments on the way the learning lines are structured in a set of aspects? Any suggestions for improvement?	
IFLA: In the report there could be a **figure** explaining the idea of structure of Blocks of Competences – Learning lines (I saw one in Jeroen´s presentation in Brussels?)	This figure can be found in the main report in section 2.1 (Figure 2).
IFLA: Now a list of very detailed information comes first – there could be an outline of some sort before this part of the report.	EULAND21 now added a structure of a module as an example.
ECLAS: Could there also be a short, synthesized version for quick communication to neighbouring disciplines, for example.	After the final review EULAND21 will add a short summary.
2.7. Learning outcomes. Do you miss any learning outcomes that are important for a landscape architecture programme? If so, please explain below.	
IFLA: No additions	OK
ECLAS: I am missing in general competences for involving people into the planning and design process. Planning and design is getting more participatory all across the world and I do not see the competences for this yet mirrored enough in this document. We also have a mission derived from the UN's New Urban Agenda to be inclusive and participatory in urban and landscape planning. EU LAND should address this topic much more obviously, it is key to the future and sustainability of planning and design in a globalising world with pluralising societies.	We strengthened the learning aims and teaching outcomes for including people, participatory planning in the learning lines Landscape Design, Landscape Planning and Urban Open Space. Maybe in the future a separate learning line might be developed for the "people" aspect in landscape architecture such as landscape perception, social needs and demands of various (multicultural) groups in society, inclusive landscapes, landscape democracy and the various types of participatory and community building processes.
IFLA-seminar: The working group worked out a collections of topics which are important for employability and related to education. For the specific competences these consist of language, additional knowledge, basic knowledge, and practical skills. Important generic competences are: work culture, critical thinking, organisation and student composition, and social competences. Practical skills are the most important issues in the specific competences. Education has to be designed that students get not only theoretical but also practical skills especially how to act at the construction site. Social competences are the most important issue in the generic competences. Those competences are often not typical Landscape Architecture issues like Moderation, Communication, Mediation. But they are getting more and more important for professional practice. Education should offer possibilities to learn these competences.	We feel that these generic and subject-specific competences are adequately addressed in the learning lines and modules, with exception of the social aspect. This is strengthened in the learning line landscape basics and in the design, planning and management competences.
Our main comment is that the social - cultural aspect	See our response to the IFLA remark

Questions and answers	Response by EULAND21
should be more elaborated as an important aspect in the programme and the modules	related to participation.
3. Examples of modules. In appendix A2 you can find 10 examples of modules of a LA-programme. Do you have any suggestions to improve any of these modules? If so, please mention the name of the module and your comment. *	
IFLA: See the general comment on social aspects above	OK
IFLA: In the report there could be a **figure** explaining the idea of structure of Modules	We added this as figure x.
IFLA: Now a list of very detailed information comes first – there could be a outline of some sort before this part of the report.	A short text is added.
ECLAS: Research module: in section 10/learning outcomes it would be good to start with the motivation/problem definition (following the usual steps of a research cycle). Maybe differentiate between research of/by/for design (see earlier comment), Reference Deming is also Simon Swaffield (Deming and Swaffield)	In the basic level module the sequence is adapted to this, in the intermediate level this is added more clearly. Reference is corrected
4.Key references for teaching LA. There is a list of all references on page 25 of the main report, and also at the end of every learning line in Appendix A1 and every Module in Appendix A2. [] Please let us know if we are missing any key literature that you use for teaching Landscape Design, Planning and Management . *	
IFLA: no additions	OK
ECLAS: the following additions are proposed: Kirkwood, Niall: The Art of Landscape Detail: Fundamentals, Practices and Case Studies, Wiley 1999 Von Seggern, H.; Werner J.; Grosse-Bächle L.: Creating Knowledge. Innovation Strategies for Designing Urban Landscapes, Studio Urbane Landschaften, Jovis Verlag, 2008 Cross, Nigel: Designerly ways of knowing, Springer, 2007	Thanks, these are good references. EULand21 added these to the list of references.
Concluding question: Please let us know if you have any other suggestions, comments or questions regarding the material that EU-LAND21 developed for landscape architecture programmes. *	
IFLA: No Further comments	OK
ECLAS: It would be good if the report elaborated more on evaluation and competence-based assessment. The report is all about competences but you do not explain how to conduct competence-based assessment. This is at least as relevant as the content outlines of the learning lines. Especially since the programme framework is very ambitious. Can we work towards a common assessment practice? I think this could be a very interesting subject for a future ERASMUS+ project.	Indeed, we added now a section on the Assessment strategy. And we agree that this could be elaborated further, also with training the assessors on competence based assessment.

EU-Land21

Trans-European Education for Landscape Architects

Output 02: Peer learning methods on the development of a curriculum

APPENDIX A1:

BLOCKS of COMPETENCES / LEARNING LINES

Table of Contents part A1- Block of Competences

List of Acronyms

BIM	Building Information Management	LA	Landscape Architecture
ELC	European Landscape Convention	LCA	Landscape Character Assessment
EQF	European Qualification Framework	ECTS	European Credit Transfer System
Ebanalas	European project on the analysis of contents of landscape architecture curricula	CAD	Computer Aided Design
LL	Learning line/ Block of competences	GPS	Global Positioning System
SUDS	Sustainable Urban Drainage Systems	EN	European Norms
ICT	Information and Communication Technology	ISO	International Organization for Standardization
GIS	Geographical Information Systems		

1. Introduction

Competences specific to landscape architecture (subject specific competences) are defined according to 12 fields reflecting the key areas of knowledge and expertise of the discipline. These fields are expressed in terms that are specifically landscape architecture related; each of them also includes areas of knowledge, skills and understanding which are common to several neighbouring disciplines. Such subject matter from neighbouring disciplines may also feature prominently in the curricula of landscape architecture programmes.

These key areas of knowledge and expertise are grouped according to the aspects of landscape architecture they address: theory, process, categories of projects, materials, tools, and practice. For each core competence a learning line is defined. The Learning Line disclose the full learning cycle from the basic to intermediate, to advanced and to master levels. The Learning Lines give the ECTS for the first education cycle – bachelor in landscape architecture.

Type of competence	**Blocks of Competences / Learning line**	
Basic	G1	Landscape architecture foundation, background and supporting competences
Theory	A1	Theory and Methodology in Landscape Architecture
Process of	B1	Landscape Design
Planning,	B2	Landscape Planning
Design &	B3	Landscape Management
Management		
Categories of	C1	Urban Open Space Planning (and Policy)
projects	C2	Interpretation and Conservation/Management of Cultural Landscapes
	C3	Conservation/Management of Parks and Gardens
	C4	Planning/Design for Infrastructure Projects (and Landscape Impacts)
Vegetation &	D1	Materials and Construction Techniques
Materials	D2	Vegetation Establishment and Plant Materials
Tools	E1	Information Technology in Landscape Architecture
Practice	F1	Professional Practice of Landscape Architecture and Entrepreneurship

Fig 1. The 12 subject specific competences for landscape architecture (ECLAS 2010) with an additional one for the foundations of geoscience and ecology

2. The core competences Design, Planning and Management

Core competences of landscape architecture centre on the process of intervention in landscapes to create new or revitalised places, by means of landscape planning, design and management, as well as by project implementation. Two interdependent core competences of landscape architecture are:

- Knowledge, skills and understanding of **planning, design and management**, to create new or conserve existing landscape situations, closely integrated with an
- holistic knowledge and understanding of the **nature of landscape** and the ways in which it is **perceived in time and space**, and the **pressures and driving forces** to which landscapes are subjected.

A general approach for teaching and acquiring the core competences is developed by Steinitz and presented in the ECLAS Guidance report (Figure 1).

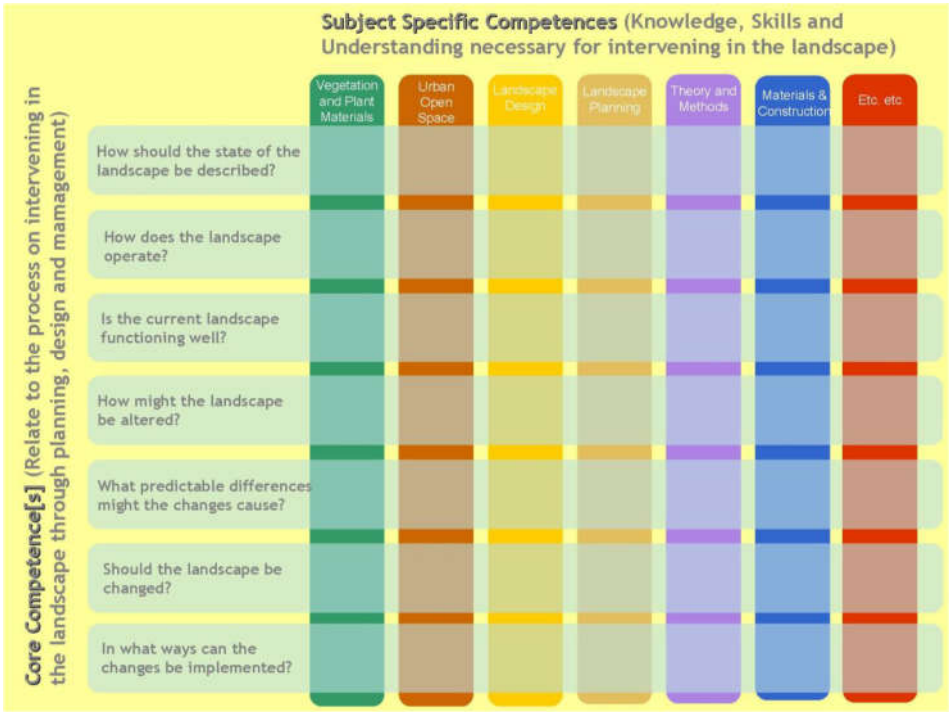

Figure 1. Core competences and Subject-Specific competences in Landscape Architecture (ECLAS Guidance 2010).

Competences and skills needed to perform landscape design, planning and management include abilities to seek answers to the following questions (Steinitz 1990):

1. How should the state of the landscape or site be described?
2. How does the landscape or site operate?
3. Is the current landscape or site functioning well?
4. How might the landscape or site be altered?
5. What predictable difference might the changes cause?
6. Should the landscape or site be changed?
7. In what ways can the changes be implemented?

These questions can be included when developing the assignments in the modules that are based on the learning lines for design, planning and management of landscapes.

3. The blocks of competences – learning lines for the subject specific competences

The blocks of competences (learning lines) are based on the subject specific competences. Each serves as a continuous learning-teaching trajectory through the whole programme. For the blocks of competences (learning lines) a Learning Line Card (LLC-card) is developed. The type of information that is provided is shown in the scheme on the next page.

Aspect			*Explanation*
1	**LL title**		*The title that is related to the competence*
2	**Description**		*A short description of the focus of the learning line / block of competences.*
3	**Competence(s) developed**		*The name of the subject-specific competence and the related generic competences: instrumental (methodical and technologies), social and personal, systematic.*
4	**Language of instruction**		*English language or another*
5	**LL code**		*A code that is unique for each learning line. The numbers can be found in section 2.3 figure 3. Subject specific competences for landscape architecture defined by EU-LAND21. So for instance EU-LAND21-C1.*
6	**European Qualifications Framework level**		*6 First cycle – Bachelor and/or 7. Second cycle*
7	**Levels**	**Basic**	*A short explanation for the level in which students acquire the competence based on the general description of levels in section 2.4. Figure 5.*
		Intermediate	
		Advanced	
		Master	
8	**ECTS credits**		*The ranges of ECTS that can be are needed to obtain the competences of the learning line. These are not exact, because these depend on the choices in the programme. The amount is based on the percentage that resulted from the analysis in the EBANALAS table. For instance for landscape design 20%, that means 48 ECTs so a range from 40 to 56 ECTS. The exemplary modules and course units have a defined number of ECTS.*
9	**LL Annotation**		*Description of the content of the learning line based on the explanation in the ECLAS Guidance Report (2010)*
10	**Aim of the LL**		*Description of the aim based on the explanation in the ECLAS Guidance Report (2010)*
11	**Planned LL learning outcomes**		*A description of the learning outcomes of the learning line in the form of the acquired competence: knowledge, understanding and skills. Statements of what a learner is expected to know, understand and/or be able to demonstrate after completion of a process of learning. Learning outcomes are distinct from the aims of learning, in that they are concerned with the achievements of the learner rather than the overall intentions of the teacher. Learning outcomes must be accompanied by appropriate ASSESSMENT CRITERIA which can be used to judge that the expected learning outcomes have been achieved. Learning outcomes, together with assessment criteria, specify the minimum requirements for the award of CREDIT, while marking is based on attainment above or below the minimum requirements for the award of credit. Credit accumulation and transfer is facilitated if clear learning outcomes are available to indicate with precision the achievements for which the credit will be awarded.*
12	**Context: examples of a role / roles**		*An example of the role that the landscape architect (student) must perform in relation to the competence.*
13	**Context: examples of the situation(s)**		*An example of a situation in academic or professional practice in which the landscape architect (student) must carry out the activities and produce the results.*
14	**Actions**		*A list of activities for producing the result mainly focusing on the steps that should be undertaken and the way they should be carried out.*
15	**Criteria for actions**		*Criteria for the process of how the student should work on the results. These may be used for assessing the process.*
16	**Results**		*The results of completing the tasks that are related to the competence; mostly in the form of professional products.*
17	**Criteria for results**		*A set of criteria to assess the quality of the result.*
18	**Suggested modules with ECTS**		*A list of modules that are related to this learning line, showing the links between the different course units. See section 4 and appendix A2.*
19	**Supporting courses**		*An overview of courses that offer competences that support the learning outcomes of this learning line.*
20	**References**		*Main literature and additional references preferably related to the levels.*

G1 LL CARD: Landscape architecture foundation, background and supporting competences

Aspect		*Explanation*
1	**LL title**	**Landscape architecture foundation, background and supporting competences**
2	**Description**	In the early part of an undergraduate landscape architecture programme students need to develop knowledge, skills and understanding in a range of basic subjects which support the way they learn the subject specific competences. These include the subjects which provide knowledge of the way that landscape is constructed and the processes which form it. This is also fundamental to the definition of landscape in terms of the "action and interaction of natural and/or human factors" as described in the ELC. These competences may also underpin and provide much of the means of landscape analysis for design and planning. The subjects within this field are the geosciences of geology, geomorphology, climatology, hydrology and soil science; the natural sciences of ecology, nature protection, forestry, agronomy and horticulture and the practical sciences such as land surveying, cartography and geographical information systems which may be readily available courses in e.g. life science universities but not in art academies of architecture faculties, requiring them to be "bought in". Relevant current themes such as climate change, enhancing biodiversity, flooding, sustainable food production, soil protection should be presented in relation to the basic landscape processes and structures. In addition, other supporting courses such as foreign language and health and safety may be very useful. These subjects require a mixed approach to teaching – they may be based around lectures of each subject supported by field visits to see the rocks, soils and plants in situ. The individual subjects also need to be understood as related systems so additional courses may be used to bring them together in a way which provides an integrated understanding and ability to "read the landscape". The courses may be taught as a foundation set in semester 1 and 2, may be presented in parallel to a studio course such as landscape analysis or landscape planning or may be integrated as smaller units within a larger course depending on the semester structure.
3	**Competence(s) developed**	Associated core and subject specific competences: B2, B3, C3, D2, and E1 Generic competences:

Aspect			***Explanation***
			INS.1. Capacity of analysis and synthesis INS.6. Visual, oral and written communication INT.1. Critical and self-critical abilities / Reflective practice and the ability to learn from failures INT.5. Ability to work in an interdisciplinary team SYS.2. Research skills SYS.3. Capacity to learn
4	**Language of instruction**		***English***
5	**LL code**		**EU-LAND21-G1**
6	**European Qualifications Framework level**		6: First cycle – Bachelor
7	**Levels**	**Basic**	The student demonstrates knowledge of: - the foundations of geoscience and ecology for the interpretation and understanding of landscape and the planning and design process (May be associated with study of cultural landscapes -Learning Line C3); - the relation of current issues such as climate change, biodiversity, flooding, food security to the landscape foundations; - the methods to apply these and how to link these to basic skills in GIS (Learning line E1).
		Inter-mediate	The student demonstrates knowledge of: - deeper aspects of geoscience and ecology and how these are used and applied in a range of planning, design, and management; - the relation of current issues such as climate change, biodiversity, flooding, food security to the landscape foundations; - applications at a range of spatial scales, especially larger ones such as landscape regions, use in landscape character assessment etc. The student can: - interpret the landscape out in the field through observation and reference to different sources of information; - integrate current themes such as climate resilience, flood-prevention, food security, enhancing biodiversity into the landscape interpretation; - apply GIS through capture and comparison of different landscape layers and understand their relationships.
		Ad-vanced	The student can: - weave together and apply the geosciences and ecology in a fully integrated way, observing not only the landscape as it appears but also determining the past, present and potentially future process and how they are likely to determine the trajectory of a given landscape under different conditions; - integrate current themes such as climate resilience, flood-prevention, food security, enhancing biodiversity into the landscape interpretation; - can collect and interpret data out in the field and use GIS in a reasonable

Aspect			*Explanation*
			sophisticated way.
		Master	*In addition to advanced level.* The student can: - develop new approaches / methods for integrating geoscience, ecology, and current environmental challenges in society in projects for landscape design, planning, management and research; - manage complex sets of data for landscape analysis and scenario planning.
8	**ECTS credits**		This competence requires 7% of the programme, 12-17 ECTS
9	**LL Annotation**		The study of landscape requires a firm knowledge of the structures above and below ground, the interacting patterns of distribution of different landscape elements and an understanding of how these interact over time and space to produce the landscape that is here today as well as what it may have bene like in the past and the processes leading to change in the future. A knowledge of the geosciences of geology, geomorphology, hydrology climate, soils, and natural sciences of ecology, forestry and agronomy; how the landscape was formed, especially the role of different geological systems ranging in scale and over many epochs with a focus on the most recent glaciation and post-glacial Holocene epoch and the subsequent ecological processes of colonisation and succession followed by human alteration, management, impact on, protection of and restoration of vegetation and hydrological systems all set within the historical and current climatic dynamics. An ability to read the landscape through field observation, site sampling, use of historical maps and other sources.
10	**Aim of the LL**		The aim of this learning line is to provide students with adequate knowledge and understanding of a range of aspects which have formed the landscape and to provide them with the ability to use this in landscape analysis, in planning and design as well as in management of landscapes at different ranges of scales
11	**Planned LL learning outcomes**		The student demonstrates knowledge of: - the range of aspects of geoscience and natural science which can be related to landscape architecture and current environmental issues in society (climate change, etcetera). - the science lying behind each aspect, being able to relate the different aspects to one another in a holistic way. The student understands: - the way in which geology, geomorphology, hydrology, climatology and ecology have generated landscape pattern and structure and how the processes of each continue to shape the landscape - how different aspects can be examined independently and together and related to current environmental challenges; - how to capture the information of the landscape as a set of layers with attributes and how these can be studied and analysed separately and together using tools including GIS - how to read the landscape through field observation. The student can: - identify a range of different geological, landform, hydrological and ecological features and types of land use

