ARCHITECTURE AND URBAN DESIGN
DEGREE PROGRAM (B.Arch)

1. PROGRAM FACTS

Study Level: Undergraduate
Study Mode: Full Time
Course Profile: Academic
Course Domain: Technological Sciences combined with Fine Arts
Course Length: 8 semesters
Number of ECTS Credits Required for Graduation: 240
Areas of Academic Study and Academic Disciplines Evaluated by Learning Outcomes:
- Area of Academic Study: Technological Sciences
- Academic Discipline: Technology
- Field of Study: Architecture and Urban Sciences
and
- Area of Academic Study: The Arts
- Academic Discipline: Fine Art
- Field of Study: Fine Art
Degree Awarded upon Completion: Bachelor of Architecture (B. Arch)

2. FURTHER EDUCATION AND CAREER OPPORTUNITIES

Students who complete our program are qualified to work as assistants in the field of architecture. Upon receiving their licensure in architecture, the graduates are entitled to take on positions in private practices such as architecture and urban design firms, or in the public sector, government agencies, science and research institutes, research and development centers as well as engineering and construction firms. Students may also progress to Master of Architecture degree program.

3. PROGRAM OVERVIEW AND OBJECTIVES

Students who graduate from the program demonstrate knowledge of history and theories of architecture and urban design, fine arts, building and engineering technologies, construction, building engineering physics as well as architectural design and urban planning. They are familiar with building and technical regulations as well as organizational practices and investment processes. Students demonstrate research skills and know how to shape the environment to meet the practical expectations of its users, taking into account individuals with varying physical abilities. They are able to generate designs that fulfill aesthetic, practical and technical requirements. Students show knowledge and understanding of building laws, economics, and the organization of investment processes in Poland and EU member countries. Our graduates have a command of another foreign language equivalent to level B2 of CEFR. They leave the program well prepared to take on roles as assistants in the field of architecture, and in the sectors of construction and building inspection, urban planning as well as architecture and environmental design. They may pursue further education by applying to postgraduate studies.

4. LEARNING OUTCOMES

On completion of the B.Arch Architecture and Urban Studies program, students should be able to demonstrate the following subject knowledge, practical subject skills and social competencies:
SUBJECT KNOWLEDGE

B.Arch graduates of the University of Arts in Poznan will meet the following criteria:

- In the area of mathematics, students demonstrate knowledge of the following subjects:
  - elements of algebra and analysis – derivatives and their practical applications, elements of integrals;
  - systems of linear equations;
  - linear equations, equations of a plane;
  - parametric equations;
  - elements of mathematical logic;
  - elements of analytic geometry.

- In the area of descriptive geometry, students demonstrate knowledge of the following subjects:
  - perspective and axonometric projection;
  - methods of projection and restitution of space features;
  - shaping of geometric forms in architectural structures by using polyhedral, three-dimensional geometric shapes and surface;
  - applied perspective methods.

- In the area of building engineering physics, students demonstrate knowledge of the following subjects:
  - thermal and moisture qualities of dividing structures;
  - essential qualities of sunlight and artificial light;
  - in the field of acoustics – sound propagation in open spaces, architectural acoustic;
  - sound insulation of vertical dividing elements.

- In the area of structural engineering, students demonstrate knowledge of the following subjects:
  - two-dimensional statics;
  - analysis of coordinate systems of statically determinate structures;
  - graphical and analytical methods for determining forces;
  - strength of structures;
  - principles of modeling and combining structures with different load capacities;
  - determining load and resistance of structures.

- In the area of elementary architectural design, students demonstrate knowledge of the following subjects:
  - theories and principles of architectural design;
  - elements of composition;
  - practical application of CAD software for design.

- In the area of elementary urban design, students demonstrate knowledge of the following subjects:
  - theories and principles of urban planning;
  - elements of composition;
  - practical application of CAD software for design;
  - relationships between settings and qualities that mould spaces;
  - fundamentals of urban planning in Poland.

