COURSE DESCRIPTION CARD - SYLLABUS

Course name
Innovatics [S2Arch1>INNO]

Course

Field of study
Architecture

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
0

Laboratory classes
0

Other (e.g. online)
0

Tutorials
0

Projects/seminars
45

Number of credit points

3,00

Coordinators

Lecturers

dr inż. arch. Marzena Banach
marzena.banach@put.poznan.pl

dr inż. arch. Maciej Bilski
maciej.bilski@put.poznan.pl

dr inż. arch. Marcin Giedrowicz
marcin.giedrowicz@put.poznan.pl

dr hab. inż. arch. Magdalena Gyurkovich
magdalena.gyurkovich@put.poznan.pl

dr inż. arch. Agnieszka Kasińska-Andruszkiewicz
agnieszka.kasinska-andruszkiewicz@put.poznan.pl

Marcin Konicki

dr hab. inż. arch. Hanna Michalak prof. PP
hanna.michalak@put.poznan.pl

mgr inż. arch. Patrycja Zawiska
patrycja.zawiska@put.poznan.pl

Prerequisites

- the student has an ordered, theoretically founded general knowledge covering key issues in the field of

design, composition and ergonomics - the student has a basic knowledge of development trends in the field of architectural design, - the student is able to make a critical analysis of the way of functioning and evaluate the existing technical solutions, devices, systems, processes and services related to architectural design and designing architectural details - the student is able to design a simple device and object using appropriate methods, techniques and tools - the student is aware of and understands the non-technical aspects and effects of engineering activities, including its impact on the environment and the related responsibility for decisions made, - correctly identifies and resolves dilemmas related to the profession,

Course objective

1. The aim of the course is to use (strengthen) the subconscious creative processes with the use of metaphorical associations related to the appearance, structure, functioning, development and evolution of living organisms. 2. The exercises consist in finding and adapting analogies relating to nature in order to obtain innovative design solutions. 3. Acquainting students with the methodology of searching for innovative design solutions. 4. Stimulating creative thinking in architectural design. 5. Practical teaching of creative development strategies. Designing an innovative architectural solution. The didactic assumption is based on the belief that innovation is one of the most important factors determining success in the profession of an architect.

Course-related learning outcomes

Knowledge:
A.W6. advanced analysis methods, tools, techniques and materials necessary to prepare design concepts in an interdisciplinary environment, with particular emphasis on inter-branch cooperation;
A.W8. the interdisciplinary nature of architectural and urban design and the need to integrate knowledge from other fields, as well as its application in the design process in cooperation with specialists in these fields.

Skills:
A.U5. evaluate the usefulness of advanced methods and tools for solving simple and complex engineering tasks, typical for architecture, urban planning and spatial planning, and select and apply appropriate methods and tools in design;
A.U8. think creatively and act, taking into account the complex and multi-faceted conditions of design activity, as well as expressing own artistic concepts in architectural and urban design;
A.U9. integrate information obtained from various sources, formulate their interpretation and critical, detailed analysis and draw conclusions from them, as well as formulate and justify opinions and demonstrate their relationship with the design process, based on the available scientific achievements in the discipline;
A.U10. communicate with the use of various techniques and tools in a professional and interdisciplinary environment in the scope appropriate for architectural and urban design and spatial planning;
A.U11. work individually and in a team, including with specialists from other industries, and take a leading role in such teams;
A.U12. estimate the time needed to complete a complex project task;
A.U13. formulate new ideas and hypotheses, analyze and test novelties related to engineering and research problems in the field of architectural and urban design and spatial planning;
A.U15. implement the principles and guidelines of universal design in architecture, urban planning and spatial planning.

Social competences:
A.S1. effectively use imagination, intuition, creative attitude and independent thinking in order to solve complex design problems;
A.S2.speak and presentat publicly;
A.S3. take the role of a coordinator of activities in the project process, manage work in a team and use interpersonal skills (resolving conflicts, negotiating skills, delegating tasks), comply with the rules of working in a team and take responsibility for joint tasks and projects;

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Assessment criteria and project evaluation method. An important criterion for project evaluation will be

the approach to the following issues:
a) searching for innovative solutions to a selected problem based on bionic analogies,
b) use of bionics as a heuristic operator,
c) improvement and rationalization of design concepts,
d) finding and separating conflicting parts or features and searching for compromises,
Summative assessment:
- the work consisting of a poster presenting the final effect of work on a selected design topic and a portfolio which is a graphic and text report from the entire project cycle is subject to evaluation
- works are assessed during the last class - exhibition of projects and voting for the 3 best works, the authors of which present the adopted design solutions in the forum of the group.
Assessment scale: 2.0; 3.0; 3.5; 4.0; 4.5; 5.0
Obtaining a positive grade for the module depends on the achievement by the student of all the learning outcomes listed in the syllabus.

Programme content

The subject of the student"s work is to develop a design solution for a utility object, object or architectural detail based on a bionic analogy.
- session in teams:
- providing students with information on the principles of using bionics as a heuristic operator
- formulating problems and solving them in innovative teams,
- generating ideas, ordering and evaluating solutions
- presentation of the effects of teams" work in the group forum
- preparation of documentation from group work,
- individual part:
- individual work on design concepts for a selected issue,
- creating concept variants in relation to future trends, modern technologies and other issues related to the subject of the project,
- improvement and rationalization of design concepts,
- preparation of a description of the innovativeness of the developed project,
- making a portfolio documenting all stages of work on the project,
- making a poster presenting the solution to a selected problem.

Teaching methods

1. Design.
2. eLearning Moodle (a system supporting the teaching process and distance learning).

Bibliography

Basic
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Additional
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Breakdown of average student's workload

	Hours	ECTS
Total workload	0	3,00
Classes requiring direct contact with the teacher	45	0,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	56	0,00