Aspect		*Explanation*
		- define how factors such as climate change, flooding, erosion, soil degradation, etcetera have an impact on the local and regional urban and rural landscape; - synthesise the information from each aspect into an integrated picture of a landscape; - use different mapping tools, especially GIS to collect and manipulate data to help build up the picture of a landscape
12	**Context: example of role(s)**	Assistant researcher, analysis in different stages of the planning and design process
13	**Context: examples of situation(s)**	Working in a team at a landscape office or local authority for integrating knowledge of the physical and biological environment in the design and planning process
14	**Actions**	- Defining the main themes for the analysis - Setting up a plan for research or analysis: methods, data collections. - Analysing landscape functions, structures and processes - Drawing conclusions and representing them in a spatial way - Reporting on progress - Communicating with team members and external parties
15	**Criteria for actions**	- Working in a systematic, verifiable and transparent way - Having independent judgment, critical analysis of outcomes - Asking for feedback - Makes presentations of results on an adequate level of abstraction - Applying the methods suited for the issues to be analysed ranging from natural sciences (ecology, hydrology) to spatial analysis by GIS.
16	**Results**	- Report and/or map with results of the analysis or research (for instance presenting landscape layers, interpreting map, ecotypes, ecosystem services); - Input for the planning or design process in the form of a program; - Presentation for team members, client, or other parties
17	**Criteria for results**	- Report and/or maps are well structured and results in a clear vision on the outcomes - Result can be integrated in further plans - Result is adapted to the needs of the client or project - Conclusions are based on the analysis of the issue - The result presents adequate basic knowledge of environment - The conclusions contribute to the quality of the planning process and outcomes - The report and presentation are clear, transparent and effective
18	**Suggested modules with ECTS**	Landscape science: physical geography, climate 5 Landscape science: ecology and land use 5 Reading the landscape in an integrated fashion 4 Introduction to land surveying (and GIS) 3
19	**Supporting courses**	The subjects generally need an understanding of basic science and students with good school study in geography and biology, for example, are likely to find these courses easy to grasp and apply. Any which cover core competences B1, B2, B3, D2, and E1

Aspect		***Explanation***
20	**References**	Barry R.G., Chorley R.J. and Chase T. (2009) Atmosphere, weather and climate. Routledge Bell, S. (2012) Landscape: Pattern, perception and process (2nd Edition, Routledge, Abingdon Brady N.C. and Weil R.R. (1999) The nature and properties of soils. Prentice Hall Clowes, A. and Comfort, P (1987) Process and Landform. Oliver & Boyd Goudie A. (2001) The Nature of the Environment. Blackwell Grunewald, Karsten, Bastian, Olaf (Eds.) 2015. Ecosystem Services – Concept, Methods and Case Studies. Springer Johnson, B & Kristina Hill (eds) 2001 Ecology and Design: Frameworks For Learning. Island Press. Smithson, P., Addison, K., Atkinson, K. (2008) Fundamentals of the Physical Environment. Routledge Turner, Monica G., Robert H. Gardner (2015) Landscape Ecology in Theory and Practice: Pattern and Process D. H. Wall (Editor in Chief), Soil Ecology and ecosystem services, Oxford University Press 2012; The European Union's Biodiversity Action Plan, Halting the loss of biodiversity by 2010 – and beyond, ISBN 978-92-79-08071-5, European Communities, 2008: http://ec.europa.eu/environment/nature/info/pubs/docs/brochures/bio_brochure_en.pdf

TRANS-EUROPEAN EDUCATION FOR LANDSCAPE ARCHITECTS

EU-LAND21 N° 2016-1-LT01-KA203-0232019

A1 LL CARD: Landscape Theory and Research

Aspect		*Explanation*
1	**LL title**	**Landscape Theory and Research**
2	**Description**	Within landscape architecture (LA) it is not possible to "just design" or "just plan" an area or site without some grounding in theory. As a subject with a long practical and pragmatic history, theory has only recently become a major field of study – it was otherwise "picked up along the way". However, owing to the broad disciplinary field of the subject, many theories used in LA are adopted from the so-called "neighbouring disciplines" such as architecture, ecology or environmental psychology to name a few. The necessary depth of understanding of theory is something which may be most appreciated by more mature students, after they have assimilated the basic knowledge of what is landscape and how it works as a pattern-process system, as well as the history of landscape architecture and the basic analysis skills. It can therefore be taught at several levels, with a basic introduction at the bachelor level and a deeper critical appreciation during the research phase of a master dissertation or complex design project. *Methods* For theory to be applicable in the context of planning and design projects (as opposed to academic research), it is necessary to understand some basic methods (within the context research *for* design perhaps). Usually different theories also come with associated methods for use of data and analysis of spaces and places. Here we are talking of simple methods suitable for bachelor level projects, although these may take on a more important role in the context of final bachelor projects/theses.
3	**Competence(s) developed**	Associated subject specific competences: B1, B2, B3, Generic competences INS.1. Capacity of analysis and synthesis INS.5. Grounding in basic knowledge of the profession: Spatial (3D) thinking; Ability to take the dimension of time into account INS.6. Oral and written communication in own language INS.7. Knowledge of a second language INS.9. Information management skills INS.10. Problem solving; Ability in negotiating, moderation and conflict management INS.11. Decision making INS.12. Ability to understand complex and dynamic systems INS.13 Dealing with complexity and ability to think and act in an integrated and holistic way INT.1 Critical and self-critical abilities / Reflective practice and the ability to learn from failures

Aspect			***Explanation***
			INT.2. Ability to accept criticism and to take it into account INT.5 Ability to work in an interdisciplinary team INT.8 Ability to work in an international context INT.9 Ethical commitment SYS.2. Research skills SYS.3 Capacity to learn SYS.5. Capacity to generate new ideas SYS.8. Ability to work autonomously SYS.11. Concern for quality
4	**Language of instruction**		***English***
5	**LL code**		**EU-LAND21-A1.**
6	**European Qualifications Framework level**		6: First cycle – Bachelor
7	**Levels**	**Basic**	The student demonstrates knowledge of: - some key basic theories useful for the interpretation and understanding of landscape and the planning and design process. May be associated with history (theories which emerged from or are associated with different historical periods or cultures); also basic urban theory. Methods to apply these basic theories are also simple but still challenging. - standard research methods; can select and justify the choice of methods and the selection of relevant sources. The student can define a research aim, research questions and draw up an action plan to give direction to a research.
		Intermediate	The student demonstrates knowledge of: - deeper aspects of theory in relation to design, planning, ecology, creativity, aesthetics and other fields which have a close relationship to more advanced skills of planning and design where a developed critical eye and ability to reflect on planning and design approaches and solutions benefits from applying theory through a number of complementary methods associated with each relevant theory. - The application of a range of research methods that are relevant for landscape architecture, select and justify the choice of methods and the selection of relevant sources. The student can: - frame a problem field and define a research aim, research questions and draw up an action plan to give direction to a research.
		Advanced	The student can: - consider a range of theories from neighbouring disciplines and develop approaches which integrate and apply them in specific circumstances, though always with a critical perspective and through the application of methods which may be quite sophisticated and require skills in e.g. quantitative or qualitative analysis of data collected as part of the research for a planning or design project.

Aspect			*Explanation*
			- reflect on research methods and criteria and introduce minor innovations for and develop a research method.
		Master	The student can: - critically review a range of theories from neighbouring disciplines and develop approaches which integrate and apply them in specific circumstances, though always with a critical perspective and through the application of methods which may be quite sophisticated and require skills in e.g. quantitative or qualitative analysis of data collected as part of the research for a planning or design project. - develop a research strategy, critically reflect on research methods and criteria and bring research methods a step further.
8	**ECTS credits**		This competence requires 7% of the programme, 12-17 ECTS
9	**LL Annotation**		The planning, design and management of landscapes requires an understanding of creating the new. Creating new landscapes always means modifying existing places which may or may not have previously been consciously designed (e.g. 'vernacular' landscapes). Creating new landscapes by planning, design and management (interventions) also implies shaping new mental images of places as much as it involves re-structuring their physical form. Landscape is therefore understood as much in the abstract terms of narratives and symbols as it is through the materiality of geomorphology and vegetation, field patterns, open space structures and gardens. Theory and methodology in landscape architecture must reflect this multi-layered understanding of landscapes. Landscape itself is a complex matter. It demands engagement with academic disciplines bridging the natural and social sciences, the arts and the humanities. Fields from archaeology to ecology and history are finding that the landscape is becoming a common arena for the meeting of an increasing number of disciplines from different academic domains. Therefore, gaining an understanding of the approaches to landscape from a variety of different disciplines is an important part of landscape architecture theory. Each of the many landscape related disciplines is having its own theoretical and methodological basis, which aim to explain and interpret how the parts of the material world and our perception of it 'work'. Theory and associated quantitative date gathering and analysis methods from the natural sciences can help to explain the bio-physical aspects of landscape; social sciences focus on its use and frequently apply qualitative methods of gathering and analysing data relevant for planning and design, while the humanities focus on, among other things, its historical development and interpretation, as well as its associated cultural meanings and values both to individuals and groups. However, in landscape architecture theory, planning, design and management processes – not the landscape - are the focus of the discourse. Thus, landscape architecture theory needs to go beyond simply assembling a series of explanations from each of its supporting and neighbouring disciplines of 'how' the landscape works and is perceived,

Aspect		*Explanation*
		interpreted and understood. Above all it needs to begin to address the question 'why' individuals, groups and societies intervene to modify and create new landscapes in the way in which they do. In doing so the activity of landscape architecture is interpreted and understood in a wider socio-cultural context, rather than just as a way of tackling technological challenges. Landscape architecture theory must also address procedural issues associated with the process of intervention through planning, design and management. *(source ECLAS Guidance report (2010), page 20)* In the domain of landscape architecture and spatial planning research projects inevitably touch on combinations of social and environmental sciences, and focus on ever changing realities, policies and interventions, often requiring and combining different research strategies and methods for data collection. In addition, landscape planners and designers often need to adopt participatory methods for research and design, since they are required to propose interventions, draft designs, offer alternative management strategies or contribute to policy development. Students are expected to be able to develop a proposal for a research project in the field of landscape architecture or spatial planning and carry out a research.
10	**Aim of the LL**	The aim of this learning line is to provide students with adequate knowledge and understanding of a range of aspects of landscape theory and their application through the associated methods and to be able to apply this in a critical fashion in planning and design project courses as well as in critical writing and in research projects such as for a bachelor or master thesis.
11	**Planned LL learning outcomes**	The student demonstrates knowledge of: - the range of theories which can be related to landscape architecture. - the background, supporting evidence and critical debate surrounding each theory. The student understands: - the role of theory as a support to all aspects of landscape architecture. - how different theories emerge from specific contexts, disciplines and evidence. - the way in which theory evolves and develops in reaction to current trends and priorities. - the fact that some theories do not stand the test of time and are abandoned. The student can: - select or reject theories which may be applicable to a research objective or design project and to be critical of those while applying or using them. - summarise, synthesise and communicate the theories they are using as support for their design or research project. - demonstrate how their work builds on or supports theory through the application of selected methods as part of research for design, by design or as part of research contributing to a bachelor project or thesis. (For the advanced level this might be a master thesis).

Aspect		*Explanation*
12	**Context: example of role(s)**	Junior landscape researcher in a multidisciplinary team.
13	**Context: example of situation**	A landscape architecture office that develops scenarios and strategies for spatial planning. A local or regional authority that is responsible for strategic spatial planning and design.
14	**Actions**	- Reading literature, collecting data; - Reflect and discuss literature: theories and methods of landscape architecture; - Present at a research-oriented student-led seminar; - Framing a problem field, defining a research aim and research question; - Developing a research strategy and selecting research methods; - Carry out a research; - Writing a research report.
15	**Criteria for actions**	- Working in a systematic, verifiable and transparent way; - Having independent judgment, critical analysis of outcomes; - Asking for feedback; - Makes presentations of results on an adequate level of abstraction; - Applying the methods suited for the issues to be analysed ranging from humanities (behavioural science, perception psychology) to spatial analysis; - Meeting ethical standards of privacy, confidential data, copyright and author's rights.
16	**Results**	- Presentation and papers on selected theories, methods; - Presentations research strategies and methods for a seminar; - Research proposal; - Research report.
17	**Criteria for results**	- Papers and reports are well structured and results in clear answers to the issues, questions, and research aim and/or research questions. - Meeting the academic criteria of relevance, truth value (internal validity or credibility), applicability (external validity or generalisability), consistency (reliability, stability, or dependability), and transparency (objectivity). - The research question is (1) understandable, clear and formulated as an open question, (2) clearly indicates what is being investigated, (3) relevant for the defined problem field and research aim, and (4) clearly framed in context and time. - The result has value for a design, planning or management project and has a wider applicability for comparable plans and projects in the form of design strategies, design principles and/or design guidelines. - The result is adapted to the needs of the client, issues in society. - The conclusions contribute to the quality of the design and planning process. - The report and presentation are clear, transparent and effective. - The report contains a reflection on the correctness of the conclusions, the reliability of the data, the application of the correct research method(s), and the limitations of the research.

Aspect		***Explanation***	
18	**Suggested modules with ECTS**	Module	ECTS
		Introductory seminar: Reading and making presentations on selected theories and methods	5
		Student led seminars to discuss theory and methods accompanied by an essay	6
		Small design project to apply a specific theory	6
19	**Supporting courses**	Landscape Design, Strategic Landscape Planning, Landscape Management Urban Open Space Planning (and Policy) Interpretation and Conservation/Management of Cultural Landscapes	
20	**References**	Bell, S., Sarlöv Herlin, I. and Stiles, R. (2011) Exploring the boundaries of landscape architecture. Routledge, London Brink, A. van den, et al. (eds.) (2016). Research in Landscape Architecture: methods and methodology. London: Routledge Creswell, J. W. (2009). Research design: Qualitative, quantitative, and mixed method approaches. Los Angeles: Sage Deming, E and S. Swaffield (2012) Landscape Architecture Research, John Wiley & Sons, ISBN: 978-0-470-56417-2 (p 205-222) Groat, L., Wang, D., (2012) Architectural Research methods, John Wiley and sons LTD Kumar, R. (2014). Research Methodology: A Step-by-Step Guide for Beginners. Sage Publications Ltd., ISBN 978-1-4462-6996-1 Murphy, M.D. (2005) Landscape architecture theory – an evolving body of thought. Waveland Press, Long Grove, Illinois Murphy, M.D. (2016) Landscape architecture theory: an ecological approach. Island Press Nijhuis, S. & I. Bobbink (2012). Design related research in landscape architecture. In Journal of Design Research 10(4), 239-257 Swaffield, S. (Ed) (2002) Theory in Landscape Architecture: A Reader (Penn Studies in Landscape Architecture). University of Pennsylvania Press, Philadelphia Thompson, I. (2017) The role of theory in: Van den Brink, A. Bruns, D., Tobi, H. and Bell, S. (Eds) Landscape architecture research: methods and methodology. Routledge, London Yin, R. K. (2015). Case study research: Design and methods. London: Sage Publication	

B1 LL CARD: Landscape Design (areas, projects and sites)

Aspect		*Explanation*
1	**LL title**	**Landscape Design (areas, projects and sites)**
2	**Description**	The learning line Landscape Design focuses on the basics of landscape design on the municipal and local scale of sites and areas. In this line, students get knowledge, understanding and the basic design skills applied for landscape as an ecologic, social and economic systems. Students learn to figure out landscape development issues, formulate the design task, and assess the natural, the historic, the cultural and the urban layers of the designed open space. Students learn to generate the alternative design proposals based on the strategic and local values of the place, deliver and react to the critics. Students also learn to present the drafted design proposals to the stakeholders.
3	**Competence(s) developed**	Making landscape design of rural areas, urban fringe areas, gardens, parks, urban open space and structures within cities in different phases of planning. Associated generic competences: INS.1. Capacity of analysis and synthesis INS.2. Capacity for organisation and planning INS.3. Ability to manage public participation INS.5. Grounding in basic knowledge of the profession: Spatial (3D) thinking; Ability to take the dimension of time into account INS.8. Elementary computing skills INS.9. Information management skills INS.10. Problem solving; Ability in negotiating, moderation and conflict management INS.11. Decision making INS.12. Ability to understand complex and dynamic systems INS.13 Dealing with complexity and ability to think and act in an integrated and holistic way INT.1. Critical and self-critical abilities / Reflective practice and the ability to learn from failures INT.2. Ability to accept criticism and to take it into account INT.3 Teamwork INT.4. Interpersonal skills INT.5. Ability to work in an interdisciplinary team INT.6. Ability to communicate with experts in other fields INT.7. Appreciation of natural diversity and multiculturality / Understanding the cultural environment INT.8 Ability to work in an international context

Aspect			***Explanation***
			INT.9 Ethical commitment SYS.1. Capacity for applying knowledge in practice SYS.2. Research skills SYS.3. Capacity to learn SYS.4. Capacity to adapt in new situation SYS.5. Capacity to generate new ideas SYS.6. Leadership SYS.7. Understanding of cultures and customs of other countries SYS.8. Ability to work autonomously SYS.9. Project design and management SYS.10. Initiative and entrepreneurial spirit SYS.11. Concern for quality SYS.12. Will to succeed SYS.13 Capacity of argumentation, abstraction, project management, to set priorities
4	**Language of instruction**		**English**
5	**LL code**		**EU-LAND21-B1**
6	**European Qualifications Framework level**		**6 -** First cycle – Bachelor
7	**Levels**	**Basic**	The student can: - Find, collect and analyse the data about the designed site or territory; - Draft a design vision, develop a design concept - Can build spatial models to explore design concepts - Sketch, design and visualise his/ her ideas; - Recognizes and characterizes the natural conditions and social aspects necessary for the landscape design and planning.
		Intermediate	The student can: - Analyse the situation with social, economic and environmental variables; - Draft a design vision, develop a design concept - Can build spatial models to explore design concepts - Generate design alternatives and assess their impact on the goals of planning and design; - Integrate the knowledge of graphical, engineering and artistic fields into the design proposals; - Apply common communication tools supporting participatory processes as well as different examples of participatory processes and how methods and tools are applied in practice. - Apply the design principles on the sites and areas of different scope and scale, move the proposals between different scales. - Prepare the design documents according to the formal regulations.