- In the area of history of architecture and urban design, students demonstrate knowledge of the following subjects:
  - cultural conditions for architecture and urban design;
  - history of general and Polish architecture;
  - basic trends in the development of contemporary architecture;
  - theories of architecture and urban design;
  - knowledge of styles in art and architecture.
In the area of general construction, engineering and material studies, students demonstrate knowledge of the following subjects:

- technical issues related to design and construction of architectural objects;
- principles of preparing technical drawings and specifications;
- types of building materials, their properties and practical application.

In the area of building structures, students demonstrate knowledge of the following subjects:

- principles of designing building structures.

In the area of building systems, students demonstrate knowledge of the following subjects:

- contemporary building systems;
- how various architectural solutions affect building architecture and plot development;
- designing energy efficient buildings.

In the area of visual arts, students demonstrate knowledge of the following subjects:

- developing awareness of form, color and composition;
- drawing, painting, photography and sculpture from nature and imaginary;
- practical skills and techniques;
- general issues related to fine arts, design, interior design, and stage design;
- general understanding of means of expression and techniques used in related art and design disciplines.

In the area of the economics of investment processes, students demonstrate knowledge of the following subjects:

- the fundamentals of financial aspects relevant to investment processes.

In the area of the organization of investment processes, students demonstrate knowledge of the following subjects:

- legal conditions relevant to design, issues related to projects execution;
- legal acts relevant to construction industry;
- local legislation;
- technical standards.

In the area of ethics in architecture, students demonstrate knowledge of the following subjects:

- code of ethics for architects.

Students demonstrate knowledge of communication strategies necessary to carry out their engineering projects.

In the area of landscape architecture, students demonstrate knowledge of the following subjects:

- basic principles of revival and restoration of environmentally damaged landscapes;
- fundamentals of natural sciences and soil ecology.

In the area of interior design, students demonstrate knowledge of the following subjects:

- an understanding of the principles of spatial arrangement as well as aesthetic, technical and functional requirements.

In the area of functional forms and furniture design, students demonstrate knowledge of the following subjects:

- fundamentals of design and realization of functional forms and furniture.

In the area of personal presentation and portfolio, students demonstrate knowledge of the following subjects:

- strategies for presenting their projects;
- preparation of designs for exhibition and publishing.

Students show awareness of artistic traditions relevant to fine arts and architecture.

Students demonstrate knowledge of financial, commercial and legal aspects relevant to the execution of architectural projects at different range and scope.

Students demonstrate knowledge of general managerial issues, including quality management, and business activity.

Students are familiar with common engineering technologies within the field of their chosen discipline.
PRACTICAL SUBJECT SKILLS

