

Hybrid education in *Introduction to Architectural and Urban Design* in the *Architecture* syllabus

Anna A. Kantarek

Cracow University of Technology
Kraków, Poland

ABSTRACT: The aim of this article is to present the basics of the course conducted during the first semester of the first cycle of the *Architecture* curriculum in the Faculty of Architecture of Cracow University of Technology, Kraków, Poland. This course is an integral part of the entire programme. The article describes the content of the course, and the author discusses the rules for creating the course programme in the selection of sources of knowledge, formulating project tasks and methods supporting students' activity. The main conclusions of the article show the necessity to diversify the sources of knowledge (including written sources, case studies, observations), hybrid forms of shaping project skills (including freehand drawing, system actions) and preparation for working in a group.

INTRODUCTION

In the educational context, the term *hybrid* can refer to many different fields, but it often stands for the diversity of teaching methods and sources of knowledge. In the field of architecture and urban design, where education is geared to training design skills, pre-teaching is inherently hybrid as it must provide knowledge in different areas (systemically basic, which hinders the task), start shaping design skills, as well as develop basic cooperation skills. It is, of course, a part of a whole programme of hybrid character, in which both the individual elements of the curriculum and the opportunities to participate in various forms of additional or supplementary project tasks allow for a complete education of the student, as well as helping students to choose their own educational path and professional future [1][2].

This article refers to the teaching process conducted in the Faculty of Architecture of Cracow University of Technology, Kraków, Poland in the curriculum: *Architecture*. In recent years, due to changes in the educational system within higher education institutions in Poland, relating to the application of the Bologna System, the five years' teaching cycle was divided into two cycles: the Engineer's cycle, consisting of seven semesters, and the second, the Master's cycle, consisting of three semesters.

The two levels of teaching the Architecture programme have their own goals. The first cycle prepares a knowledge base, skills and social competencies, and it puts emphasis on shaping the skills of design creations in a situation of routine tasks and circumstances. The second cycle makes students face complicated tasks, requiring a broader view of situations and design problems, and preparing them to take professional responsibility and shape the attitude of continuous self-education.

The first two semesters of the first-cycle courses offer subjects that provide knowledge in various fields. In each of the two semesters, Introduction to Architectural and Urban Design consists of lectures (15 hours) and project classes (120 hours). The lectures are devoted to the introduction of many issues related both to the history of architecture and urban design and to contemporary developments.

However, the most important issue is to provide students with basic information about the theory of architecture and urban design, as well as with the basic principles of shaping functions and theories related to the perception of space. Within the scope of design, students perform a preliminary exercise (composition of solids in space with given parameters) and interior design (residential or workplace). Hence, the definition of requirements appropriate for both cycles was a natural consequence of this division.

The syllabus [3] developed for the curriculum: *Architecture* is consistent with the standards defined for this curriculum by the Regulation of the Ministry of Science and Higher Education [4]. This programme also has a number of Polish and international accreditations:

- Royal Institute of British Architects (RIBA) - since 2000;
- Accreditation Committee of Technical Universities - since 2002;
- National Accreditation Committee - since 2006;
- Polish Accreditation Committee - since 2013;
- EUR-ACE® Label (European Network for Engineering Accreditation (ENAE) accreditation system).

The programme has been formulated according to monitored teaching effects, such as knowledge, skills and social competence. The scopes thereof defined in the standards provided by the Ministry [4] depict the scope of education of the student at the first and second cycle of the university courses (Table 1).

Table 1: List of requirements to be satisfied by the graduate from the curriculum: *Architecture* according to the Ministry standards [4].

Teaching effects	First cycle according to the standards	Second cycle according to the standards
Knowledge	The graduate from the first-cycle courses should have the knowledge in the field of history and theory of architecture, and urban planning, fine arts, civil engineering and construction technologies, structures, construction physics, as well as architectural and urban design. The graduate should know technical construction regulations, as well as methods of organisation and execution of the investment process. The graduate should have the knowledge of the construction code, economics, organisation of the investment process and organisation of the design process in Poland and in member states of the European Union. The graduate should speak a modern foreign language at the B2 level according to the Common European Framework of Reference for Languages of the European Council.	The graduate should have the knowledge and skills in the field of: <ol style="list-style-type: none"> 1) architectural, urban and conservation design and spatial planning; 2) history and theory of architecture, theory of urban planning, fine arts, technical sciences and humanities; 3) shaping human environment including relations between people and architectural structures and the surrounding space; 4) application of procedures of developing designs of architectural structures taking social factors into account; 5) solving functional, practical, constructional, structural, engineering and technological problems to the extent of securing safe and comfortable use of structures, also by the disabled;
Skills	The graduate should have the skills of collecting information, shaping the environment of man in compliance with his practical needs - taking the needs of the disabled into account - and creating designs satisfying aesthetic, practical and technical requirements.	<ol style="list-style-type: none"> 6) application of technical constructional regulations and procedures, economics of design, as well as execution and use of an architectural structure and organisation of the investment process and integration of plans with planning projects in Poland and in member states of the European Union.
Social competence	The graduate should be prepared to undertake professional activities in the capacity of an assisting worker, as well as in construction and construction supervision in terms of urban design and design of architectural structures along with their surrounding space. The graduate should be prepared to undertake second-cycle courses.	The graduate should understand the role of the profession of an architect in the society and its effect on the quality of the environment. The graduate should comply with the rules of professional ethics. The graduate should be prepared to: <ol style="list-style-type: none"> 1) undertake creative activities in terms of architectural and urban design; 2) obtain professional licenses required by law; 3) perform independent functions in civil engineering; 4) design and manage construction works in the specialty of architecture; 5) coordinate works in multidisciplinary design teams; 6) manage architectural and urban design studios; 7) conduct business activity; 8) undertake research work.