Aspect			*Explanation*
		Advanced	The student can: - Use a variety of design methods and techniques to communicate with different stakeholders; - Draft a design vision, develop a design concept - Can build spatial models to explore design concepts - Apply the legal bases of landscape, urban and architectural design; - Practically apply the methods of impact assessment for the designed territory; - Apply common communication tools supporting participatory processes as well as different examples of participatory processes and how methods and tools are applied in practice. - Communicate analytic knowledge in a verbal, descriptive and graphical manner, synthesize information and present a planning idea.
		Master	In addition to the advanced level. The student can: - Develop innovative approaches for landscape design; - Carry out research in combination with design in an integrated way.
8	**ECTS credits**		This competence requires 10% of the programme, 18-24 ECTS
9	**LL Annotation**		Landscape design is one of the means of landscape intervention Outputs of these activities are, among others, design documents, consultations, and built projects.
10	**Aim of the LL**		The aim is to teach the students the main LA design methods, principles and practical skills to perform the variety of design tasks for areas, projects and sites. In design, a specific competence is to conceive ideas for the future (physical) alteration of a landscape or a landscape element (garden, park, square, green-infrastructure, etc.); ideas are presented as concrete alternatives. Students should be able to select one alternative and to implement a preferred design solution by providing specifications that are the basis for construction (including the management and monitoring of a construction project). Planning and design activities may differ in scale (regional for planning, local and site for design); however, regional landscape design and local open space planning also exist. Special areas of knowledge and expertise of making proposals for rural landscapes are to understand interactions between environmental factors and land use that is specific to rural landscapes. Landscape architects should be able to contribute to the sustainable management of natural resources, e.g. by consulting in processes of conflict management. In the context of urban landscapes, by contrast, special areas of knowledge and expertise are to be able to produce strategic plans for the establishment and improvement of green infrastructure in cities, towns, and villages (Learning Line C1). For private gardens and sites, it is important to meet the demands of the clients considering environmental quality and sustainability. Goals are to contribute to optimise the appearance, use and management of open space.
11	**Planned LL learning**		The student demonstrates knowledge of: - the phases of the design process, design tasks, design methods,

Aspect		*Explanation*
	outcomes	developing alternatives; - the different layers and aspects of landscapes; - the role of design in the various scales and types of landscapes. The student understands: - The interdependence of planning, design and management; - Landscape processes over time; - The interrelation of design on different scales; - The importance of public participation in the design process. The student can: - (1) Describe, analyse and assess an existing landscape (area, site, project); - (2) Define goals and/or a vision for future development, and landscape quality objectives; - (3) Apply common communication tools supporting participatory processes as well as different examples of participatory processes and how methods and tools are applied in practice. - (4) Draft a design vision, develop a design concept and build spatial models to explore design concepts; - (4) Conceive alternative solutions of how a landscape might be altered, and to assess how these alternatives would meet goals and quality objectives; - (5) Select one solution of how a landscape should be altered and propose – and detail - this solution for implementation; - (6) Forecast consequences of landscape design in time; - (7) Elaborate on the role of monitoring in landscape design; - (8) Present design visions, concepts, alternatives, and solutions in a clear and convincing way.
12	**Context: Example of role(s)**	Landscape designer within a project team**.**
13	**Context: example of situation**	A commissioner hands over a brief for a complex spatial design issue in the landscape. The designer should provide a design proposal for resolving this issue.
14	**Actions**	The following activities should be carried out to get an expected design result: - Transferring the brief into a design task; - Planning and defining steps in one's own design process; - Communicating on the design and the process, within a design team and with other disciplines; - Analysing, making use of GIS; - Making design plans in such a way that it leads to a concept and an adequate spatial form. The process of design should be transparent and verifiable; - Placing the design task in a wider perspective of space and time. Methodical and process aspects are used to assess and adapt the

Aspect		*Explanation*
		design. Time aspects are development of patterns of land use, morphology types, development of infrastructure, phasing of the implementation, movement through space; - Defining the scale and the context of the design task; - Translating the design from one scale to the other and transfer the result; to an earlier stage of the design process (cycle of improving the design); - Placing the design in a cultural context, national and international; - Presenting intermediate results and the final product.
15	**Criteria for actions**	- Carry out the steps of the design process independently; - Select and apply the right methods and technique for each phase (brief, design task, program, concept, spatial model etc.); - Communication on a level of abstractness that relates to the step in the design process and parties involved (commissioner, other discipline, team member); - Making one's own design process transparent; - Reflecting on one's own work; - Asking for feedback and give correct feedback to others; - Creativity in solutions; - Making effective use of references and sources of inspiration; - Awareness of cultural and professional context; - Guarding the integrity of the process; - Making effective use of means like drawing, reporting and multimedia; - Making clear open space interventions; - Contributing as an individual to teamwork.
16	**Results**	- Design vision, design concept, strategy, masterplan, preliminary design, etcetera; - Maps of analysis of development of abiotic, biotic, land use and infrastructure, urban, spatial patterns; - Cross sections, spatial models, reference images; - Log or process document; - Report on the analysis and report to explain the design; - Presentation (poster, report, multimedia presentation).
17	**Criteria for results**	- Adequate reference to existing legislation and guidelines; - Meeting technical and other standards that reflect the state of the art and technology in the field; - Meeting the requirements of national, regional and local standards of formal (comprehensive and sectoral) planning; - Considering the regional and local landscape identity that is based on joint values and cultures; - Reflecting the principles of subsidiary and democracy: including the

Aspect		*Explanation*	
		participation of local and regional interest groups and stakeholders; - Transparency of the data used for the design and adequate use of GIS; - The way the process and the content of the design is organized is transparent including alternatives, choices, spatial models, concept and plan proposal; - The results demonstrate that the student can carry out an empirical or site-oriented research based on verifiable data and that the student is able to transfer these effectively in the design process; - The design demonstrates the inclusiveness of the cultural, historical & spatial context; - The design contains a well-founded opinion that is translated in a clear strategy; - The products demonstrate that the analysis has led to an understanding of the central issues by alternatives, variation in spatial form models, from which a concept has been developed; - The design proposal demonstrates an adequate integration of components and aspects (land use patterns, landscape layers, rural or urban context, ecology, community, economy, etc.); - The design has been worked through in different levels of scale and is presented by drawings, reports and references (images, situations, projects).	
18	**Suggested modules with ECTS**	**Modules**	**ECTS**
		Lectures: - Theory and methods of landscape design; - Landscape design law and regulations (national, local); - Inclusive design tools and methods;	*4*
		Design Studio: Landscape Design: a. Green infrastructure design b. Urban open space design;	8
		Workshop: Workshop with stakeholders, presenting the design versions, public debate on the goals and outcomes of design.	3
		Study trip: Designed area analysis, meeting the residents, meeting the municipal authority;	3
		Self-Study: Analysing references, case studies, legal and historical resources, sketching, drawing, model and draft preparation;	6
19	**Supporting courses**	The following supporting courses can be offered: - Urban infrastructure systems; - Planting and LA material; - SUDS; - History of landscape architecture; - ICT tools for LA design and visualisation.	
20	**References**	Main references: Alexander, C., S. Ishikawa and M. Silverstein, 1977. A Pattern Language. Oxford University Press, New York, 1171 pp.	

Aspect		Explanation
		Waldheim, Ch (Ed) The Landscape Urbanism Reader. 2006. Princeton Architectural Press. N.Y. ISBN 978-1-56898-949-5 (digital). Loidl, H-W, S. Bernard, 2003, Opening Spaces Yudelson, Jerry. 2016. Reinventing Green Building. New Society Publishers. Gabriola Island BC Canada. ISBN 978-0-86573-855-9 McHarg, Jan. 1971. Design with Nature. American Museum of Natural History Gehl J. 2010. Cities for People. Island Press, Washington. ISBN 13-978-1-59726-573-7. **European context** (EU Teach 2010): 1. Policies in Europe concerning **landscape and environmental values** at present and in future (e.g. European agriculture policies, intensification of agriculture); 2. International and European approaches for **spatial development and land use management** like mono-/multifunctional landscapes; 3. European **planning instruments and tools** (e.g. environmental impact assessment EIA, strategic impact analysis SIA) and specific national instruments; 4. European categories of **protected areas and environmental networks** (NATURA 2000, other) 5. **Life Cycle Assessment LCA** and Life Cycle Costing LCC methods and tools for sustainable materials and solutions. EU Public Procurement Directive EC 2014/24/EU, Article 68. 6. Convention of **Biological Diversity** (Rio, 1992), Convention on the Conservation of Migratory Species of Wild Animals, CMS (Bonn, 1979), Convention of the Conversation of European Wildlife and Nature (Bern 1979)); 7. European strategies/programmes to ensure and to foster **abiotic resources like water, climate, soil** (European Soil Charta (1972) / Convention on Wetlands of International Importance especially as Waterfowl Habitat. Ramsar (1971) European Climate Change Programme (ECCP)); 8. European strategies/programmes to ensure and to foster **landscape and cultural heritage** (e.g. European landscape convention (Florence, 2000), The Convention on the Protection of the Archaeological heritage of Europe, usually referred to as the Valletta Treaty or Malta Convention (1992)); 9. European strategies/programmes to ensure **nature protection via integrative strategies** (The Sixth Environment Action Programme of the European Community (2001-2012), Alpine convention (96/191/EG), The European Charter for Sustainable Tourism in Protected Areas); 10. Knowledge of landscape related strategies to implement a **sustainable spatial development** (e.g. European spatial development perspective (ESDP) and Territorial agenda of European Union (Leipzig, 2007)); 11. Thematic directives focusing on **environmental goods**: Habitats directive on the conservation of natural habitats and of wild fauna and flora (Council Directive 92/43/EEC (1992); Directive 2009/147/EC of the European Parliament and of the Council on the conservation of

Aspect		***Explanation***
		wild birds 2009 (SPA)), Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy; Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration; Thematic Strategy for Soil Protection [SEC(2006)620] [SEC(2006)1165]); 12. Instrumental directives focusing on the question how **to implement environmental standards** in the EU-states: Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment (EIA), European SEA Directive 2001/42/EC); *13.* Directives focusing on **utilisation and handling of risks and dangers**: Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks; Waste framework directive (2008/98/EC); Directive 2002/49/EC of the European Parliament and of the Council of 25 June 2002 relating to the assessment and management of environmental noise.

B2 LL CARD: Landscape Planning for a Regional and Local Scale

Aspect		*Explanation*
1	**LL title**	**Landscape Planning. Design for a Regional and Local Scale**
2	**Description**	The focus of this learning line is the competences for making landscape plans of rural areas, urban fringe areas, structures within cities in different phases of planning and involve people in the design and planning process. For specific types of areas or cities additional subject specific competences are defined.
3	**Competence(s) developed**	Associated core and subject specific competences: B1, B3, C1, C2, C3, D2, and E1 Generic competences: INS.1. Capacity of analysis and synthesis INS.2. Capacity for organisation and planning INS.3. Ability to manage public participation INS.5. Grounding in basic knowledge of the profession: Spatial (3D) thinking; Ability to take the dimension of time into account INS.8. Elementary computing skills INS.9. Information management skills INS.10. Problem solving; Ability in negotiating, moderation and conflict management INS.11. Decision making INS.12. Ability to understand complex and dynamic systems INS.13 Dealing with complexity and ability to think and act in an integrated and holistic way INT.1. Critical and self-critical abilities / Reflective practice and the ability to learn from failures INT.2. Ability to accept criticism and to take it into account INT.3 Teamwork INT.4. Interpersonal skills INT.5. Ability to work in an interdisciplinary team INT.6. Ability to communicate with experts in other fields INT.7. Appreciation of natural diversity and multiculturality / Understanding the cultural environment INT.8 Ability to work in an international context INT.9 Ethical commitment SYS.1. Capacity for applying knowledge in practice SYS.2. Research skills SYS.3. Capacity to learn SYS.4. Capacity to adapt in new situation

Aspect			***Explanation***
			SYS.5. Capacity to generate new ideas SYS.6. Leadership SYS.7. Understanding of cultures and customs of other countries SYS.8. Ability to work autonomously SYS.9. Project design and management SYS.10. Initiative and entrepreneurial spirit SYS.11. Concern for quality SYS.12. Will to succeed SYS.13 Capacity of argumentation, abstraction, project management, to set priorities
4	**Language of instruction**		*Dutch - **English** – Estonian – Hungarian - Lithuanian – Polish.*
5	**LL code**		***EU-LAND21-B2***
6	**EQF level**		***6 -** First cycle – Bachelor*
7	**Levels**	**Basic**	The student can: - Find, collect and analyse the data about the planned territory; - Draft a vision and strategy for the area - Formulate planning goals for the area - Sketch, design and visualise his ideas; - Generate planning alternatives and assess their impact on the goals of planning; - Recognizes and characterizes the natural conditions necessary for the landscape planning.
		Intermediate	The student can: - Analyse the situation with social, economic and environmental variables; - Integrate the knowledge of graphical, engineering and artistic fields into the planning proposals; - Apply the planning principles on the areas of different scope and scale, move the proposals between different scales. - Select the most adequate methods and tools to be applied in specific challenges requiring participatory processes. - Prepare the planning documents according to the formal regulations.
		Advanced	The student can: - Use a variety of planning methods and techniques to communicate with different stakeholders; - Knows the legal bases of regional and urban planning; - Practically apply the methods of environmental impact assessment for the planned territory; - Apply common communication tools supporting participatory processes as well as different examples of participatory processes and how methods and tools are applied in practice. - Communicate analytic knowledge in a verbal, descriptive and graphical manner, synthesize information and present a planning idea.
		Master	In addition to advanced. The student can: - Develop innovative approaches for landscape planning; - Carry out research in combination with planning in an integrated way.
8	**ECTS credits**		This competence requires 10% of the programme, 18-24 ECTS.

Aspect		*Explanation*
9	**LL Annotation**	Landscape planning is one of the means of landscape intervention: through the planning, design and management of landscapes. Outputs of these activities are, among others, planning documents, consultations, and built projects. Planning, design and management of landscapes are core competences of landscape architecture; they are processes of intervention.
10	**Aim of the LL**	The aim is to teach the students the main planning methods and practical skills to perform the variety of planning tasks on a regional and local scale. Landscape planning mainly aims at establishing or changing policies. In (strategic) planning, a specific competence is to conceive proposals for the future (spatial and environmental) development of a landscape; these are presented as strategic and/or programmatic scenarios and alternatives. Landscape architects should be able to select and implement planning proposals by integrating them into relevant policy; these include statutory landscape plans, comprehensive regional and local plans (e.g. land-use plans), sectorial plans, as well as all instruments of environmental assessment. *(ECLAS Guidance report (2010)*
11	**Planned LL learning outcomes**	The student demonstrates knowledge of: - the phases of the planning process, policies, planning methods, developing alternatives; - the different layers, aspects and driving forces of landscapes; - the role of planning in the various scales and types of landscapes. The student understands: - the interdependence of planning, design and management; - landscape processes over time; - the interrelation of planning on different scales; - the importance of public participation in the planning process. The student can: - describe, analyse and assess an existing landscape (rural, urban, cultural, etcetera); - define goals for future development, and landscape quality objectives; - draft a concept for a policy, strategy or long-term vision; - conceive alternative solutions of how a landscape might be altered, and to assess how these alternatives would meet goals and/or quality objectives; - select a solution for effective interventions by which the landscape should be altered and propose this solution for implementation in governance; - forecast consequences of landscape planning in time; - Elaborate on the role of monitoring in landscape planning.
12	**Context: Example(s) of a role**	Landscape Planner within a project team.
13	**Context: example(s) of a situation**	A commissioner hands over a brief for a complex spatial issue in the landscape. The planner should provide a spatial plan for resolving this issue in

Aspect		*Explanation*
		an integrated way including involvement of stakeholders.
14	**Actions**	- Transfer the brief into a planning task; - Planning and defining steps in one's own planning process; - Communicating on the plan and the process, within a planning team and with other disciplines; - Analysing, capturing data, making use of GIS; - Making plans in such a way that it leads to a concept and an adequate spatial form. The process of planning should be transparent and verifiable; - Placing the planning task in a wider perspective of space and time. Methodical and process aspects are used to assess and adapt the design. Time aspects are development of patterns of land use, development of infrastructure, phasing of the implementation, movement through space; - Defining the scale and the context of the plan, strategy; - Translating the planning goals on different levels and time scales and transfer the result; to an earlier stage of the planning process; - To place the plan in a cultural context, national and international; - Presenting intermediate results and the final product.
15	**Criteria for actions**	- Carry out the steps of the design process independently; - Select and apply the right methods and technique for each phase (brief, design task, program, concept, spatial model etc.); - Communication on a level of abstractness that relates to the step in the design process and parties involved (commissioner, other discipline, team member); - Making one's own design process transparent; - Reflecting on one's own work; - Asking for feedback and give correct feedback to others; - Creativity in solutions; - Making effective use of references and sources of inspiration; - Awareness of cultural and professional context; - Guarding the integrity of the process; - Making effective use of means like drawing, reporting and multimedia; - Making clear spatial interventions; - To contribute as an individual to teamwork.
16	**Results**	- Policy, strategic master plan and/or proposals for alternatives; - Maps of analysis of development of abiotic, biotic, land use and infrastructure patterns; - Log or process document; - Report to explain the plan and report on the analysis; - Presentation (poster, report, multimedia presentation).
17	**Criteria for results**	- Transparency of the data used for the planning report and adequate use

Aspect		***Explanation***	
		of GIS; - The way the process and the content of the plan is organized is transparent including alternatives, choices, spatial models, concept and plan proposal; - The results demonstrate that the student can carry out an empirical or plan-oriented research based on verifiable data and that the student is able to transfer these effectively in the planning process; - The plan demonstrates the relation with the cultural, historical & spatial context; - The plan contains a well-founded opinion that is translated in a clear strategy; - The products demonstrate that the analysis has led to an understanding of the central issues by alternatives, variation in spatial models, from which a concept has been developed; - The plan proposal demonstrates an adequate integration of components and aspects (land use patterns, landscape layers, regional context, ecology, etc.); - The plan has been worked through in different levels of scale and is presented by drawings, reports and references (images, situations, projects).	
18	**Suggested modules with ECTS**	**Lectures**: Theory and methodology of planning, planning law and regulations, participatory planning tools and methods, other	*5*
		Studio: Landscape Planning A. Regional landscape plan B. Municipal landscape plan	10
		Study trip: planned area analysis, meeting the residents, meeting the regional and municipal authority	2
		Self-Study: analysing references, legal and historical resources, sketching, draft preparation	4
		Workshop*:* Meetings the stakeholders, presenting the planning versions, public debate on the goals of planning	3
19	**Supporting courses**	Economy, participatory planning, ecology, history of landscape architecture, infrastructure, ICT, graphic design.	
20	**References**	Ahern, Jack. 2005. Theories, methods and strategies for sustainable landscape planning, Tress, B., Tress, G., Fry, G., Opdam, P. (eds.) From landscape research to landscape planning: Aspects of integration, education and application. Springer Alexander, C., S. Ishikawa and M. Silverstein, 1977. A Pattern Language. Oxford University Press, New York, 1171 pp. Steinitz, C. 1995. A Framework for Planning Practice and Education. In Process Architecture: Ecological Landscape planning. Tokyo: pp.42-54 Takeuchi. K. Landscape Planning Methodology Based on Geoecological Land Evaluation. GeoJournal Vol. 7, No. 2, Landscape Synthesis (1983), pp. 167-183	

