UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Digital techniques in landscape design

Educational subject description sheet

Basic information

Field of study Landscape architecture **Speciality** landscape development and protection **Organizational unit** The Faculty of Spatial Management and Landscape Architecture **Study level** First-cycle (engineer) programme **Study form** Full-time **Education profile** General academic	**Education cycle** 2024/25 **Subject code** GD000000GAKKKS.I2C.3890.24 **Lecture languages** english **Mandatory** optional **Block** specialization subjects **Disciplines** **Subject related to scientific research** No **Subject shaping practical skills** Tak

Teacher responsible for the subject	Łukasz Pardela
Other teachers conducting classes	Łukasz Pardela, Monika Brząkała

Period Semester 2	**Examination** graded credit **Activities and hours** lecture: 15 project classes/workshop: 30	**Number of ECTS points** 4.0

Goals

C1	To provide knowledge of BIM in supporting design processes in landscape architecture.
C2	To familiarise students with the capabilities, tools and techniques of BIM for solving engineering problems.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	The student knows and understands the digital record of the physical and functional properties of the object and the object databases generated on their basis in the use of BIM.	AK_P6S_WG04	test
W2	The graduate knows and understands the principles of organization, composition, saving views and presenting landscape architecture projects in BIM.	AK_P6S_WG11	test
Skills – Student can:			
U1	The student is able, using various graphic techniques, methods and practical tools, to define the needs and guidelines for design work on landscape architecture objects.	AK_P6S_UW06	active participation, performing tasks
U2	The student is able to map the designed area in the BIM.	AK_P6S_UW07	active participation, performing tasks
Social competences – Student is ready to:			
K1	The student is ready to creatively illustrate the designed space with the use of BIM programs.	AK_P6S_KK02	controlled activities

Balance of ECTS points

Activity form	Activity hours*
lecture	15
project classes/workshop	30
project preparation	45
class preparation	30

Student workload	**Hours** 120	**ECTS** 4.0
Workload involving teacher	**Hours** 45	**ECTS** 1.7
Practical workload	**Hours** 30	**ECTS** 1.0

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	Introduction to Vectorworks Landmark. Setup, and basic options. User interface. Basic tools, layers, and classes. Additional tools and add-on modules. Use material and object libraries. Terrain modeling with existing methods. Surfaces are created and combined. Creation of 2D and 3D vegetation. Create tabular lists. Modeling of landscape components. Modeling of landscape components. Project presentation. Repetition and lecture credit.	lecture
2.	Practical activities are divided into four parts (modules). The first module includes ten introduction activities on various scales and perspectives in landscape architecture. The second module includes practical activities for creating and specifying the amount and degree of building information required in a BIM model. The third module focuses on public space development, including components such as roads and pavements, street furnitures, and green spaces with existing and planned plants. The third module has been developed to include practical understanding of project annotation and presentation, as well as basic project visualization techniques The last module focuses on a full home garden BIM model. The course is divided into two controlled exercises: the first involves designing a single small garden architecture or street furnishing (e.g. fence, gazebo, deck, terrace, etc.), and the second examines the practical skills of creating plot development elements (on the scale of a domestic garden) as well as taking the BIM/Vectorworks theoretical background quiz.	project classes/workshop

Course advanced

Teaching methods:

educational film, computer lab/laboratory, lecture, classes, blended learning, controlled classes

Activities	Examination methods	Percentage in subject assessment
lecture	test	60%
project classes/workshop	active participation, performing tasks, controlled activities	40%

Entry requirements

Literature

Obligatory

1. Vectorworks 2022/ + documentation.
2. The Landscape Institute, BIM for Landscape. Wyd. Routledge, 2016.
3. Video tutorials that are part of the course.
4. World Wide Web (WWW) sites.

Optional

1. Vectorworks 2019-2020 User's Guide, 1940 p.
2. Tamsin, S., Residental Garden Design with Vectorworks Landmark, Publisher Nemetschek North America, 269 p.
3. Nemetschek online resources

Kierunkowe efekty uczenia się

Kod	Treść
AK_P6S_KK02	The graduate is ready to formulate problems with precision and think creatively about space.
AK_P6S_UW06	The graduate is able, using a variety of techniques (including graphic and visual arts), methods and tools, to carry out analyses beyond the framework of landscape architecture and practically determine the needs, including social needs, and guidelines for design and implementation work of various trades on landscape architecture objects.
AK_P6S_UW07	The graduate is able, using a variety of techniques, to obtain the field data and use common tools for drafting and presenting projects.
AK_P6S_WG04	The graduate knows and understands at an advanced level the issues of spatial description, including graphical, mathematical and geodetic.
AK_P6S_WG11	The graduate knows and understands at an advanced level the principles of perspective, proportion, drawing and sculpture composition and space representation, as well as techniques for visualizing landscape architecture ideas and designs.