		The graduate should be prepared to be employed by architectural and urban design studios, local and state administration entities, research institutes and consulting entities. The graduate should be prepared to undertake third-cycle courses (PhD).
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The list of requirements clearly indicates that the first cycle is geared towards gaining knowledge in different aspects and moulding broadly understood skills of *shaping the environment of man in compliance with his practical needs - taking the needs of the disabled into account - and creating designs satisfying aesthetic, practical, and technical requirements* [4].

It is implemented by means of posing initially easy design tasks and putting an emphasis on conscious design, taking into consideration all environmental requirements. Teaching design within the field of architecture and urban planning, and this type of design always focuses on synthesising numerous requirements, must be carried out through subsequent tasks with gradually growing complexity, as it refers to the moulding of synthetic wholes within the scheme of the creative process, which in the process of implementation of the design concept and its consecutive stages should develop according to pre-assumed general conditions.

Therefore, teaching in the first-year courses has a very special character. First, it refers to people who are coming into contact with professional topics for the first time. It is the moment when they enter a new environment and confront their earlier knowledge, notions and expectations concerning their future occupation with the reality. This education is special as in a way it also covers bringing up and moulding certain attitudes, values and professional ethics.

Secondly, the scope of knowledge, skills and social competence should - paradoxically - relate to everything that is connected with the profession and should provide a foundation for further education. Hence, it could be concluded that this education corresponds to the initial phase of learning a language, along with learning the alphabet, as broad a vocabulary as possible, as well as to presenting further possible directions, which could be assumed when working as an architect.

ARCHITECTURAL AND URBAN DESIGN - INTRODUCTORY SUBJECTS

Key subjects taught in the first year of the courses are lectures on *Introduction to the Theory of Architectural and Urban Design* (15 hours in the first and second semester). Due to the large number of students, the year is divided into two lecture groups. Practical design classes, on the other hand, are conducted in groups of 15 students under the supervision of four persons responsible for the subject and 15 persons who lead the design group. Professors teaching in individual groups implement their own programme, within the framework of mutual arrangements (Table 2).

The list of classes and number of teachers conducting the subject *Introduction to the Theory of Architectural and Urban Design* and *Introduction to Architectural and Urban Design at the first and second semester of the first year in the first-cycle courses in the curriculum: Architecture* is shown in Table 2. Design classes are carried out with the help of assistants in groups of 15 students.

Table 2: Design classes.

First semester		Second semester	
Lectures	Design classes	Lectures	Design classes
2	5	2	5

Three design tasks were conducted during the course within the framework of design classes given by the author.

1. Composition of defined elementary solids in space, dimensions 26 x 42 x 16 cm, with set conditions relating to the colour and textures. The task refers to a 1:1 scale model and to the project drawing preparation (projections, views, perspective, description) - (semester 1);
2. Interior design of an apartment or a part of a house as an introduction to designing an apartment or a one-family house, along with its spatial structure, function and detailed interior design - floor plans, sections, wall views, perspectives, selection of furniture and lighting - (semester 1);
3. Urban interior design (on Kraków-based examples) comprising modernisation of a square in terms of traffic-related needs and functions connected with the opportunity of people staying in the city square. The scope is broad, and it comprises studies and sketches, a 1:500 scale city square development (floor plan, sections, elevations), underground car parking, and a 1:250 scale design of a pavilion - (semester 2).

Supplementary tasks include two open-air drawings in urban interiors of Kraków during the first semester (street and square). An example of the first class design is shown in Figure 1.



Figure 1: First design task (1.5 months in semester 1) - composition of defined elementary solids in space, dimensions 26 x 42 x 16 cm, with set conditions relating to the colour and textures. Composition of models. (Photograph by A.A. Kantarek).