TRANS-EUROPEAN EDUCATION FOR LANDSCAPE ARCHITECTS

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B3 LL CARD: Managing Landscapes on a Regional, Municipal and Local Scales

Aspect		*Explanation*
1	**LL title**	**Landscape Management. Processes of Intervention on a Regional, a Municipal and a Local Scale.**
2	**Description**	The learning line Landscape Management focuses on the basics of landscape management on regional, municipal and local scales. In this line, students get knowledge, understanding and the basic management skills applied for landscape as an ecologic, social and economic systems. Students learn to figure out landscape development issues, formulate the management tasks as they relate to planning and design, assess the natural, the historic, the cultural and the urban layers by managing the planned and designed open spaces. Students learn to develop the alternative management proposals based on the strategic and local values of the place, deliver the outcomes and react to the critics. Students also learn to present the created management proposals to the stakeholders, receive the feedback and improve.
3	**Competence(s) developed**	Making landscape management plans for rural, natural areas and cultural landscapes; green infrastructure, urban open space, parks and gardens in different phases of planning. Associated generic competences: INS.1. Capacity of analysis and synthesis INS.2. Capacity for organisation and planning INS.3. Ability to manage public participation INS.5. Grounding in basic knowledge of the profession: Spatial (3D) thinking; Ability to take the dimension of time into account INS.6. Visual, oral and written communication INS.7. Knowledge of a second language INS.8. Elementary computing skills INS.9. Information management skills INS.10. Problem solving; Ability in negotiating, moderation and conflict management INS.11. Decision making INS.12. Ability to understand complex and dynamic systems INS.13 Dealing with complexity and ability to think and act in an integrated and holistic way INT.1. Critical and self-critical abilities / Reflective practice and the ability to learn from failures INT.2. Ability to accept criticism and to take it into account

Aspect			***Explanation***
			INT.3 Teamwork INT.4. Interpersonal skills INT.5. Ability to work in an interdisciplinary team INT.6. Ability to communicate with experts in other fields INT.7. Appreciation of natural diversity and multiculturality / Understanding the cultural environment INT.8 Ability to work in an international context INT.9 Ethical commitment SYS.1. Capacity for applying knowledge in practice SYS.2. Research skills SYS.3. Capacity to learn SYS.4. Capacity to adapt in new situation SYS.5. Capacity to generate new ideas SYS.6. Leadership SYS.7. Understanding of cultures and customs of other countries SYS.8. Ability to work autonomously SYS.9. Project design and management SYS.10. Initiative and entrepreneurial spirit SYS.11. Concern for quality SYS.12. Will to succeed SYS.13 Capacity of argumentation, abstraction, project management, to set priorities
4	**Language of instruction**		***English***
5	**LL code**		***EU-LAND21-B3***
6	**European Qualifications Framework level**		**6 -** First cycle – Bachelor
7	**Levels**	**Basic**	The student can: a. find, collect and analyse the data about the existing policies and the management of the existing, planned and/or designed territory; b. formulate a vision for a defined area based on a given policy framework. c. visualise guiding images for elements or areas in the landscape; d. recognise and characterize the natural and social conditions necessary for the landscape management.
		Intermediate	The student can: a. analyse an area or site regarding management aspects with social, economic and environmental variables; b. ensure the planning and design goals are translated in a strategy and management plan integrating knowledge of architecture, engineering and artistic fields; make sure these are properly implemented and managed in time and space; c. generate management scenarios and assess their impact on the goals d. define adequate management principles on the areas of different scope and scale e. prepare the management documents according to formal regulations.

Aspect			*Explanation*
		Advanced	The student can: a. use a coherent variety of management principles, methods and techniques to meet the needs of different stakeholders and the management organisation; b. use the legal bases of environmental, urban and architectural design and management; c. practically apply the methods of (impact) assessment for the managed territory; d. communicate analytic knowledge in a verbal, descriptive and graphical manner, synthesize information by presenting a management plan.
		Master	In addition to the advanced level. The student can: a. develop innovative approaches for landscape management; b. carry out research in combination with developing management plans in an integrated way.
8	**ECTS credits**		This competence requires 7% of study time, 12 -17 ECTS
9	**LL Annotation**		Landscape management concerns various levels of abstraction, time span and objects. It can vary from management planning for projects like gardens, parks, urban open space, to plans for larger areas such as nature reserves, recreational zones, urban districts or a defined area for a cultural landscape.
10	**Aim of the LL**		The aim is to teach the students the main LA management methods, principles and practical skills to perform the variety of management tasks on regional, municipal and local scales. Landscape management takes design and planning beyond the implementation and establishment phases. A specific competence is to make proposals for the long-term development of a landscape. Differences exist between management and maintenance; management concerns intentions and strategies (deliberate development), while maintenance has the focus on preserving an existing landscape or landscape element. Landscape management is concerned with directing the dynamics of a landscape, including its vegetation, water, appearance, etc., by actions that involve people and organizations. **Landscape management strategies** can involve all types of landscape, such as formal gardens and parks, cultural landscapes, and even 'wilderness' landscapes. A specific technical knowledge and understanding of how to manage different landscapes, parks, gardens and their vegetation is needed. Landscape architects should be able to contribute to the **sustainable management** of natural resources, e.g. by consulting in processes of conflict management. In the context of urban landscapes, by contrast, special areas of knowledge and expertise are to be able to produce strategic plans for the establishment and improvement of green infrastructure in cities, towns, and villages. Goals are to contribute to optimise the appearance, use and management of open space. To make sound value judgements, for example during the assessment of management alternatives, it is necessary to be able to draw reference to

Aspect		*Explanation*
		existing legislation and guidelines, and to technical and other standards that reflect the state of the art and technology in the field. Planning, design and management also must consider the regional and local landscape identity that is based on joint values and cultures. Planning, design and management of landscapes must reflect on the principles of subsidiary and democracy. In management, the degree of detail and scale relates to the needs of national, regional and local standards of formal (comprehensive and sectoral) planning and to informal ways of planning, including the participation of local and regional interest groups and stakeholders *(ECLAS Guidance 2010*). The aim is to find responses to the following topics (*EU Teach 2010*): - Landscape characterisation, landscape restoration, rehabilitation and restitution; - Environmental goods and ecosystem services including landscape aesthetics and its role for recreation, environmental health and well-being; - Protection and development of nature, species, visual qualities, environmental protection; - Landscape functions (e.g. food production, leisure, recreation); - Conservation and enrichment of biological diversity, restoration ecology; - Planning, design (spatial changes, new landscapes, new landscape elements) and management of cultural landscapes (identification by Landscape Character Assessment); - Policies and laws of land-uses (e.g. forestry, agriculture, waste, fishing, tourism); - Environmental resource management (e.g. retention and management of surface waters). *Description of the aim based on the explanation in the ECLAS Guidance report (2010)*
11	**Planned LL learning outcomes**	The student demonstrates knowledge of: - the different types of management plans depending on time line, size, scale and typology of the project or area; - the role management has in the sustainable development of landscapes and the strategies that can be applied for this. - the various techniques for landscape management and maintenance. The student understands: - the interplay between politics, stakeholder and the role of landscape managers and consultants in developing management plans and proposals; - how to integrate sustainable development goals into landscape management; - how design and planning concepts can be translated into management policies; - the importance of the integral coherence of strategic, tactic and operational goals and measures in a plan; - how stakeholders and actors can be included in the process of landscape management.

Aspect		***Explanation***
		The student can: - describe, analyse and assess an area or site regarding management aspects with social, economic and environmental variables; - define goals for future development, and landscape quality objectives; - make sound landscape value judgements, e. g. by assessment of management scenarios alternatives; - ensure the planning and design goals are translated in a strategy and management plan integrating knowledge of architecture, engineering and artistic fields; make sure these are properly implemented and managed in time and space; - conceive alternative solutions of how a landscape might be managed, and to assess how these alternatives when implemented would meet goals and quality objectives; - define adequate management principles on the areas of different scope and scale; - forecast consequences of landscape change in time; - elaborate on the role of monitoring in landscape management; - prepare the management documents according to formal regulations.
12	**Context: Example(s) of a role**	Landscape Manager within a project team.
13	**Context: Example(s) of a situation**	A commissioner hands over a brief for a complex management issue in the landscape (for an area or for a site). The landscape manager should provide a management solution proposal for resolving this issue.
14	**Actions**	- Influencing the political and administrative agenda for outdoor space - Transferring the brief into a management task; placing the management task in a wider perspective of space and time. Methodical and process aspects are used to assess and adapt the management to the plan or design concept. Time aspects are development of patterns of land use, morphology types, development of infrastructure, phasing of the implementation, movement through space; - Planning and defining steps in one's own management process; - Communicating on the management and the process, within a team and with other disciplines; - Analysing, making use of GIS; - Preparing strategies and financial policies for outdoor space / landscapes - Strategic: implementing policy in plans for areas and themes - Tactical: drawing up management plans (with goals and guiding images for quality) and budgets - Operational: working plans, calculations for units; - Drawing requirements in (design and development) programs for the aspect of management (policy, budget, maintenance, use and technical aspects) - Benchmarking the specification plans and designs on the management requirement in every stage of development.

Aspect		*Explanation*
		- Drawing up a transfer document for management and maintenance (after the development cycle has been completed); - Drawing up communication plans (related to the planning cycle); - Coordinating participation; - Assist with monitoring quality by the public; - Making documents for contracts with contractors and other partners for consultancy and maintenance works; - Ensuring that the management goes in line with the planning and design concepts in a cultural context, national and international.
15	**Criteria for actions**	- Carry out the steps of the management process independently; - Select and apply the right methods and technique for each management phase: vision, management scenarios, zoning (functional, quality) plan, quality objectives for the area / site, guiding images, measures, activity planning, budget calculation, organisation of the management and the maintenance, monitoring and evaluation); - Communicating on a level of abstractness that relates to the step in the management process and parties involved (commissioner, other discipline, team member); - Making one's own management plan and process transparent; - Reflecting on one's own work; - Asking for feedback and give correct feedback to others; - Creativity in proposals and solutions; - Making effective use of references and sources of inspiration; - Awareness of cultural and professional context; - Guarding the integrity and continuity of the process; - Making effective use of means like drawing, reporting and multimedia; - Making clear management interventions; - To contribute as an individual to teamwork.
16	**Results**	- Management plan (e.g. for an implemented project or for a design); - Maps of management analysis for development of abiotic, biotic, land use and infrastructure, urban, social, spatial patterns; - Report on the analysis and report to explain the management processes and documents; - Presentation (poster, report, multimedia presentation).
17	**Criteria for results**	- Considering current guidelines, rules, legislation, policies; - Transparency of the data used for the management and adequate use of GIS; - Effectivity for the realisation of a planned and designed concept with an adequate spatial form; - The described management process should be transparent and verifiable; - The way the process and the content of the management is organized is

<table>
<tr><th colspan="2">Aspect</th><th>Explanation</th></tr>
<tr><td></td><td></td><td>transparent including alternatives, choices, spatial models, concept and management proposal;
- The results demonstrate that the student can carry out an empirical or site-oriented research based on verifiable data and that the student is able to transfer these effectively in the management process;
- The management proposals demonstrate the inclusiveness of the cultural, historical & spatial context;
- The management proposals contain a well-founded opinion that is translated in a clear strategy;
- The products demonstrate that the analysis has led to an understanding of the central issues by alternatives, variation in spatial form models, from which a management concept has been developed;
- The management proposal demonstrates an adequate integration of components and aspects (land use patterns, landscape layers, rural or urban context, ecology, community, economy, etcetera).
- The management proposal has been worked through in different timelines and levels of scale and is clearly presented by drawings, maps reports and references (images, situations, projects).</td></tr>
<tr><td>18</td><td>Suggested modules with ECTS</td><td>Module / Course — ECTS
Lectures: — 2
- Theory and methods of landscape management;
- Landscape management law and regulations (national, local);
- Sustainable management tools and implementation.
Project Studio: Landscape Management: Planning level — 5
Project Studio: Landscape Management: Site level; — 5
Study trip: Area analysis, meeting the residents, meeting the municipal authority — 2
Self-Study: Analysing references, case studies, legal and historical resources, sketching, drawing, model and draft preparation. — 3</td></tr>
<tr><td>19</td><td>Supporting courses</td><td>The following supporting courses can be offered:
- Urban infrastructure systems;
- Vegetation development, planting and LA material;
- SUDS;
- ICT tools for LA management.</td></tr>
<tr><td>20</td><td>References</td><td>Main references:
Carmona, M, C. de Magalhães, L. Hammond (eds). 2008. Public Space, The Management Dimension, Routledge
McHarg, Ian. 1971. Design with Nature. American Museum of Natural History
Taylor, K. & J. Lennon (eds). 2012. Managing Cultural Landscapes. Routledge
Yudelson Jerry. 2016. Reinventing Green Building. New Society Publishers. Gabriola Island BC Canada. ISBN 978-0-86573-855-9
European context (EU Teach 2010):
1. Policies in Europe concerning landscape and environmental values at present and in future (e.g. European agriculture policies, intensification of agriculture);
2. International and European approaches for spatial development and</td></tr>
</table>

Aspect		*Explanation*
		land use management like mono-/multifunctional landscapes; 3. European **planning instruments and tools** (e.g. environmental impact assessment EIA, strategic impact analysis SIA) and specific national instruments; 4. European categories of **protected areas and environmental networks** (NATURA 2000, other) 5. **Life Cycle Assessment LCA** and Life Cycle Costing LCC methods and tools for sustainable materials and solutions. EU Public Procurement Directive EC 2014/24/EU, Article 68. 6. Convention of **Biological Diversity** (Rio, 1992), Convention on the Conservation of Migratory Species of Wild Animals, CMS (Bonn, 1979), Convention of the Conversation of European Wildlife and Nature (Bern 1979)); *7.* European strategies/programmes to ensure and to foster **abiotic resources like water, climate, soil** (European Soil Charta (1972) / Convention on Wetlands of International Importance especially as Waterfowl Habitat. Ramsar (1971) European Climate Change Programme (ECCP)); 8. European strategies/programmes to ensure and to foster **landscape and cultural heritage** (e.g. European landscape convention (Florence, 2000), The Convention on the Protection of the Archaeological heritage of Europe, usually referred to as the Valletta Treaty or Malta Convention (1992)); 9. European strategies/programmes to ensure **nature protection via integrative strategies** (The Sixth Environment Action Programme of the European Community (2001-2012), Alpine convention (96/191/EG), The European Charter for Sustainable Tourism in Protected Areas); 10. Knowledge of landscape related strategies to implement a **sustainable spatial development** (e.g. European spatial development perspective (ESDP) and Territorial agenda of European Union (Leipzig, 2007)); 11. Thematic directives focusing on **environmental goods**: Habitats directive on the conservation of natural habitats and of wild fauna and flora (Council Directive 92/43/EEC (1992); Directive 2009/147/EC of the European Parliament and of the Council on the conservation of wild birds 2009 (SPA)), Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy; Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration; Thematic Strategy for Soil Protection [SEC(2006)620] [SEC(2006)1165]); 12. Instrumental directives focusing on the question how **to implement environmental standards** in the EU-states: Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment (EIA), European SEA Directive 2001/42/EC); *13.* Directives focusing on **utilisation and handling of risks and dangers**: Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks; Waste framework directive (2008/98/EC); Directive 2002/49/EC of the European Parliament and of the Council of 25 June 2002 relating to the assessment and management of environmental noise.

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C1 LL CARD: Urban Open Space Planning (and Policy)

Aspect			Explanation
1	**LL title**		**Urban open space Planning (and Policy)**
2	**Description**		This learning line relates to knowledge and understanding of the aspects, drivers and qualities of urban open spaces. It concerns: - Survey and analysis of urban open spaces - Aspects for planning, design and management of urban, peri-urban open spaces including: playgrounds, public and semi-public parks, school courtyards, pedestrian streets and zones, squares, water features, roof gardens, office (corporate) gardens, university campuses, hospital grounds, cemeteries, docks, transport corridors. golf courses, etc. - Drawing up policies or green structure plans - Ability to use and apply knowledge of different disciplinary: urban development, water management, noise management, plant ecology etc. The competences for design, planning and management of urban open space are defined in the associated subject specific competences.
3	**Competence(s) developed**		Associated subject specific competences: B1, B2 and B3. Generic competences: INS.1 Capacity for analysis and synthesis; INS.2 Capacity for organization and planning; INS.3. Ability to manage public participation INS. 5. Spatial (3 dimensional) thinking; Ability to take the dimension of time into account; INS.6. Visual, oral and written communication; INS.8. Elementary computing skills INS.9. Information management skills INS.10. Problem solving; Ability in negotiating, moderation and conflict management INS.11. Decision making INS.12. Ability to understand complex and dynamic systems INS.13 Dealing with complexity and ability to think and act in an integrated and holistic way INT.1. Capacity for critical interpretation and appreciation; INT.5. Ability to work in an interdisciplinary team; INT.6 Ability to communicate with experts in other fields; SYS.3. Capacity to learn
4	**Language of instruction**		***English***
5	**LL code**		**EU-LAND21-C1**
6	**European Qualifications Framework level**		6: First cycle – Bachelor
7	**Levels**	**Basic**	The student demonstrates knowledge of: - basics of urban ecology, benefits and functions of urban open spaces; - open spaces, open space typology, basics of green infrastructure - basic European and exemplarily national standards for parks, squares,

Aspect			Explanation
			green in residential areas, playgrounds/ building recommendations concerning density, volumes, distribution and aesthetic rules; - contemporary challenges for participation of residents and other stakeholders; - maintenance requirements of open spaces; - basics of urban planning, urban development. The student can: - after instruction by a tutor make analysis for a selected area of urban open spaces; - when given a vision for the design, draft a preliminary plan.
		Inter-mediate	The student demonstrates knowledge of: - general aspects of design of different types of urban open spaces; - how public participation and democracy are related. - contemporary democracy challenges in the context of landscape planning and urban design change and of the challenges of a 'right to landscape' approach. - current development of urban open space planning. The student can: - comprehensively understand a certain site from a designer point of view (conditions, functions, connections) and after instructions by a teacher assess the challenges and opportunities of the ecological and natural quality and social and economic needs in an area and to represent these on thematic maps. - Select the most adequate methods and tools to be applied in specific challenges requiring participatory processes. - Apply common communication tools supporting participatory processes as well as different examples of participatory processes and how methods and tools are applied in practice. - based on a design vision for a spatial plan in an urban or rural environment draft a preliminary plan and elaborate this in a set of detailed schemes, considering the aspects of management and the biotic and abiotic factors of the area.
		Advanced	The student demonstrates knowledge of: a. topics related to sustainable development of cities/towns/villages (e.g. green infrastructure, biodiversity and drain water) including social cohesion, urban development; b. history, current development, and design, of urban open space planning. The student can: a. make a spatial and functional analysis of an area to plan and design a green structure plan of an area (urban or rural) considering aspects of sustainability, finances, management and based on aesthetic, functional, environmental, and ecological factors; b. Select the most adequate methods and tools to be applied in specific challenges requiring participatory processes. c. Apply common communication tools supporting participatory processes as well as different examples of participatory processes and how methods and tools are applied in practice. d. create detailed schemes for different types of urban open spaces.
		Master	In addition to advanced. The student can: - make an integral analysis of urban open space systems considering the various driving forces and the development over time; - propose innovative solutions for the sustainable development of urban open space.