- Students are able to apply basic mathematical methods to their architectural and urban designs; they use their abstract thinking skills to acquire a deep understanding of technical problems.
- Students apply geometry in architectural design; they know how to build objects in perspective.
- While designing their buildings, students take into consideration a range of requirements such as thermal and moisture standards, fire safety solutions and appropriate lighting.
- Students show an understanding of key issues related to building engineering structures and systems. They know how to prepare static diagrams of structures, design structural elements, conduct stress analysis with respect to structural elements, as well as calculate load bearing capacity for a structure.
- Students are able to gather necessary resources to begin the design process, they know how to prepare functional programs and generate architectural projects that incorporate land development plans, taking into account comfort and safety requirements, including the needs of the disabled.
- Students know how to prepare starting materials, carry out site analysis and synthesis, formulate conclusions, and develop an urban plan taking into consideration social, environmental, cultural, legal and technical requirements.
- Students understand the relationships between historic and new architecture, they are able to assess and appreciate architectural objects taking into account a number of perspectives such as cultural values, aesthetics, structure and functionality.
- Students are able to prepare architectural construction documentation, skillfully applying their knowledge of construction materials as well as implementing the principles of sustainable and energy efficient buildings.
- Students know how to develop an architectural design with a range of structural elements.
- Students understand how the principles of system design are related to different functions of buildings.
- Students demonstrate craft and technical skills relevant to visual arts, they use a range of media and techniques (drawing, painting, graphics, sculpture and design) necessary for the final execution of their own creative ideas. They employ a wide range of creative and practical skills to convey and realize their own artistic concepts.
- Students show an understanding of economic processes relevant to the construction industry.
- Students understand the fundamental principles of investment processes in the construction industry. They understand legal regulations relevant to architectural design, legal acts concerning urban planning, government orders and directives as well as technical standards.
- Students follow the Code of Ethics for Architects.
- Students demonstrate practical skills in landscape design; they understand the basic issues related to green spaces, environmentally degraded areas, and conservation.
- Students are able to conceptualize their ideas as well as design spaces that provide harmony and comfort, and meet the standards for functionality and ergonomics.
- Students know how to develop their creative concepts for design, furniture and ceramics; they draw on and apply their skills acquired in the field of fine art, design and engineering.
- Students know how to create an art portfolio as well as presentations, publications and exhibitions.
- Students are able to come up with stylistically diverse design concepts, drawing on their imagination, intuition and emotionality.
- Students are prepared to work as part of a team on collaborative projects.
- Students demonstrate linguistic skills relevant to their chosen disciplines at a minimum of CEFR level B2.
- Students master a range of strategies for improving their practical skills within the context of their chosen disciplines, which enables sustained development achieved through independent work.
- Students are able to design and conduct experiments relevant to their chosen disciplines; they know how to take measurements, make computer simulations, interpret findings and draw conclusions.
− Students apply a range of tools (analytical strategies, simulation, experimental methodologies) while formulating and solving engineering problems.
− While formulating and solving engineering problems related to their chosen disciplines, students are able to notice their systemic and non-technical aspects.
− Students are capable of performing critical analyses in terms of functional properties. They are able to assess technical solutions applied in a given context, with a particular emphasis on devices, objects, systems, processes and services.
− Students are able to make identifications and lay down specifications for basic practical engineering problems, relevant to their chosen disciplines.
− Students know how to assess the usefulness of routine tools and methods for solving basic practical engineering problems, relevant to their chosen disciplines; they are able to select and apply the appropriate method and set of tools.
− Following a given specification, students are able to design and build a simple device, object, system or process, relevant to their chosen disciplines, by employing a range of appropriate methods, techniques and tools.

SOCIAL COMPETENCIES

− Students demonstrate a set of competencies allowing them to apply mathematics and descriptive geometry to carry out analyses, draw conclusions and create designs.
− Students demonstrate a set of competencies allowing them to employ their knowledge of building engineering physics, structural engineering, building structures, building systems, general construction and material studies.
− Students are qualified to create architectural and urban designs, working as part of a design team.
− Students are qualified to assess, revive and adapt historic objects, working as part of a team.
− Students are qualified to engage in creative projects within the contexts of fine arts and applied arts.
− Students are qualified to engage in investment processes in the construction industry; they have an understanding of the economics of those processes.
− Students are qualified to engage in professional projects, in line with the following laws and regulations: Building Code, Spatial Design Code, and Code of Ethics for Architects.
− Students are qualified to engage in projects in the field of landscape design, green areas, degraded areas, as well as conservation of natural and built environments.
− Students are qualified to engage in projects in the field of interior design, applied forms, furniture design and ceramics.
− Students know how to present themselves to the public, create portfolios, present projects, deliver presentations, organize exhibitions, and prepare publications.
− Students undertake independent projects, driven by intrinsic motivation and work organization skills.
− Students engage in self-driven projects, pursuing essential knowledge and information from other disciplines.
− Students effectively use their imagination, intuition, emotionality, creative thinking skills and creative work while solving problems.
− Students are able to critically evaluate their own practice as well as provide constructive feedback on other practitioners’ work; they reflect on social, academic and ethical issues related to their own creative practice.
− Students know how to present complex design problems and projects in an accessible manner, using a range of IT solutions.
− Students understand the need for lifelong learning and professional development.
− Students know and understand the principles of industrial property rights and copyright law, relevant to their chosen disciplines.
– Students are aware of and understand the non-technical aspects and effects of engineering activities, including their impact on the natural environment and the importance of accepting responsibility for their decisions.
– Students demonstrate entrepreneurial skills within the context of their chosen disciplines.