Within the framework of lectures held during the first semester (Table 3), students get acquainted with topics relating to the structure of the Faculty of Architecture, the academic staff, as well as with the history of this place and of teaching this profession.

Table 3: Lectures *Introduction to the Theory of Architectural and Urban Design*, semester 1 (Programme by A.A. Kantarek).

	Lecture title	Lecture content
1.	Structure of the Faculty of Architecture of Cracow University of Technology. History of the Faculty.	It refers to the basic knowledge on the environment, which is new for students in terms of people, place and history.
2.	Architecture. Definitions.	
3.	Architect. Mission and workshop.	
4.	<i>Theory of build architectural form.</i>	It is basic knowledge on architectural scale, its theory, basic environment of living, and human needs.
5.	Ergonomics of an apartment. Functions in an apartment.	
6.	Housing environment. Typology of buildings.	
7.	Universal design. The disabled.	
8.	Theory of urban composition.	It is basic knowledge on the urban scale, its theory and rules of environmental perception.
9.	Orientation in the space of the city.	
10.	Space of architecture	It is to present good cases of contemporary architecture and its urban context.

Next, basic definitions and information on architecture and urban planning as fields of arts and science, and the mission of the profession or an architect are presented.

Two subsequent thematic blocks refer to, respectively, the scale of architecture (theory of architectural composition, issues of ergonomics of habitat and housing environment, an universal design) and the scale of urban planning (theory of urban planning composition, orientation in the space of the city).

A separate block is a presentation of well-known works of contemporary architecture - their main concepts and assumptions, as well as their contextual relations in the urban structure (space of architecture).

Table. 4: Lectures *Introduction to the Theory of Architectural and Urban Design*, semester 2 (Programme by G. Schneider-Skalska).

	Lecture title	Lecture content
1.	Urban space design.	Structure of the city and methods of getting to know it, urban analysis - objective, method, tools. Hierarchy of urban space - public, social, private space. Design of a city square space. Contact of the building with its surroundings - traffic elements.
2.	Sustainable design - architecture vs. nature.	Sustainable design. Contemporary architects vs. principles of sustainable design. Outline of the history of garden design. Contemporary tendencies in the shaping of green areas. Revitalisation - examples of implementation.
3.	Introduction to the shaping of the housing environment.	Place and role of housing development in the structure of the city. Ecological housing projects. Housing environment in the 21st Century.

CONCLUSIONS

In his deliberations on the profession of an architect, Niemojewski grasped its mission so beautifully, referring to fundamental values offered to us by the Greek culture [5]. He interpreted good, truth and beauty with reference to requirements posed before an architect as the need of wisdom, truth and beauty. A wise architect is able to see and approach the tasks broadly. A rational architect has a deep insight into the essence and the spirit of the art thanks to the skills mastered. A talented architect works creatively, but also cares for beauty, nourishing and developing their own talent.

The contemporary notion of hybridity defining the relationship between different elements, often quite odd ones, seemingly has little to do with such a broad approach to the profession and its education as the one presented by Niemojewski. However, if one looks at the reality, the understanding of which escapes our abilities to perceive and evaluate only too often, one will see that the ability to broadly perceive different relations in their hybrid relations is important, and can become an onset of a creative pursuit of sense and significant relationality.

Therefore, this is not about the hybridity of tools, which is a subject so often raised in teaching methodologies (hybrid, blended learning), but about different scopes of hybridity of the reality and the professional possibilities that the graduate from the curriculum: *Architecture* needs to be prepared for. Some of them deserve reiteration:

- Authorised designer and creator in different spatial scales - as an architect, urban designer, spatial planner;
- Decision maker - in public services;
- Professional in investment and construction services;
- Civil engineering professional in terms of materials and technologies;
- Scientist and researcher;
- Expert in the field of architecture, urban design, spatial planning;
- Teacher (after obtaining an additional teaching license in compliance with the law);
- Critic;
- Journalist and populariser;
- Social activist.

It is worth mentioning another scope of hybridity, which is the relationship between the virtual reality and the four-dimensional reality and spiritual dimensions of man. These relations should be harmonised and defining them as hybrid ones is connected with the diagnosis of helplessness towards the world, which changes too fast. In daily educational struggles, it manifests itself too often as students' disregard for specific spatial and time dimensions. Therefore, classes that concentrate on the observation of the reality and interpretation thereof are so important. They comprise open-air sketches, work on 1:1 models, foundations of the urban analysis, as well as developing topics connected with the housing environment.

Architecture and urban planning fulfil their roles when they provide correct (good, unique, innovative) answers to the questions posed. Contemporary tasks that an architect and an urban planner need to face become more and more complex, and answers to them refer to numerous fields of study at the same time. Besides professional skills,

a designer's basic skill is the skill to be able to get around in many fields. It is to be the foundation for cooperation with many specialists, and it often stands for the ability to coordinate such joint activities.

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