Aspect		Explanation
8	**ECTS credits**	This competence requires 6% of the programme, 11-16 ECTS.
9	**LL Annotation**	National and European environmental policies are increasingly recognizing the importance of attractive and sustainable urban and peri-urban spaces for improving the quality of life of urban citizens and attracting jobs, investment and tourism. It is important to plan a strategic network of open spaces as urban open spaces, which do not include just parks and gardens, but encompasses the whole continuous network of un-built land within urban areas. The well-established network of urban open spaces has wide range of positive effects: abating the urban heat island effect; regulating the water balance, reducing loads on the drainage system; moderating impacts of noise and pollution and providing habitats for native plants and animals. Furthermore, open spaces have positive physical and psychological impact on the health, and well-being of urban residents. One of the most important challenge to be met in urban open space design is to harmonize all the requirements of ecology and the environment, with the needs of varied user groups. Good urban spaces can perform wide range of important functions for different groups of community. Good open spaces supposed to be living 'places' with their own identity; carriers of the values of all groups of users, creating the 'sense of place'. Important guideline shall be in open space design: "Design for All"- fulfilling the needs of various social groups and requirements of people with disabilities. *(source: http://ln-institute.org/urban-spaces/urban-spaces.php?mode=elearning_home)*
10	**Aim of the LL**	After completing this learning line one should be able to conceive ideas for the future (physical) alteration of a site, landscape element or area in the urban environment. The goal is to develop adequate knowledge and understanding to define driving forces, understand the planning process and decide on alternatives and the implementation of a preferred design solution by providing specifications that are the basis for construction. To use one's knowledge of urban open space in making proposals for the long-term development of urban landscapes, sites and areas.
11	**Planned LL learning outcomes**	The student demonstrates knowledge of: - a variety of facets of sustainable development that involve urban open space (e.g. water management and flood control, management for adapting to climate change, providing for human health and well-being, urban nature conservation, environmental education, protecting cultural and natural heritage, providing the infrastructure for sustainable transport modes, contributing to energy conservation within the urban system, place making, supporting social cohesion, preserving identity). - contemporary democracy challenges in the context of landscape planning and urban design change and of the challenges of a 'right to landscape' approach. The student understands: - how ideas for the future (physical) alteration of urban open spaces can be integrated in the design process and how these interact with social needs and opportunities; - how public participation and democracy are related. The student can: - choose between alternatives; - select the most adequate methods and tools to be applied in specific challenges requiring participatory processes. - apply common communication tools supporting participatory processes as well as different examples of participatory processes and how methods

Aspect		Explanation
		and tools are applied in practice. - integrate his/her knowledge and understanding of urban open space in designs, strategic plans, management plans and detailed schemes.
12	**Context: Example(s) of a role**	Designer of urban open spaces
13	**Context: Example(s) of a situation**	- Staff member of a local government in the department for green areas and parks; - Advisor in an office for landscape consultancy; - Independent landscape designer. A commissioner hands over a problem statement for a complex spatial issue related to an urban area. The designer/advisor provides a spatial plan (project) for this.
14	**Actions**	- Planning and defining steps in one's own design or planning process. - Communicating on the design and the process, within the design team and all other stakeholders. - Inventory and analysis (spatial, functional, socio-cultural, rules and regulations) and making plans in such a way that it leads to a concept and an adequate spatial (3D) form. The process of planning should be transparent and verifiable. - Integrating the analysis and developing a design concept/spatial model. - Defining the scale and the context of the design. - Improving the design / cross scale feedback. - Embedding the design in a cultural context. - Presenting intermediate results and the final product (models, graphics, text, visualization, and multimedia, oral). - Benchmarking the plan and draw up the management requirement in every stage of development. - Drawing up communication plans (related to the planning cycle) - Coordinating participation.
15	**Criteria for actions**	- Working in a systematic, verifiable way and making use of the correct references and literature. - Addressing the goals set in the framework set by policy and spatial plan. - Independently carry out the steps of the analysis and design process. - Select and apply the right methods and techniques for each phase of the process. - Communication on a level of abstraction and detail that relates to the step in the design process and parties involved. - Making the design process transparent. - Asking for feedback and give correct feedback to others. - Creativity. - Being aware of cultural and professional context. - Contributing as an individual to teamwork. - Discussing the design solutions and the design principles
16	**Results**	- Policy or vision for urban open space; - Plan or design with 3D model, animation; - Process document; - Maintenance plan for urban open space.
17	**Criteria for results**	- Correct and complete use of data. - Meeting architectural standards of composition, organization, form and other esthetical aspects. - The plan demonstrates the relation with the cultural, historical, ecological and spatial context. - The plan expresses a well-founded position. - The products demonstrate that the analysis has led to an understanding of the central issues through the articulation of alternatives, from which a

<table>
<tr><th colspan="2">Aspect</th><th colspan="2">Explanation</th></tr>
<tr><td></td><td></td><td colspan="2">design has been developed.
- The plan has been worked through in different levels of scale and is presented by the relevant presentation techniques.
- The plan and the realization fulfil the requirements of environmental, economic sustainability and is taking into consideration of various groups of the society, disabled people
- Appropriate maintenance</td></tr>
<tr><td rowspan="5">18</td><td rowspan="5">Suggested modules with ECTS</td><td>Module/ course</td><td>ECTS</td></tr>
<tr><td>Study trip: examples of urban open spaces, analysis of best practices, data collection</td><td>2</td></tr>
<tr><td>Lectures and Seminars: Design theory and principles of urban open spaces</td><td>4</td></tr>
<tr><td>Studio: Open space design</td><td>8</td></tr>
<tr><td>Workshop: Design an urban open space for a competition</td><td>2</td></tr>
<tr><td>19</td><td>Supporting courses</td><td colspan="2">Botany, Dendrology, Geology and Soil science, Management of green areas, Freehand Drawing, Materials and Open Space Construction, Urban Planning and Design</td></tr>
<tr><td>20</td><td>References</td><td colspan="2">Arefi, M. 2014. Deconstructing Placemaking; Needs, Opportunities, and Assets. Routledge
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Woolley, H. 2004. Urban Open Spaces. Taylor & Francis</td></tr>
</table>

TRANS-EUROPEAN EDUCATION FOR LANDSCAPE ARCHITECTS

EU-LAND21 Nº 2016-1-LT01-KA203-0232019

C2 LL CARD: Interpretation and Conservation/Management of Cultural Landscapes

Aspect		*Explanation*
1	**Name of the Learning Line**	**Interpretation and Conservation / Management of Cultural Landscapes**
2	**Description**	As planners landscape architects are concerned with strategic policy proposals for the sustainable use and management of cultural landscapes. Design competences (see LL B1) are applied to produce detailed proposals for developing and managing individual landscapes such as historic parks, or landscape elements such as hedgerows or ponds. Policy proposals (LL B2) are generally made at regional and at district scales, while design and management proposals are made at local and site scales. Understanding cultural landscapes provides the basis for considering the suitability of future land uses, for planning new interventions (e.g. infrastructure projects), for creating and managing landscapes for their special significance and identity, and for designing management regimes and measures for landscape conservation. The history of the development of 'vernacular' cultural landscapes provides and important background to consciously design symbolic landscapes that can be properly understood. One important focus of planning for cultural landscapes is to provide strategies for leisure, recreation, environmental learning, and other activities. In addition, landscape architects are concerned with a variety of facets of sustainable development that involve cultural landscapes. Examples are water and flood risk management, management for adapting to climate change, strategies for nature conservation, protecting cultural and natural heritage, preserving identity and strengthening image, and many more. For these it is necessary to be able to assess the sensitivity and capacity of the landscape for these types of development. For theory building an important focus is to study the history and development of cultural landscapes in a European and international context. Studies of traditions and trends include both the conceptualization of ideas and the implementation and long-term management of cultural landscapes in practice. This learning line concerns: - Survey and inventory of cultural landscapes - Preparation of landscape character assessments - Incorporating values according to the views of the public. - Definition of valuable landscapes and landscapes worthy of special protection - Formulation of planning, design and management guidelines at regional and district scales. - Formulation of management and restoration plans for historic landscapes (in combination with LL B3). The competences for design, planning and management are defined in the associated subject specific competences.
3	**Competence(s)**	Associated subject specific competences: B1, B2, B3 Generic competences:

Aspect			***Explanation***
	developed		INS.1. Capacity of analysis and synthesis INS.2. Capacity for organisation and planning INS.5. Grounding in basic knowledge of the profession: Spatial (3D) thinking; Ability to take the dimension of time into account INS.6. Visual, oral and written communication INS.9. Information management skills INS.12. Ability to understand complex and dynamic systems INT.5. Ability to work in an interdisciplinary team INT.6. Ability to communicate with experts in other fields INT.7. Appreciation of natural diversity and multiculturality / Understanding the cultural environment SYS.3. Capacity to learn
4	**Language of instruction**		***English***
5	**LL code**		**EU-LAND21-C2**
6	**European Qualifications Framework level**		6: First cycle – Bachelor
7	**Levels**	**Basic**	The student understands the nature of cultural landscapes and is familiar with the content of the European Landscape Convention. The student can: - collect and analyse map and site survey information at a local scale; - draw up a basic management plan for a local area.
		Inter-mediate	The student can: - take existing map and other data provided by third parties and use it to compile map layers; - undertake field work including field sketching to capture the character of the landscape; - carry out an inventory of a historic landscape and prepare a report about it; - formulate proposals for protection, restoration of management of a historic landscape.
		Advanced	The student understands the scope and content of the European Landscape Convention and its application in the legal framework and landscape planning and protection policies of the country. The student can: - identify and compile good-quality data from a range of sources and organise it into a series of map layers and associated information (reports etc) at a common scale; - apply the process of landscape character assessment to identify units of consistent character and to describe the key characteristics (physical, sensory), assess the condition and forces for change in each landscape unit; - apply the concept of landscape character, ecological and visual sensitivity to the given landscape; - describe the landscape of each unit using common terminology, illustrated with sketches and other illustrations; - present, discuss and modify initial mapped landscape units with local

Aspect			*Explanation*
			stakeholders and to identify and evaluate important units deserving of protection or special status and management; - formulate a policy/strategy and a management plan for the landscape.
		Master	In addition to the advanced level. The student can: - develop methods for assessment and new innovative approaches for the conservation and development of cultural landscapes; - integrate approaches from various disciplines for conservation and development of cultural landscapes and sites into an innovative landscape approach.
8	**ECTS credits**		This competence requires 6% of the programme, 11 -16 ECTS.
9	**Annotations**		Every landscape that is not natural is a cultural landscape. At the same time, a 'Cultural Landscape' is usually thought of one with special cultural values. Therefore, to define and analyse a Cultural Landscape, it is important to understand how values are attached to landscapes. On the one hand one must be able to analyse the history and development of landscapes and, on the other hand, to investigate the cultural meanings they are associated with. Landscape architecture approaches for cultural landscapes include designed landscapes such as parks and gardens, "historic" cultural landscapes (these are landscapes that depend on historic forms of land use), and others. Consideration should be given to the cultural meanings, and how landscape identification has changed over time. An important analytical method is Landscape Character Assessment, LCA. As an 'expert' tool LCA is applied to identify landscape character that is the result of natural and cultural landscape processes within a defined geographical area. This approach contrasts with bottom-up approaches that aim to cultivate awareness and appreciation of 'local distinctiveness' and the factors which make local landscapes unique on the part of local people and to celebrate this distinctiveness. Landscape architects must be able to understand cultural landscapes both on maps and in the field and to recognise and interpret the layers of historic traces which they contain. They should also, however, be able to work with local people through forms of public participation to help them to identify what is special and typical about their local landscape. Interpretative skills are needed to present and explain the significance of historic layers and special identities to politicians and to interested parties.
10	**Aim of the LL**		The competence for cultural landscapes implies reference making to consider (historic and contemporary) examples of cultural landscapes as well as individual case studies. Skills that are developed are to evaluate existing methods, approaches and examples, to draw conclusions for future action in developing cultural landscapes, and to make proposals for new management concepts. Moreover, the ability to consider the policy context of the development of cultural landscapes. This includes implications of international, national and local policies that relate to social, environmental and aesthetic aspects of cultural landscapes. The respective international (UNESCO and Council of Europe and European Union), national and local legal frameworks should be understood, as well as their shortcoming when it comes to dealing with issues associated with the conservation and development of the cultural landscape.

Aspect		*Explanation*
11	**Planned LL learning outcomes**	The student demonstrates knowledge of: - the nature of cultural landscapes, different concepts of heritage and is familiar with the content of the European Landscape Convention and UNESCO Guidelines on World Heritage Cultural Landscapes; - the range of cultural landscapes in rural and urban areas, ranging from historic sites and landscapes to the more recent types of cultural sites and landscapes such as modernist areas; - methods for assessing the values and character of cultural sites and landscapes; - strategies for conservation and development of cultural landscapes. The student understands: - the scope and content of the European Landscape Convention and its application in the legal framework and landscape planning and protection policies of the country; - the interplay between conservation and development, integrating new functions for sustainable development of sites and landscapes. The student can: - identify and compile good-quality data from a range of sources and organise it into a series of map layers and associated information (reports etc.) at a common scale; - apply the process of landscape character assessment to identify units of consistent character and to describe the key characteristics (physical, sensory), assess the condition and forces for change in each landscape unit; - apply the concept of landscape character, ecological and visual sensitivity to the given landscape; - describe the landscape of each unit using common terminology, illustrated with sketches, other illustrations and narratives; - present, discuss and modify initial mapped landscape units and elements with local stakeholders and to identify and evaluate important units deserving of protection or special status and management; - formulate a policy/strategy and a management plan for the landscape; - carry out an inventory of a historic landscape and prepare a report on it; - formulate proposals for protection, restoration, development or management of a historic or heritage landscape.
12	**Context: Example(s) of a role**	Member of a team that prepares landscape character assessments and landscape sensitivity and capacity studies; who works on landscape and visual impact assessment of large developments
13	**Context: Example(s) of a situation**	Planner in an office for landscape consultancy.
14	**Actions**	- Making surveys and analysis of existing landscape planning documents; - Collecting data in map and report form from a range of sources and organisations; - Applying LCA or other methodology to define landscape units (desk study);

Aspect		*Explanation*	
		- Undertaking field survey to check and modify the desk study, to make field sketches and collect other information; - Discuss with residents and stakeholders their perceptions and values of the landscape and to identify special qualities recognised by local people for incorporation in the final work; - Formulate and apply systems for sensitivity analysis of the landscape; - Write up a report and present it to stakeholders in an attractive and accessible format.	
15	**Criteria for actions**	- Making use of up to date and reliable documents and data sources; - Creating a set of map layers of consistent scale for all geophysical, ecological and cultural aspects needed for LCA; - Working in a systematic, verifiable way and making use of the correct references and literature; - Making representative and accurate field sketches and organising field work in a logical and informative way; - Discussing the developing work in meetings and incorporating the results in a transparent way; - Preparing good quality materials.	
16	**Results**	- The output presents a report for the client accompanied by sets of maps, different expected content for different levels.	
17	**Criteria for results**	- Correct and complete use of data, information and knowledge; - Adherence to local landscape planning and protection policies. - Incorporation of results of public consultation/participation; - Producing innovative proposals that combine conservation with integral solutions for current and future functions and new development; - Policies and management plans are coherent and convincing and provide clear guidelines on a structural level.	
18	**Suggested modules with ECTS**	Course / module	ECTS
		Study of a local landscape area: e.g. a village and its surroundings, mapping, sketching and inventory	2
		Project: data gathering and analysis from a range of sources, mapping and evaluation	6
		Project: Landscape character analysis of a district with a sensitivity and capacity study for specific forms of development	8
19	**Supporting courses**	*PM*	
20	**References**	Bell, S. 2004. Elements of Visual Design in the Landscape (2nd Edition) Taylor and Francis, London Bell, S. 2012. Landscape: Pattern, Perception and Process. 2nd Edition Routledge Countryside Agency/SNH. 2002. Landscape Character Assessment Guidance for England and Scotland European Environment Agency, 2010. Ten messages for 2010, Cultural landscapes and biodiversity heritage. ISBN 978-92-9213-147-0 Harney, M (Ed), 2014. Gardens & Landscapes in Historic Building Conservation, Wiley & Sons. Hernik J., 2012. Protecting cultural landscapes in rural areas by economic	

Aspect		***Explanation***
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C3 LL CARD: Conservation / Management of Parks and Gardens

Aspect		*Explanation*
1	**LL title**	***Conservation / Management of Parks and Gardens***
	Description	Planning for parks and gardens is closely connected with landscape architecture and connects all the problems of arranging and organizing space. Much of their shape and style are influenced by regional and local conditions related to the tradition of the place. Other important factors are: existing landscape, soil, climate, fauna and flora. Differences can be seen in the design of parks and gardens in urban tissue, in suburbs of cities or in rural areas. One of the tasks is to formulate a design concept and to adjust selected elements of garden architecture to functional and compositional solutions. To customize the abstract model of the landscaped to the actual design concept. Applying the knowledge of ecology, nature, vegetation and planting of parks and gardens. The learning line relates to: - Preparation for designing of gardens and parks. - Recognize and incorporate in projects specific garden styles. - Carry out project analysis including the preferences of various user groups and stakeholders - Formulation of design guidelines. - Designing green areas and architectural elements considering historical and contemporary design styles. The competences for design, planning and management are defined in the associated subject specific competences.
2	**Competence(s) developed**	Associated subject specific competences: B1, B2, B3, C1, C3 Generic competences: INS.1. Capacity of analysis and synthesis INS.2. Capacity for organisation and planning INS.5. Grounding in basic knowledge of the profession: Spatial (3D) thinking; Ability to take the dimension of time into account INS.6. Visual, oral and written communication INS.9. Information management skills INS.12. Ability to understand complex and dynamic systems INT.5. Ability to work in an interdisciplinary team INT.6. Ability to communicate with experts in other fields INT.7. Appreciation of natural diversity and multiculturality / Understanding the cultural environment SYS.3. Capacity to learn
3	**Language of instruction**	*Dutch - **English** – Estonian – Hungarian - Lithuanian – Polish.*

