COURSE DESCRIPTION CARD - SYLLABUS

Course name
Advanced Technologies in Interior Design 1 [S2AW1>ZTwW1]

Course

Field of study
Interior Design

Year/Semester
1/1

Area of study (specialization)
–

Profile of study
general academic

Level of study
second-cycle

Course offered in
Polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
30

Laboratory classes
0

Other (e.g. online)
0

Tutorials
30

Projects/seminars
0

Number of credit points

4,00

Coordinators

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Lecturers

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Prerequisites

Basic knowledge of CAD programs, mathematics and computer science at a basic level, knowledge of materials science, technical drawing, basic knowledge of construction.

Course objective

none

Course-related learning outcomes

none

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

none

Programme content

Parametric and generative design and elements of visual programming in interior design.

Course topics

The use of parametric and generative design in interior design for:
- furniture design using algorithmic methods
- designing interior design elements and small architecture together with elements of ergonomics
- generating textures, patterns, applied graphics, furnishings and interior design elements
- creating innovative and unconventional spatial installations

Teaching methods

As part of the course, the student will acquire knowledge and practical skills in the following areas:
- review of algorithms important from the perspective of design practice (random, aggregation, swarming, machine learning, basics of programming languages, single- and multi-criteria optimization, Voronoi, Tween Curve, loops, simulations of physical and environmental phenomena, attractors, L-Systems, cellular automata, recursion
- overview of parametric and generative design software with add-ons and plugins
- basics of digital fabrication: additive fabrication (3D printing), subtractive fabrication (milling machines and CNC machine tools, robotic arms, laser plotters, shotcrete), formative fabrication (thermal forming, folding)
- optimization in digital fabrication – nesting
- technique of developing prototypes, mock-ups, and detail designs
- design of architectural details at the workshop and executive level using CAD / CAM / CNC technology
- materials science in design practice - basic materials used in digital fabrication (similar wood products, plastics, 3D printing filaments, architectural concrete and construction, GFRC (Glassfibre Reinforced Concret), innovative use of traditional ones building materials
- basics of 3D mapping - displaying textures, colors and patterns on objects using digital projector, analysis of a product or small architectural object, basics of focus research and marketing

The subject will be divided into three episodes:
- theoretical part (lectures, presentations, reviews)
- design part (development of individual or group projects)
- workshop part (execution of the designed object using available fabrication methods)

Bibliography

none

Breakdown of average student's workload

	Hours	ECTS
Total workload	0	0,00
Classes requiring direct contact with the teacher	0	0,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	0	0,00