4	**LL code**		**EU-Land21 - C3**
5	**European Qualifications Framework level**		6: First cycle – Bachelor
6	**Levels**	**Basic**	Student has a basic knowledge of: - the function, values, meanings of parks and gardens; - iconic garden and park designs; - the process of garden design and design of parks; - the range of garden styles; - works in the field and obtain relevant data required in the project; - the aspects of dendrological, architectural inventories; - in the case of the revitalization of parks and gardens can perform a historical-composition stage; - can get information to the projected design strategy.
		Inter-mediate	The student demonstrates knowledge of: - vegetation and plants which are specific for parks and gardens with their requirements, functional and decorative characteristics and their application. - materials and constructions which are specific for gardens and parks. The student can: - plan and carry out a survey (on site) necessary for the implementation of a landscape architecture facility; - choose the right materials and technology in the design and implementation of landscape; - apply acquired knowledge about natural, cultural, social, economic and legal conditions in the process of programming and designing landscape architectural objects; - apply rules of composing space on different scales; - prepare design documentation in accordance with formal requirements. - identify problems of preservation and apply appropriate methods of care and maintenance of the landscape architecture; - interpret the records of planning documents at the local level to the extent necessary to set guidelines for the development of the land development project; - search, understand, analyse and use information sources available in a variety of formats; - communicate analytical knowledge in a verbal, descriptive and graphical manner, synthesize information and present a design idea.
		Advanced	The student demonstrates knowledge of the legal bases of conservation and restoration of historic gardens / parks, the methods of testing historic gardens, the pragmatics of restoration measures in relation to garden structures. The student can use a variety of techniques to communicate with users of landscaping facilities, local authorities, stakeholders and investors.
		Master	In addition to the advanced level. The student can: - develop innovative approaches to the planning and management of parks and gardens;

			- integrate his/her research outcomes into planning, design and management of parks and gardens.
7	**ECTS credits**		This competence requires 6% of study programme, 11-16 ECTS
8	**Annotation**		This learning line defines competences that are related to the broader context of the politics, philosophy, art, architecture, urban design and cultural landscape development that shaped parks and gardens. To develop and preserve this knowledge, and the examples that contain such knowledge, provide important reference for contemporary and future thinking and action. The eras to be included begin with the origins of garden art (paradise garden, the Arcadian landscape, etc.) and Classical gardens and landscapes (Greece and Rome), consider Medieval, Renaissance and Baroque gardens and landscapes, as well as all phases of the development of the so called 'landscape garden' (Classic, Romantic), leading to more recent and contemporary project types, such municipal public parks (and the Volkspark Movement), Arts and Crafts and Art Nouveau movements, modernist parks and gardens, "Ecological" parks and gardens (Naturgärten), Postmodernism, World fairs, Garden shows, Regional Parks and Theme parks. During all epochs of human history landscapes have evolved, not as products of deliberate design, but as a result of the "action and interaction of nature and culture" (ELC). These "evolved" landscapes cover most of the world's territory; they are "cultural landscapes" (see below) that are as symptomatic of the political, philosophical and technological character of an era as designed landscapes are. Every one of the design eras and landscape epochs are represented, in an almost iconographic way, by certain people who represent ideas, paradigms, methods and technologies (patrons, thinkers, planners, designers, etc.). These people represent milestones of the development of the landscape architecture as a field and as a profession.
9	**Aim of the LL**		The aim of this learning line is to provide students with adequate knowledge and understanding of the historic, social, environmental and economic values, meanings, functions of parks and gardens and how to integrate and apply this knowledge in planning, design and management of these.
10	**Planned LL learning outcomes**		The student demonstrates knowledge of: - vegetation and plants which are specific for parks and gardens with their requirements, functional and decorative characteristics and their application. - materials and constructions which are specific for gardens and parks. The student can: - plan and carry out a survey (on site) necessary for the implementation of a landscape architecture facility; - choose the right materials and technology in the design and implementation of landscape; - apply acquired knowledge about natural, cultural, social, economic and legal conditions in the process of programming and designing landscape architectural objects; - apply rules of composing space on different scales; - prepare design documentation in accordance with formal requirements. - identify problems of preservation and apply appropriate methods of care and maintenance of the landscape architecture;

		- interpret the records of planning documents at the local level to the extent necessary to set guidelines for the development of the land development project; - can search, understand, analyse and use information sources available in a variety of formats; - can communicate analytical knowledge in a verbal, descriptive and graphical manner, synthesize information and present a design idea.	
11	**Context: example of role(s)**	- An office worker dealing with parks and gardens - Designer of contemporary gardens - Designer of historic gardens - City planning consultant	
12	**Context: Example of situation(s)**	- Working as an external advisor for a local authority - Working as a civil servant at a planning and management department of a local authority - Working at an NGO that specialises in the conservation and development of gardens and parks.	
13	**Actions**	- Co-operation in the project group; - Field analyses; - Inventories; - Design Guidelines; - Historical-Composition Stadium.	
14	**Criteria for actions**	- Ability to work in a group; - Knowledge of the design and selection of plant species; - Ability to work in the field.	
15	**Results**	- Inventory of current status; - Study of historical composition of the garden / park; - Project guidelines (considering the needs of the residents); - Preliminary cost estimate of the project; - Garden / park design.	
16	**Criteria for results**	- Proper interpretation of data; - Adequate implementation of knowledge on design principles; - Ability to work with authorities and residents; - Proper analysis of the existing and historic situation, landscape context and conditions for designed solutions.	
17	**Suggested modules with ECTS**	Design / Studio: Garden and Park design Workshop: Meetings with investors, exhibition of conceptual projects and discussion on them. Study trip: inventory, meetings with investors, conversation with the inhabitants Self-Study: analysis of documentation, historical context	8 2 2 4
19	**Supporting courses**	Dendrology, Graphic Design, Social Participation, Small Architecture Design, Hand Drawing, History of Gardens	
20	**References**	Adams, William Howard: Nature perfected: Gardens through history. 1991. New York; London; Abbeville Press, Paris Alexander, R. & R. Myer, Essential Garden Design Workbook	

		Brickell, Ch. (Editor in Chief). 2008.Essential Garden Planning and construction, Royal Horticultural Society Brookes, John. 2001. Garden Design Clifford, Derek. 1962. A history of garden design. Faber and Faber, London; German edition: Geschichte der Gartenkunst, transl. by Hubert Klemke, ed. and extended by Heinz Biehn. 1966. Prestel Verlag, München Harney, M (Ed), 2014. Gardens & Landscapes in Historic Building Conservation, Wiley & Sons. Hobhouse, P. The story of gardening. Hobhouse, Penelope. 2004. Plants in garden history: an illustrated history of plants and their influences on garden styles - from ancient Egypt to the present day. Pavilion, London; German edition: Illustrierte Geschichte der Gartenpflanzen vom Alten Ägypten bis heute, transl. by Maria Gurlitt-Sartori und Christiane Bergfeld. 1999.: Scherz, Bern; München; Wien Hobhouse, Penelope, Taylor, Patrick (ed.), 1990. The Gardens of Europe. George Philip Limited, London; German edition: Gärten in Europa. 1992. Führer zu 727 Gärten und Parkanlagen. Ulmer, Stuttgart Hunt, John Dixon, Gardens and the Picturesque. 1992. Studies in the History of Landscape Architecture. MIT Press, Cambridge, Massachusetts-London Moe, Dagfinn, Dickson, James, Jorgensen, Per (Ed.), 1994. Garden History: Garden Plants, Species, Forms and Varieties from Pompeii to 1800. Pact Belgium, Rixensart

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C4 LL CARD: Planning/Design for Infrastructural Projects (and Landscape Impacts)

Aspect		*Explanation*
1	**LL title**	Planning/Design for Infrastructural Projects (and Landscape Impacts)
2	**Description**	This learning line focuses on the landscape aspects of infrastructural planning. It concerns activities such as: - drawing up plans for Infrastructural Projects in the landscape; - drawing up a landscape-impact plan where-in assessing Landscape-characteristics and the impact of technical infrastructure projects on the landscape; - managing the process of optimisation of interplay between infrastructural projects and landscape and minimising the negative impacts on the landscape. The competences for design, planning and management are defined in the associated subject specific competences.
3	**Competence(s) developed,**	Associated subject specific competences: A1, B1, B2, C1, C2, D1 Associated generic competences: INS.1. Capacity of analysis and synthesis INS.2. Capacity for organisation and planning INS.3. Ability to manage public participation INS.5. Grounding in basic knowledge of the profession: Spatial (3D) thinking; Ability to take the dimension of time into account INS.6. Visual, oral and written communication INS.10. Problem solving; Ability in negotiating, moderation and conflict management INS.11. Decision making INS.12. Ability to understand complex and dynamic systems INS.13 Dealing with complexity and ability to think and act in an integrated and holistic way INT.4. Interpersonal skills INT.5. Ability to work in an interdisciplinary team INT.6. Ability to communicate with experts in other fields INT.7. Appreciation of natural diversity and multiculturality / Understanding the cultural environment SYS.3. Capacity to learn SYS.9 Project design and management SYS.11 Concern for quality
4	**Language of instruction**	***English***
5	**LL code**	**EU-LAND21-C4**
6	**European**	6: First cycle – Bachelor

Aspect			*Explanation*
	Qualifications Framework level		
7	**Levels**	**Basic**	The student demonstrates knowledge of: - planning and design of different types of infrastructural projects as part of landscape design; - plan impact assessment methods. The student can: - propose measures for landscape mitigation and compensation.
		Intermediate	The student can: - integrate different types of Infrastructural projects into landscape planning schemes and landscape designs; - use an assessment method in assessing infrastructural projects; - draw up proposals for the optimisation of infrastructural projects as a result of landscape impact assessment.
		Advanced	The student demonstrates knowledge of: - new technologies and new legislation in infrastructural planning; - new technologies in landscape-assessment (GIS). The student can: - manage the design process, the different assessment methods and the optimisation of infrastructural projects.
		Master	In addition to the advanced level. The student can: - develop innovative approaches to the planning of infrastructure; - integrate his/her research outcomes into planning and design of infrastructure.
8	**ECTS credits**		This competence requires 6% of the programme, 11-16 ECTS.
9	**LL Annotation**		This learning line addresses the planning, design and management of landscapes that are part of, or affected by infrastructure projects. These landscapes include large-scale developments in rural areas, large scale industrial projects, large scale agriculture, forestry and land development projects (amelioration, reform), transportation projects (canals, road and rail, ports and airports), water and flood risk management (ground water mining, municipal waste treatment, reservoirs and dams, river regulation and engineering), coastal protection works, large-scale power and energy developments (e.g. power stations, wind farms, power transmitters, etc.), quarrying and mineral extraction projects, landfill and waste disposal site. On the other hand, restoration of derelict land and the rehabilitation of old industrial and other disused areas are also included. An important focus is on integrating large scale engineering projects into an existing landscape; this includes the mitigation of and compensation for environmental impacts (e.g. habitat connectivity for migrating fauna). Measures for mitigation and compensation of environmental impacts include the establishment of vegetation (e.g. for mitigating visual effects, to encourage wildlife, for erosion control, etc.), the change of land form (e.g. for noise control, visual screening, to provide drainage, etc.), the retention and management of surface water, and others. The location and planning of large infrastructure projects relates closely to

Aspect		*Explanation*
		Strategic Environmental Assessment and to Environmental Impact Assessment (within the context of relevant EU Directives. Design competences are applied to produce (strategic) scenarios at regional scale and, at site scale, detailed proposals for developing "Infrastructure Landscapes". Policy proposals are generally made at regional scales (e.g. alignment of transportation corridors and habitat networks) and at the same scales that the engineering projects are planned (e.g. impact mitigation plans). Design proposals are made at project scale and at scales for detailing specific sections (e.g. a dam, a road intersection, a bridge, etc.). By planning and designing infrastructure projects landscape architects must consider natural resources (as specified by European environmental policy and law) and landscape functions, such as food production, leisure and recreation, and other landscape related activities. Other considerations may include nature conservation, environmental education, protecting cultural and natural heritage, preserving regional identity and strengthening landscape character and image, and many more. Analytical methods must be applied that are able to demonstrate the effects infrastructure projects have on natural factors and resources as well as on landscape functions and landscape related activities (Examples: the so called Environmental Risk Assessment tool, visual landscape analysis)
10	**Aim of the LL**	The aim of this learning line is to provide the students with adequate knowledge, understanding and skills in the field of infrastructural projects and their interaction with the landscape.
11	**Planned LL learning outcomes**	The student demonstrates knowledge of: - the different types of infrastructural projects and their interactions with the landscape; - the different impact assessment tools, procedures and the legal framework; - the different possibilities for minimizing negative impact of infrastructural projects on the landscape. The student understands: - the specific role and importance of landscape-architects in the context of infrastructural projects; - the role and importance of plan assessment. The student can: - design infrastructural projects in the context of the landscape - to manage the process of assessing projects; - optimize the interplay between infrastructural projects and the landscape; - minimize the negative impact of Infrastructural projects on the landscape.
12	**Context: Example(s) of a role**	Act as a team member (Landscape-Architect) working on infrastructural projects
13	**Context: Example(s) of a situation**	- Staff member of a local government in the department for green areas and parks; - Employee in an office for landscape design/consultancy;
14	**Actions**	- Drawing up a design for technical infrastructural projects integrated into the landscape. - Assessing the impact of the infrastructure project on the landscape - Resulting in a set of mitigation and compensation measures.
15	**Criteria for actions**	- Applying principles of project-based working in planning and execution; - Making use of current techniques of assessment methods;

Aspect		*Explanation*	
		- Showing insight into impact of the infrastructure on the landscape.	
16	**Results**	- Design for infrastructure in the landscape; - Assessment of the impact of the project on the landscape; - Proposals for design solutions, mitigation measures and compensation measures.	
17	**Criteria for results**	- Adequate use of the assessment method; - Correct use of (professional) language, both oral as written; - Insight in the quality of work.	
18	**Suggested modules with ECTS**	Module / course	ECTS
		Design of Infrastructural Projects, basic information and skills	*5*
		Plan Impact assessment, methods and new trends	5
		Infrastructural Project Studio, applying knowledge and skills	6
19	**Supporting courses**	Civil Engineering, Landscape Design, Laws and regulations.	
20	**References**	Glasson, J. & R. Therivel. 2012. Introduction to Environmental Impact Assessment, 4th Edition, Routledge Piek, M. Sorel, N. and M. van Middelkoop. 2011. Preserving panoramic views along motorways through policy p. 261, in: Nijhuis, S., R. van Lammeren and F. van der Hoeven (eds). 2011. Exploring the Visual landscape. Advances in Physiognomic LandscapeResearch in the Netherlands. Research in Urbanism Series (RiUS), Volume 2. IOS Press, ISSN 1875-0192 (print), ISSN 1879-8217 (online) Sadler. B. 2011. Handbook of Strategic Environmental Assessment. Routledge Sadler, B. & J. Dusik (eds). 2016. European and International Experiences of Strategic Environmental Assessment; Recent progress and future prospects. Routledge. Weston, J. 1997. Planning and Environmental Impact Assessment in Practice. Routledge.	

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Erasmus+

D1 LL CARD: Materials and Construction Techniques

Aspect		*Explanation*
1	**LL title**	**Materials and Construction Techniques**
2	**Description**	This learning line relates to the competences that are relevant for constructing, implementing and realising a landscape plan or project. It comprises activities such as: - Making of a technical planning drawings and documents - Organising the landscape construction process: feasibility studies until surveying the realisation of the project. - Making technical solutions considering the design concept and the desired spatial quality. - Understanding the tendering, contracting and implementation phases of a project. - Special techniques for roof gardens, façade planting, indoor planting etcetera. The competences for design, planning and management are defined in the associated subject specific competences.
3	**Competence(s) developed**	Associated subject specific competences: B1, B2, B3, C1, C2, C3, C4, D2, E1, F1 Generic competences: INS.1 Capacity of analysis and synthesis INS.5 Grounding in basic knowledge of the profession: Spatial (3D) thinking; Ability to take the dimension of time into account INS.6. Visual, oral and written communication INS.11 Decision making INS.12 Ability to understand complex and dynamic systems INT.4 Interpersonal skills INT.6 Ability to communicate with experts in other fields INT.7 Appreciation of natural diversity and multiculturality / Understanding the cultural environment SYS.1 Capacity for applying knowledge in practice SYS.2 Research skills SYS.3. Capacity to learn SYS.5 Capacity to generate new ideas SYS.8 Ability to work autonomously SYS.11 Concern for quality
4	**Language of instruction**	***English***
5	**LL code**	**EU-LAND21-D1**
6	**European Qualifications Framework level**	6: First cycle – Bachelor
7	**Levels** **Basic**	The student demonstrates knowledge of materials and basic principles for landscape

Aspect			*Explanation*
			construction (walls, fences, paving, drainage, etc.) with their properties, application and aspects of sustainability. The student can: - elaborate a spatial design for a well-defined, small project (garden, urban open space) into a technical design taking into account the design concept, sustainability goals and making construction solutions and defining materials; - can elaborate a simple technical design into construction drawings: details, sections, including a work plan and cost calculation.
		Inter-mediate	The student demonstrates knowledge of materials and more complex principles for landscape construction (foundations, pergolas, green roofs and roof gardens, etc.) with their properties, application and aspects of sustainability in relation to legal demands and can apply systems and checklists for sustainability. The student can: - detail a spatial design for a more complex project taking into account the design concept, aspects of sustainability, future functioning and management; selecting materials and construction techniques; - can elaborate a technical design into briefs of specification with the related drawings and legal documents including drafting the budget.
		Advanced	The student demonstrates knowledge of innovative construction techniques and methods in outdoor space, roof gardens, façade planting, indoor planting, trees in urban environments, etcetera. The student can: - elaborate a spatial design for a complex urban or rural project area into a technical design taking into account aspects of sustainability, costs and the design and planning concepts; making details, construction solutions and defining materials taking into account laws and regulations and the demands from related perspectives (disciplines, stakeholders); - can draw up the contracting documents for a project (briefs of specifications, details, construction drawings, contour plans) including the projet budget, workflow and work plan and financial planning. The student has understanding of the legal and professional context of tendering and construction phase of a project and can draw up documents that are related to these project phases (bids, reports, briefs, construction reports, weekly reports, official report of completion, recommendations on contract variations, final financial, settlement, revision data, report on building materials certificates and acceptance testing).
		Master	In addition to the advanced level. The student can: - develop innovative approaches to landscape construction strategies, concepts and designs; - integrate his/her research outcomes into planning and design of landscape construction.
8	**ECTS credits**		This competence requires 6% of the programme, 11 -16 ECTS.
9	**LL Annotation**		The central domain of this area of knowledge, skills and understanding is to prepare and implement technical planning documents that are needed in order to realise designed

Aspect		Explanation
		projects. Its subjects range from the qualities, characteristics and uses of landscape materials to their detailing and briefs of specification. The organisation and management of the landscape construction process are issues, starting with feasibility studies until the final completion of the project. A part of the process is the selection of the use of off -the-shelf products versus the design of custom-designed elements. Relationships between design, construction, use and maintenance are important aspects of this subject area. The skills have to focus on making technical solutions that consider the design concept. The implementation is in line with the desired spatial quality. It responds to the expected use and general image of the project. The landscape architect has to make a choice based on sustainability and durability of the materials and constructions. Plan implementation should reflect the level of ambition of the project. Knowledge is required of innovation of technical solutions and the development of new materials. For some objects and elements special techniques are required: roof gardens, façade planting, indoor planting, golf courses, sporting grounds and degraded landscapes. Professionals have to apply methods and techniques like calculations for runoff water, grading calculation and dynamics (diagrams of forces). The environmental technical aspects – e.g. acoustic, noise, lighting, microclimate, coastal protection, erosion - are important on the site level, as well as for planning and structuring of spaces. Subject areas to be included into teaching and learning include construction materials, construction techniques, engineering techniques (including bioengineering techniques), standards and briefs for specifications, contracting and monitoring, quality assessment of plan implementation and construction. Special tasks may be roof garden development, greening on facades, indoor landscapes, etcetera. *(source ECLAS Guidance report (2010), page 28)*
10	**Aim of the LL**	The aim of this learning line is to provide students with adequate knowledge, understanding and skills of planting and vegetation; and that students learn how to integrate and apply these in the other subject specific competences like design, planning and management of rural and urban landscapes.
11	**Planned LL learning outcomes**	The student demonstrates knowledge of: - the range of landscape materials and construction principles for hard landscaping (pavements, fences, walls, small constructions), lighting, outdoor furniture (benches, tables, installations of play and sports); - reference projects for innovative technical landscape solutions; - basic construction principles for landscape implementation (calculations, rules of thumb, forces); - the legal and technical requirements relating to landscape implementation, construction, tendering, and contracting; - the aspects that define the quality of materials; - methods and techniques for calculation, budgeting and planning; using the correct standards and regulations; - the current tender and contracting processes and systems. - laws and regulations regarding tendering and contracting. The student understands: - the relation between function, design, form, materials and construction in relation to feasibility, cost aspects and sustainability; - the relation between design, construction, management and maintenance;

Aspect		*Explanation*
		- the process of directing and supervising the implementation of landscape projects, with the actors, roles and responsabilities in the planning and construction process. The student can: - formulate a transparant vision on the implementation of a spatial design considering the design concept, ambitions, feasibility and sustainability; - detail and specify a spatial design; materials, constructions, dimensions; - collect essential data for a construction plan; - elaborate a spatial design into a technical design taking into account the design concept, technical requirements, feasibility, low maintenance, cost efficient; - carry out calculations for defining the right dimensions for constructions (drainage and runoff water, height and width, strengths, etc.); - describe and illustrate the detailing in an effective way making use of the current software for computer aided design, lay-outin and spatial modelling taking into account a functional and safe construction and aspects of sustainability and costs; - analyse a project regarding the implementation and draft briefs of specifications according to the current standards; - draw up and analyse a budget calculation for a landscape project. - draw up documents for the contracting and construction phase; - assess a plan according to legal requirements and regulation; - process the data in drawings in a systematic, organised way, according to the standards and making use of current programmes for CAD and briefs of specifications.
12	**Context: Example(s) of a role**	Advisor in plan implementation and tendering
13	**Context: Example(s) of a situation**	A staff member who works in an office which is specialised in plan implementation
14	**Actions**	- Elaborate a spatial preliminary design (site plan, garden design) in technical drawings. Selecting materials, constructions, plant material. This results in a set of technical drawings, briefs of specification and a calculated budget in order to be able to implement the design. This includes: - Analysing spatial design; - Collecting data on materials to be used; - Studying implications of the use of materials, offering alternatives; - Making technical solutions and constructions; - Defining the measurements; - CAD drawing (technical drawings); - Making calculations.
15	**Criteria for actions**	- Working according to a systematic and logical method; - Making use of current techniques and methods for solutions in material and constructions; - Making use of up-to-date literature and research on technical solutions; - Designing constructions in a purposeful way; - Making use in an effective and efficient way of computer software for calculations, CAD drawing briefs of specification and presentation; - Working within the legal framework and regulations for construction and contract documents, applying the standards for drawings and documents.
16	**Results**	- Technical designs, detailing, construction drawings for urban and rural areas from scale 1:200 to 1:20 (or even 1:1)

<table>
<tr><th colspan="2">Aspect</th><th colspan="2">Explanation</th></tr>
<tr><td></td><td></td><td colspan="2">- Description of work or briefs of specifications; drawings, list of quantities, technical requirements, calculations and budgets, documents for putting a project to contract.
- Plans for construction: demolition plan, work drawing, details, dimension plan, sections, drainage plan, sewage plan, lighting plan, grading plan, planting scheme, cables and pipes.
- Calculations and budget for all phases of the planning and design process.
- Documents for putting the project to contract: for instance tender documents, summary of additional information and changes, official report of designation, specification estimates, quality plan, occupational health and safety plan, official report of tendering, award recommendation.</td></tr>
<tr><td>17</td><td>Criteria for results</td><td colspan="2">- Adequate implementation of the design intentions and principles;
- Correct use of materials and constructions;
- Correct method for calculation of amounts and construction;
- Addressing technical requirements and the legal framework;
- Systematic presentation on the drawings of:
- Existing and new situation,
- Measures, heights and runoff water system,
- Materials and application,
- Underground infrastructure,
- Contouring and groundwork,
- Civil engineering and plantation,
- Detailing and cross sections,
- Correct presentation of drawings according to European Standards.</td></tr>
<tr><td rowspan="6">18</td><td rowspan="6">Suggested modules with ECTS</td><td>Module / course</td><td>ECT</td></tr>
<tr><td>Study trip with preparation and literature: innovative construction landscape techniques; special project in construction: roof gardens, façade planting, indoor planting</td><td>2</td></tr>
<tr><td>Self-Study: Research on the technical functioning of landscape construction (for instance: drainage, tree bunkers, irrigation); Reference study landscape projects and construction surveying and evaluating the aspects of construction</td><td>4</td></tr>
<tr><td>Lecture series: Materials and construction; Contouring and ground work</td><td>2</td></tr>
<tr><td>Seminar and project: Technical details for a private garden with technical drawings; Innovative landscape constructions</td><td>2</td></tr>
<tr><td>Studio: Making a technical design for urban open space: square or small park with briefs of specification and budgeting;
Urban park: preparing the tender documents for the project;
Infrastructure landscape design and landscape construction (the construction aspect)</td><td>6</td></tr>
<tr><td>19</td><td>Supporting courses</td><td colspan="2">Civil engineering, Environmental law, Laws and regulations, Cost calculation and budgeting</td></tr>
<tr><td>20</td><td>References</td><td colspan="2">Fortlage, C.A. and E.T. Phillips. 2001. Landscape Construction, Volume 1: Walls, Fences and Railings. Routledge
Fortlage, C.A. and E.T. Phillips. 2001. Landscape Construction, Volume 2: Roads, Paving and Drainage. Routledge
Hensey, P. 2016. Construction Detailing for Landscape and Garden Design. Surfaces, steps and margins. Routledge
Neufert, E and P. 2009. Architect's data. 4th edition, updated by Johannes Kister. ISBN 978-1-4051-9253-8</td></tr>
</table>

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D2 LL CARD: Vegetation Establishment and Plant Materials

Aspect			*Explanation*
1	**LL title**		**Vegetation Establishment and Plant Materials**
2	**Description**		This learning line focuses on the knowledge and skills relating to vegetation development and planting design. Among other things it comprises: - Surveying and assessing planting and vegetation in its ecological context - Developing strategies for vegetation development; - Making policy or green structure plans - Making of a planting plan and scheme that is ready for implementation based on a spatial design of outdoor spaces or reconstruction of an existing situation. The competences for design, planning and management are defined in the associated subject specific competences.
3	**Competence(s) developed**		Associated subject specific competences: B1, B2, B3, C1, C2, C3, C4, D1 Generic competences: INS.1 Capacity of analysis and synthesis INS.5 Grounding in basic knowledge of the profession: Spatial (3D) thinking; Ability to take the dimension of time into account INS.6. Visual, oral and written communication INS.11 Decision making INS.12 Ability to understand complex and dynamic systems INT.4 Interpersonal skills INT.6 Ability to communicate with experts in other fields INT.7 Appreciation of natural diversity and multiculturality / Understanding the cultural environment SYS.1 Capacity for applying knowledge in practice SYS.2 Research skills SYS.3. Capacity to learn SYS.5 Capacity to generate new ideas SYS.8 Ability to work autonomously SYS.11 Concern for quality
4	**Language of instruction**		***English***
5	**LL code / LL kodas**		**EU-LAND21-D2**
6	**European Qualification (EQF) level**		6: First cycle – Bachelor
7	**Levels**	**Basic**	The student demonstrates knowledge of plant associations and natural processes in vegetation (succession) and corresponding management

Aspect			*Explanation*
			strategies. The student can: - after instruction by a tutor make thematic maps for a selected area of the (semi-) natural landscape, types of nature, potential natural vegetation on the basis of soil maps; - when given a vision for the design, draft a planting vision for a small scale spatial plan and make a planting scheme for this, considering the biotic and abiotic factors of the site and make a planting list.
		Inter-mediate	The student demonstrates knowledge of the aspects of natural and ecological quality and the corresponding national and international policies. The student can: - after instruction by a teacher to assess the challenges and opportunities of the ecological and natural quality in an area and to represent these on thematic maps; - on the basis of a design vision for a spatial plan in an urban or rural environment to draft a planting vision and to elaborate this in a set of planting schemes, considering the aspects of management and the biotic and abiotic factors of the area.
		Advanced	The student can: - make a spatial and functional analysis of an area in order to plan and design a green structure plan of an area (urban or rural) considering aspects of sustainability, finances, management and on the basis of aesthetic, functional, environmental, and ecological factors make detailed planting schemes; - elaborate the planting schemes into briefs of specification and details for innovative planting systems.
		Master	In addition to the advanced level. The student can: - develop innovative approaches to planting strategies, concepts and designs; - integrate his/her research outcomes into planning and design of planting.
8	**ECTS credits**		This competence requires 6% of the programme, 11 - 16 ECTS.
9	**LL Annotation**		Knowledge about plants, plant material and vegetation is characteristic for landscape architecture. With its ability for constant modification, the vegetation concept constitutes a manifest component for sustainable planning and planting has an enhancing effect on human health and enjoyment. Areas covered with plants can serve as highly practical means for people to get emotionally and physically involved in their surrounding landscape. The core of knowledge is consequently to be specified in relation to the three professional landscape activities: landscape design, landscape planning, and landscape management. In landscape design the focus has traditionally been on creating pleasant and attractive species combinations; increasingly, an equivalent

Aspect		Explanation
		importance must be attached to the question of how to establish and how to keep up desired appearances for long-term and sustainable designs. Thus management and maintenance play a pivotal role in shaping aesthetic qualities with values of feel, look, usefulness and biodiversity. Due to the flux inherent in landscape design that is essentially composed of living material, a dynamic spatiality is unique to landscape architecture. In order to make the most of this apparent spatial dimension of plants, the interrelationships between plants and their living and non-living environment require attention. The skill of a designer, who uses natural features and processes of vegetation to visually organise means for understanding, will also include the skill to conceptualize ecological information. Crucial for the development of an aesthetic pleasing and ecologically diverse vegetation is landscape management. Landscape architecture counts on management as a creative process, where numerous planning and design considerations are involved. In order to change the attitude from the immediate effect of ready-made plantings towards more dynamic systems, the planning and design process must also include some essential steps of mutability, from the establishment phase to phases representing various time-scales and grades of maturity. *(source ECLAS Guidance report (2010), page 28)*
10	**Aim of the LL**	The aim of this learning line is to provide students with adequate knowledge, understanding and skills of planting and vegetation; and that students learn how to integrate and apply these in the other subject specific competences like design, planning and management of rural and urban landscapes.
11	**Planned LL learning outcomes**	The student demonstrates knowledge of: - the plant assortment, plant associations, natural processes in vegetation and the corresponding management strategies; - the importance and effect of planting and vegetation on sustainability, biodiversity, human health and well-being. The student understands: - how design, planning and management are interrelated with the sustainable establishment and upkeep of planting and vegetation. - the role of planting and vegetation for biodiversity, functionality and use, human health and well-being. - the development of planting and vegetation over time in relation to ecological, use and growth conditions and management. The student can: - Make a survey and analyse an area or site with the existing planting in relation to planting and vegetation. - Draft a strategy and a vision for planting or vegetation development - Draw a plan for a green structure and elaborate this in a planting scheme with a brief of specification. - Present and discuss the conclusions of an analysis, strategy, vision and planting scheme in a transparent and convincing way to/with others.

Aspect		*Explanation*
		- Give advice on planting and vegetation.
12	**Context: Example(s) of role**	Advisor in planting design and vegetation development
13	**Context: Example(s) of situation**	- Staff member of a local government in the department for green areas and parks; - Advisor in an office for landscape consultancy; - Independent landscape designer who combines spatial design with the elaboration of planting plans.
14	**Actions**	- Making surveys and analysis of existing planting and vegetation; - Judging conditions of growth of plants and vegetation; - Developing a professional view, strategy and concepts regarding the application of planting material and the development of (semi-)natural vegetation; - Making green structure plans and policies; - Carrying out reference studies on planting design; - Formulating criteria for selection of plant material and selecting plant material for a spatial plan; - Assessing the quality of actual vegetation and plant material; - Assessing the quality of trees, shrubs and other vegetation and planting in existing situation; - Advising on the improvement of planting in outdoor spaces; - Designing planting concepts and making planting schemes; - Presenting plans and advice to clients, members of planning teams and third parties.
15	**Criteria for actions**	- Making use of current methods in planting design and vegetation survey; - Applying adequate planting material of the selected function, purpose, design concept and growing conditions; - Working in a systematic, verifiable way and making use of the correct references and literature; - Addressing the goals set in the framework set by policy and spatial plan; - Knowledge of plant materials used in an effective way; - Presentation of plans and policies are convincing and easy to understand.
16	**Results**	- Survey and assessment of vegetation; - Survey and assessment of planting; - Vision on vegetation establishment and development; - Planting design concept and scheme; - Structure plan for green areas; - Advice report on planting or vegetation.

Aspect		***Explanation***
17	**Criteria for results**	- Correct and complete use of data. - Meeting architectural standards of composition, organization, form and other esthetical aspects. - Sustainable in relation to the objectives of the vegetation and planting - Policies and structure plans are coherent and convincing and provide clear guidelines on a structural level.
18	**Suggested modules with ECTS**	***Module / course ECTS***
		Study trip with preparation and literature: innovative planting techniques; planting aspects of projects in urban open space and writing a management paragraph for each 2
		Self-Study: Plant laboratory: observation of a selected plot during the four seasons with drawings and a report; Reference study landscape projects and planting surveying 4
		Lectures: Plant assortment and application; Vegetation development, management and establishment 2
		Seminar and project work: Drawing up a planting scheme for a perennial border and shrubs 2
		Studio: Landscape park and vegetation establishment; Landscape management and vegetation development; Garden design and planting scheme: the planting scheme; : Infrastructure landscape design and road planting: the vegetation and planting aspect 5
		Workshop: Developing a planting scheme for a garden show 1
19	**Supporting courses**	Botany, Dendrology, Soil science, Management of green areas
20	**References**	Dunnet, N. & J. Hitchmough (Eds). 2014. The dynamic landscape. Design, Ecology and Management of Naturalistic Urban Planting. Routledge, London & New York Kingsbury, N. 2010. Piet Oudolf Landscapes in Landscapes. The Monacelli Press Oudolf, P. & N. Kingsbury. 2013. Planting: A New Perspective. Timber Press, London – Portland Robinson, N. 2011. Planting Design Handbook, 2nd Edition. Ashgate Publishing

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Erasmus+

E1 LL CARD: Information Technology in Landscape Architecture

Aspect			*Explanation*
1	**LL title**		**Information Technology in Landscape Architecture**
2	**Description**		This learning line is mainly an instrumental one for all other subject specific competences. It relates to all domains that landscape architects use for their activities, such as: - Data capturing and management; - Data modelling of landscape elements and processes; - Geographic Information Systems (GIS) for analysis and scenarios; - Computer Aided Design (CAD) for presentation, visualisation, detailing, and calculation/budgeting; - Multimedia-techniques and graphic design for presentation and communication. The competences for design, planning and management are defined in the associated subject specific competences.
3	**Competence(s) developed**		Associated subject specific competences: B1, B2, B3, C1, C2, C3, C4, D1, D2, F1. Generic competences: INS.1 Capacity of analysis and synthesis INS.5 Grounding in basic knowledge of the profession: Spatial (3D) thinking; Ability to take the dimension of time into account INS.8 Elementary computing skills INS.9 Information management skills INS.12 Ability to understand complex and dynamic systems INT.6 Ability to communicate with experts in other fields SYS.1 Capacity for applying knowledge in practice SYS.3 Capacity to learn SYS.9 Project design and management SYS.11 Concern for quality SYS.12 Will to succeed
4	**Language of instruction**		***English***
5	**LL code**		**EU-LAND21-E1**
6	**European Qualifications Framework level**		6: First cycle – Bachelor
7	**Levels**	**Basic**	The student demonstrates knowledge of: - the main ICT-tools that are used in LA with their possibilities and limitations. - The basic data which are essential for landscape architecture in planning, design,

Aspect			*Explanation*
			project implementation and management. The student can: - model a spatial concept with digital tools (e.g. SketchUp); - consult basic maps with data (e.g. ArcGIS); - make simple technical drawings based on a preliminary design (e.g. AutoCAD) including cross sections, details, construction specifications; - use the basic tools for editing images and photos (e.g. Photoshop, GIMP) for reference images, artist's impressions of a design, explanatory details; - Present plans and maps in a report or a multimedia presentation (e.g. Illustrator, PowerPoint); - set up his/her digital portfolio.
		Intermed iate	The student can: - after instruction by a teacher to collect the essential data and to manage these for planning, design and management; - use digital modelling for all steps of the design and planning process (concept, spatial model, design, evaluation, presentation: e.g. SketchUp, City engine); - transfer collected data into GIS and use this for landscape analysis, can represent the results in maps (ArcGIS, Illustrator); - make technical design drawings in CAD and use the information as a central data carrier for his/her detailing, budgeting; and edit these for presentations and communication (e.g. AutoCAD, Illustrator, InDesign); - draw and edit digital images resulting in convincing artist impressions of concepts, plans, designs and details (e.g. Photoshop, Illustrator, InDesign); - present plans in convincing way in reports and multimedia presentations (e.g. PowerPoint, Prezi, and Photoshop); - design an attractive portfolio of his or her work.
		Advan-ced	The student can: - collect the essential data and to manage these for planning, design and management; - use digital modelling in an integral and professional way for all steps of the design and planning process (concept, spatial model, design, evaluation, presentation: e.g. SketchUp, City Engine); - transfer collected data into GIS and use this for landscape analysis and build alternatives and scenarios, can represent the results in maps and 3D presentations (ArcGIS, City Engine, Illustrator); - make technical design drawings in CAD and use CAD as a central data carrier for detailing, budgeting and tender documents, and edit these for presentations and communication (e.g. AutoCAD, Illustrator, InDesign, and Scribus) and export data to BIM and Geodesign programmes; - draw and edit digital images resulting in professional artist impressions of concepts, plans, designs and details (e.g. Photoshop, Illustrator, and InDesign) that include the dimension of time and are well attuned to the target groups and can be used in consultation and participation of stakeholders;

Aspect			*Explanation*
			- present plans in convincing way in reports and multimedia presentations (e.g. PowerPoint, Prezi, Photoshop, video-programmes) considering in a balanced way the target group (other experts, stakeholders, commissioners); - present a professional portfolio of his/her work.
		Master	In addition to advanced. The student can: - integrate research results into innovative strategies and methods for data analysis; - develop new concepts for using ICT for the design and planning process.
8	**ECTS credits**		This competence requires 6% of the programme, 11-15 ECTS
9	**LL Annotation**		Information and Communication Technology (ICT) has a number of different roles in landscape architecture research and practice. It has been integrated into tasks such as text editing, calculation, drafting, production of working plans and presentations. However, as both software and digital communication continue to develop, it becomes more evident that ICT cannot be understood as a host of tools from which one simply picks the right one to solve a certain problem. More importantly, ICT has to be regarded as a technology that changes the way we understand and interact with the world. For example, the fourth dimension that is of particular importance in landscape architecture is now visualised in high resolution images and animated video sequences. At the same time, people in general have become accustomed to walk or even fly through animated landscapes (e.g. computer games), and customers have begun to expect that the use of plants and materials is presented to them in photo-realistic images. The main areas for subject specific competences are: - Understanding of the possibilities of ICT in landscape architecture. Knowledge of types of ICT-tools and when to make use of these. - Data capturing and management – understanding and defining which data are essential for a landscape planning project. Defining landscape elements, factors and categories and its relations. Normalising these in a systematic way. Remote sensing, GPS, scanning and digitizing information. - Data modelling of landscape elements and processes. - Basic skills in the use of GIS for analytical purposes and of CAD for presentation, visualisation, calculation. Using spatial databases for analysis of landscapes. - Use of ICT in landscape design. Theory of terrain modelling. Defining spatial relationships, distances. Inserting the factor time in the models. Making use of movement for understanding the environment. - Use of ICT in presentation and communication. Theory and techniques for communication and presentation. Selection of the right kind of presentation. Use of light and material in computer modelling. Presentation of maps with adjusted level of detailing. - Use of ICT in landscape management. Combining calculation and planning modules with spatial databases. - Use of ICT in construction. CAD-software for detailing and technical drawings and budgeting. Preparation of tender documents. (source ECLAS Guidance report (2010), page 28-29)
10	**Aim of the LL**		The aim of this learning line is to provide students with adequate knowledge,

Aspect		*Explanation*
		understanding and skills of the use of ICT in landscape architecture and that students learn how these tools can be applied in design, planning and management of landscapes, urban open space and sites.
11	**Planned LL learning outcomes**	*The starting point is that students have already acquired basic skills in the use of ICT in word processing, calculation and presentation (e.g. Microsoft Office: Excel). The learning outcomes do not relate to website design and development and making of movies.* The student demonstrates knowledge of: - which ICT tools can be applied for the various tasks for landscape architecture and the different stages of the planning and design processes; - how to collect and manage data in a systematic and logical way. The student understands: - which data are relevant in the different stages of planning, design, project implementation and management are how these are interrelated; - the role of ICT in communication and presentation. The student can: - capture data and manage these with digital tools; - draw up and edit digital spatial models including the aspect of time – movement, vegetation development, flooding, landscape development (including 3D and 4D sketching); - use GIS for landscape analysis, mapping and scenario planning; - construct and edit digital images (maps, drawings, photos, videos, artist impressions); - use CAD for spatial and technical designs and drawings, including terrain modelling (contour plans), calculation (ground balance) and budgeting and transfer data to other applications (BIM, tender documents); - design and lay-out reports, maps and presentations (e.g. Illustrator, InDesign, Scribus); - make multi-media presentations of plans and designs.
12	**Context: Example(s) of role**	Junior landscape planner or designer working on various landscape projects
13	**Context: Example(s) of situation**	- Technical assistant at a local government for planning and management of outdoor space and landscapes; - Advisor in an office for landscape consultancy; - Independent landscape designer who combines spatial design with making maps, sketches, implementation plans.
14	**Actions**	- Capture data (survey, inventory, analysis) and manage these; - Digital modelling of spatial models, terrain models; - Analyse landscapes with digital tools; - Making maps for landscape development based on digital data models (GIS); - Construct and edit images (drawings, photos, artist impressions); - Make CAD drawings of plans, concepts, spatial models, designs, details; - Generating and editing images / photographs for artist landscape impressions, reference projects and illustration of plans and designs; - Make calculations, budgets for project implementation and tendering; - Design and lay-out reports and presentations.

Aspect		*Explanation*	
15	**Criteria for actions**	- Making use of current ICT tools, programmes and methods - Choosing the right technology in a systematic way; - Use the correct balance between detailed information and integral representations; - Working in a systematic, verifiable way and making use of the correct references and literature; - Presentation of plans and policies are convincing and easy to understand.	
16	**Results**	- Digital landscape maps (analysis, plans, alternatives, scenarios) and drawings; - 3D and 4D digital models; - Digital design drawings and visualisations; - Multi-media presentation; - Well-designed report on plan, design or project; - Digital portfolio presenting landscape architecture plans, projects and other work.	
17	**Criteria for results**	- Correct, consistent and integral use of data. - Systematic, well-organised application of data in drawings, according to the professional standards (EN/ISO). - Convincing and professional products. - Well balanced presentations and reports, which are consistent and well adapted to the target groups.	
18	**Suggested modules with ECTS**	**Course / module**	**ECTS**
		Because IT-tools are mainly instrumental there are mostly courses suggested that can be included in modules that relate to planning, design, project implementation and management. There are one modules suggested that purely related to GIS. Courses: Lectures: Introduction to IT-tools in landscape architecture; Collecting and managing data for landscape analysis; Tutorial/seminar: ArcGIS: introduction (online); Digital modelling (e.g. SketchUp); Image editing (e.g. Photoshop); Lay-out and graphical design tools (e.g. Illustrator, InDesign); CAD Drawing (e.g. AutoCAD); Calculation and budgeting (e.g. Excel, pivot tables etc.); Using programmes for drawing up tender documents. Module: ArcGIS and Geodesign. Skills referring to creating digital spatial data, analysing and presenting spatial data and presenting alternatives and/or scenarios. The module starts with GIS theory on a specific topic, followed with a demonstration of the associated ArcGIS 10 tools. Students will carry out a GIS exercise and work on a specific GIS analysis.	*4* *4* *7*
19	**Supporting courses**	GIS, Information technology, Use of BIG data, Geodesign See also online material at: http://geospatialrevolution.psu.edu/educators/index.html and http://www.gis.harvard.edu/training/non-credit-training/virtual-training/tutorials	
20	**References**	Cureton, P. 2017. Strategies for Landscape Representation, Digital and Analogue Techniques. Routledge Dodge, M., McDerby, M., and Turner, M., eds. 2008. Geographic Visualization.	

Aspect		***Explanation***
		Concepts, Tools and Applications. London, John Wiley & Sons Flaxman, M. 2009. Fundamentals of Geodesign. Keynote May 22, 2009. In Proceedings DLA 2009, Hochschule Anhalt. http://www.kolleg.loel.hs-anhalt.de/landschaftsinformatik/fileadmin/user_upload/_temp_/2010/Proceedings/Buhmann_28-41.pdf Heywood, Cornelius and Carver. 2011. An introduction to Geographical Information systems, 4th edition, Pearsons Education, ISBN13 978-0273722595 Kraak, M.J., and Ormeling, F. 2010. Cartography. Visualization of Spatial Data. London, Prentice Hall Miller, W. R. 2012. Introducing Geodesign: The Concept. ESRI, GeoDesign Services Nijhuis, S., R. van Lammeren and F. van der Hoeven (eds). 2011. Exploring the Visual landscape. Advances in Physiognomic LandscapeResearch in the Netherlands. Research in Urbanism Series (RiUS), Volume 2. IOS Press, ISSN 1875-0192 (print), ISSN 1879-8217 (online) Schaller, J. and C. Mattos. ArcGIS Model Builder Applications for Landscape Development Planning in the Region of Munich, Bavaria Vassilopoulos, A. a.o. (eds). 2008. Geoinformation Technologies for Geo-Cultural Landscapes: European Perspectives. CRC Press

EU-LAND21

TRANS-EUROPEAN EDUCATION FOR LANDSCAPE ARCHITECTS

EU-LAND21 Nº 2016-1-LT01-KA203-0232019

Erasmus+

F1 LL CARD: Professional Practice of Landscape Architecture and Entrepreneurship

Aspect		*Explanation*
1	**LL title**	**Professional practice of Landscape Architecture and Entrepreneurship**
2	**Description**	Landscape architecture practice is concerned with ways how the characteristics of (the various layers of the) landscape must be integrated to create functional, environmentally acceptable and meaningful proposals and projects. Within an academic context it is not feasible to acquire all competences for professional practice. However, students should have at least a basic understanding of professional practice, extend knowledge and skills and gain the experience and skills required in a practical environment. Part of the competences may be mastered and assessed as part of an internship, for example at a landscape architecture or governmental office, or at an NGO. Others can be acquired during a traineeship before or after graduation.
3	**Competence(s) developed,**	Associated subject specific competences: All Associated Generic competences: INS.1 Capacity of analysis and synthesis; INS.2 Capacity for organisation and planning; INS.5 Grounding in basic knowledge of the profession: Spatial (3D) thinking; Ability to take the dimension of time into account; INS.6 Visual, oral and written communication; INS.8 Elementary computing skills; INS.9 Information management skills; INS.10 Problem solving; Ability in negotiating, moderation and conflict management; INS.11 Decision making; INS.12 Ability to understand complex and dynamic systems; INS.13 Dealing with complexity and ability to think and act in an integrated and holistic way; INT.1 Critical and self-critical abilities / Reflective practice and the ability to learn from failures; INT.2. Ability to accept criticism and to take it into account; INT.3 Teamwork; INT.4 Interpersonal skills; INT.6 Ability to communicate with experts in other fields; INT.8 Ability to work in an international context; SYS.1 Capacity for applying knowledge in practice; SYS.3. Capacity to learn; SYS.4. Capacity to adapt in new situation; SYS.5. Capacity to generate new ideas; SYS.8. Ability to work autonomously; SYS.9. Project design and management; SYS.10. Initiative and entrepreneurial spirit; SYS.11. Concern for quality.

Aspect			*Explanation*
4	**Language of instruction**		*Dutch - **English** – Estonian – Hungarian - Lithuanian – Polish.*
5	**LL code**		**EU-LAND21-F1.**
6	**European Qualification Framework (EQF) level**		6: First cycle – Bachelor
7	**Levels**	**Basic**	Students demonstrate a general insight into the professional field. Familiarity with the methods and methods of approach used by the professional field. Insight into all the subject-specific professional competences. Students understand the basic principles of entrepreneurship, how to define a challenge and the related opportunities.
		Intermediate	Students demonstrate a deeper insight in the professional field, mastering the basic methods and approaches of the discipline. The student has selected a position that is appropriate to his or her ambitions and capabilities. Students can develop a business proposal on the basis of a certain challenge, context and possibilities.
		Advanced	Students have an excellent overview of the professional field and can define their position in it. They contribute to developing the methods and approaches of the discipline. Students can develop a business proposal on the basis of a certain challenge, context and possibilities considering their contribution to sustainability goals and their personal ambition.
		Master	In addition to the advanced level: Students can define their position in the professional field and the way they can make use of their personal profile and ambition. Students can develop an innovative business proposal that serves the improvement of sustainability of landscapes.
8	**ECTS credits**		*This competence requires 12% of the study time, 20 - 30 ECTS*
9	**LL Annotation**		To acquire professional competences internships should be included into LA programmes. These consist of an extended period of supervised residency on the part of the student in a design or planning office or contracting firm to gain practical work experience. Experience gained during periods of practical training outside of the university should be reflected upon, for example by writing a scientific term paper, or by keeping and discussing a diary, or by preparing a thematic report. *(source ECLAS Guidance report (2010), page 28)* For offices, local authorities and NGOs an entrepreneurial attitude is essential Landscape architects should be able to conduct a critical reflection/observation of their local context and identify challenges, shortcomings and change potential, which they analyse from multiple perspectives. They identify a possibly viable business model and analyse its feasibility in relation to the local context and draw up a business plan that includes financing and marketing models.
10	**Aim of the LL**		The aim of this learning line is to extend knowledge and skills and provide the experience and skills required in a practical environment and for developing entrepreneurial skills.
11	**Planned LL learning outcomes**		The student manages the professional competencies (knowledge and skills) to a sufficient degree (intermediate-advanced level) so to be able to carry out assignments in the field under supervision / independently as a starting professional. The student understands:

Aspect		*Explanation*
		- the economic and social functioning of the organisation and is able to advice on improvement proposals. - the project organisation of the company/local government and in his/her own activities to carry out projects and other professional tasks. The student can: - apply principles of project-based working in planning and execution, in agreement with the client and other stakeholders. - function socially and communicatively (both written and oral) in a business organization within the professional field of LA. - define – on the basis of an environmental or social challenge - a sustainable value of a product or service and develop a strategy or tactical plan to integrate or to develop this into a business proposal.
12	**Context: example(s) of a possible role**	- Junior landscape-architect: the student is an employee in a company and fulfils a function that matches with the competence-level. The student gets a view of a concrete work situation and learns to function and operate in a concrete professional team.
13	**Context: example(s) of a possible situation**	- Staff member of a local government in the department for green areas and parks; - Employee in an office for landscape design/consultancy; - The student is supervised by a mentor from the organisation. This mentor is expert in the field of LA and is able to supervise an internship on didactic and professional grounds
14	**Actions**	- A practical training outside of the university, where students gain experience with a reflection by the student, for example by writing a scientific term paper, or by keeping and discussing a diary, or by preparing a thematic report (*source ECLAS Guidance report (2010), page 28);* - Carrying out the tasks that are provided by the organisation, partly for projects, partly for additional organisational activities. The student describes in general the activities, the structure and functioning of the organisation and his or her own contribution to this; - Developing a business plan for a self-defined service, challenge, with a value chain, and business model.
15	**Criteria for actions**	- Applying principles of project-based working in planning and execution. - Successfully carrying out assignments in the field under supervision / independently as a starting professional. - Showing insight into the economic and social functioning of the organisation. - Organisation-awareness (attitude towards the work, sense of responsibility/ flexibility/taking initiatives/ being able to work independently). - Clear reflection on one's own functioning and on the operating of the organisation / team. - Planning and organising (among others organising one's own work). - Demonstrating an entrepreneurial attitude.
16	**Results**	A paper, report and/or a diary containing: - Description of the organisation: mission, structure, activities; - Description of own work and projects; - Description of activities related to reflection on the learning outcomes; - Reflection on one's own professional activities/ internship.

Aspect		*Explanation*
		- A business plan
17	**Criteria for results**	- Good insight into the functioning of the organization - Sufficient knowledge in the field of landscape architecture - Correct use of (professional) language, both oral as written - Insight in the quality of work. See also annex for evaluation of attitude and behaviour for the internship.
18	**Suggested modules with ECTS**	Professional training in a (landscape) office or at a department of a local authority as an apprentice under guidance of an academically schooled practitioner, 20-30 ECTS. The learning line may consist of: - Visits to landscape architecture offices / departments 3 - Internship (one or more) 20 - Sustainable entrepreneurship project module 7
19	**Supporting courses**	*Project Management* - Knowledge of Project Organisation Structure - Project Planning - Methods & Techniques in Project Management - Time Management - Teambuilding - Brief writing and Cost planning - Securing Resources - Fee Negotiation - Data Processing, spreadsheets, Excel *Quantity Surveying measurement, cost control & contracting* - Definition & process of landscape contracts - Contract Law including European tendering procedures - Contract procedures, arbitration, documentation, forms - Communications with contractors and commissioners - Terms and law of public tendering and procurement - Negotiation and forms of contracting letting - Specification, mensuration & cost estimating *Planning Systems & Law & Public Administration* - Legal systems: general principles - Planning Systems - Regional and local area planning interface - Environmental Protection law and systems: (inter)national *Site Monitoring* - National standards - Live construction projects/ case studies - Stages of work (sequence of building operations) *Moderation & Communication* - Conflict management and arbitration - Communication and administration - Team work management and leadership - Report Writing - Moderation - Skill in conflict management - International language skills esp. professional terminology

Aspect		***Explanation***	
		History and Status of the Profession	- History of the Profession national & Internationally - Role and function of the profession
		Project Work	- Professional roles and the building/planning team - Self-directive group dynamics - Tasks and Programming ("ability to complete a task")
		Office Organisation & Administration	- Financial management accounting - Taxation and taxes
		Ethics	- Professional Codes of Conduct/ Professional Responsibilities - The idea and history of professionalism - International competences relative to local regional identity
20	**References**	Bruns, D. & others. 2010. ECLAS Guidance on Landscape Architecture Education, LE:NOTRE & ECLAS, October 2010 Foster, K. 2010. Becoming a Landscape Architect: A Guide to Careers in Design, Wiley, London, ISBN: 0470338458	

Annex 1: Detailed evaluation sheet attitude and behaviour for LA-internships

Operating within the organisation		++	+	-	--
Understanding of the organisation	Understanding of the business operations of the organisation (points of view, aims and strategy of the organisation, buyers/clients, production process, control/monitoring, strong/weak points) & understanding of the formal and informal structure of the organisation.				
Organisation-awareness	Being conscious of effects and consequences of the own decisions or activities on other parts of the organisation.				
Planning and organising	Establishing aims and priorities effectively, and determining what actions, time and means are needed to achieve these aims.				

Professionally oriented aspects		++	+	-	--
Knowledge	Having sufficient basic knowledge in the field of L.A.& E.M. to be able to carry out commissions in this field as a starting professional.				
Understanding, insight	Spotting problems; recognising important information; being able to link information. Detecting possible causes of problems; searching for relevant information.				
Ability to learn	Being able to absorb new information and use it effectively.				
Inventiveness/creativity/ability to innovate/originality	Finding original solutions for problems which have to do with the commission. Thinking out new methods to replace old ones.				
Checking progress	Being able to monitor and check progress of the own activities & responsibilities, and, if necessary, to adapt them.				
Quality	Requiring high quality of the own work. Showing not to be satisfied with average presentations.				

Social and communication skills		++	+	-	--
Expression in writing	Being able to write down ideas and opinions in understandable and correct English.((grammar, spelling, syntax, being business-like and clear)				
Verbal expression	Being able to communicate ideas and opinions verbally to other people in understandable English.				
Personal interaction	Not having difficulties in dealing with other people. Not being hesitant to approach other people and to mix with them.				
Co-operating	Adding to collective results, even when this co-operating concerns affairs which do not directly affect the student personally.				
Working under pressure	Being able to work effectively under pressure, or when disappointed, or when being hindered by others.				

Motivation/evaluation		++	+	-	--
Applying (personal) learning aims	Making choices and carrying out tasks with regard to the (personal) learning aims.				
Reflection	Evaluating the quality of the own work and learning process (having insight into the own qualities)				