



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Civil Engineering 2

	Course
Field of study	Year/Semester
Architecture	II / 3
Area of study (specialization)	Profile of study
Architecture	general academic
Level of study	Course offered in
First-cycle studies	English
Form of study	Requirements
full-time	compulsory

		Number of hours
Lecture	Laboratory classes	Other (e.g. online)
15	0	0
Tutorials	Projects/seminars	
0	30	
Number of credit points		
3		

Lecturers	
Responsible for the course/lecturer: dr inż. arch. Adam Sieniecki	Responsible for the course/lecturer: mgr inż. arch. Jędrzej Suchecki
e-mail: adam.sieniecki@put.poznan.pl	e-mail: jedrzej.suchecki@put.poznan.pl
Wydział Architektury Politechniki Poznańskiej ul. Jacka Rychlewskiego 2, 61-131 Poznań	Wydział Architektury Politechniki Poznańskiej ul. Jacka Rychlewskiego 2, 61-131 Poznań

Prerequisites

The student has a basic knowledge of general construction, material science, physics and mathematics useful for developing simple technical drawings in the field of architectural and construction inventory;

The student has basic knowledge of technical drawing and general construction related to the architectural object;

The student has well-ordered, theoretically grounded general knowledge covering the key issues in the field of general construction and materials science;

The student has basic knowledge of development trends in the field of general construction and materials science;

The student knows the basic methods, techniques, tools and materials used in the development of simple tasks in the field of free-hand technical drawing, general construction and material science;

Student knows and understands the general principles of copyright law;



The student is able to obtain information from literature, databases and other properly selected sources, including the English language. They are able to integrate information, interpret it and draw conclusions as well as formulate and justify opinions. to draw conclusions and to formulate and justify opinions;

Students will be able to communicate using concepts related to general construction and material science in a professional environment of architects;

Students will be able to prepare and present technical drawings in English;

Students can identify directions for further learning and implement the process of self-education;

The student is able to use hand drawing techniques appropriate to the realisation of technical drawings;

Students can perform measurements of existing buildings and rooms, interpret and record their results;

The student is able to use analytical methods to design elements of a simple civil structure (e.g. estimate the overall dimensions of the structure, calculate thermal insulation of partitions).

Students understand the need for lifelong learning, they are able to inspire and organize the learning process of others.

The student is able to adequately determine priorities for the realization of a project task specified by the instructor.

Students are able to identify and solve dilemmas related to the creation of technical documentation of a simple construction object.

The student is able to think and act analytically.

Course objective

Lectures objectives:

- provide knowledge about the conditions and possibilities of using particular building finishes;
- presentation and demonstration of the advantages of designing in the 'building module'; presentation of types of types of woodwork;
- presentation of the types and scope of instalations occuring and the building elements they effect;
- getting acquainted with not very popular part of designing which is interdiscipline coordination;
- presentation of basic legal acts related to designing and construction works;
- familiarize with the legal provisions that must be met in the design process so that project complies with applicable regulations;
- to raise awareness of professional responsibility at the stage of design, execution, as well as property management.

Design classes objectives:

- Learning the principles of making technical drawings as a basic component of the construction and detailed design;
- learning the principles of room and building inventory, and reflecting the existing state in the technical documentation;
- learning about the form of the technical documentation;
- Apply the principles of technical drawing that you have learned to your work;
- getting to know the binding rules of preparing lists of individual elements of the building, with



particular consideration of those made by the Architect;

- recall of knowledge regarding building materials;
- increased knowledge of the connections between different materials;
- apply practical knowledge of finishing materials.

Course-related learning outcomes

Knowledge

A.W1. architectural design for the implementation of simple tasks, in particular: simple facilities taking into account the basic needs of users, single- and multi-family housing, service facilities in residential complexes, public facilities in an open landscape or in an urban environment;

Skills

A.U1. design an architectural object by creating and transforming space so as to give it new value - in accordance with a given program that takes into account the requirements and needs of all users;

A.U6. integrate information obtained from various sources, formulate their interpretation and critical analysis;

A.U7. communicate using various techniques and tools in a professional environment appropriate for architectural and urban design;

A.U8. prepare architectural and construction documentation in appropriate scales in relation to the conceptual architectural design;

Social competences

A.S1. independent thinking to solve simple design problems;

A.S2. taking responsibility for shaping the natural environment and cultural landscape, including the preservation of the heritage of the region, country and Europe.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Formative assessment:

- evaluation of the drawing tasks (design classes)
- evaluation from the colloquium (lectures)

Summative Evaluation:

- evaluation obtained during the written colloquium (lecture),
- evaluation of the completed project work (classes)

The adopted grading scale: 2,0; 3,0; 3,5; 4,0; 4,5; 5,0.

Successful completion of the module depends on the student's achievement of all learning outcomes specified in the syllabus.



Programme content

Lectures content:

Lecture #1: Building finishing elements. Discussion of construction elements of finishing buildings: plaster, wall cladding, paint coatings and floors with particular emphasis on the advantages and disadvantages, and the possibility of using particular solutions.

Lecture #2: Introduction to building physics. A discussion of the basic principles of building physics related to heat transfer through the building partitions.

Lecture #3: Typification in construction. Discuss elements of typification in construction including dimensional typification. Presentation of the main advantages of typification with particular emphasis on the aspect of investment time and cost. Discussion of the basic types of window and door joinery - advantages and disadvantages of various solutions.

Lecture #4: Building installations and inter-branch coordination. Installations in residential, multi-family, public buildings. Types of installations occurring, building requirements that determine the possibility of running them, the need for their use and their impact on the architectural and structural design process. Discussion of the methodology of carrying out and tasks of inter-branch coordination on the basis of completed realized objects. Outline the difficulties associated with coordination especially in public buildings and industrial buildings.

Lecture #5: Building and construction layouts and solutions in public buildings and residential buildings. Discuss construction solutions in frame and wall systems depending on building type, determination of initial dimensions of building elements.

Lecture #6: Building maintenance, building disasters and failures. Causes of irregularities occurring in buildings: design, performance, operation, ecological. Discussion of the most important causes of failure as well as building disasters.

Lecture #7: Credit Colloquium. Credit for the semester.

Design classes content:

Class #1: Getting students acquainted with the subject matter of the course, discussing principles of technical drawing according to valid standards - markings, dimensioning, lines.

Class #2: Handing over design topics - garage building with usable attic in different material solutions.

Class #3 - 9: Consultation and verification of project assignment completion,

Class #10: Credit for task 1 - partial evaluation

Class #11: Discuss the principles of building and space inventories.

Class #12: An inventory of the building's assigned stairwell



Class #13-14: Consultation and verification of completion of drawing assignment.

Class #15: Completion of the project work, credit for task 2 - partial evaluation - credit of the semester.

Teaching methods

- Lectures,
- Lecture with multimedia presentation,
- Lecture with slideshows of photos from construction projects,
- eLearning Moodle (a system for supporting the teaching process and distance learning).

Bibliography

Basic

1. Markiewicz P., Budownictwo ogólne dla architektów, Archi-Plus, Arkady 2011;
2. Żeńczykowski W.. Budownictwo ogólne 2/1, Arkady , Warszawa
3. Żeńczykowski W.. Budownictwo ogólne 2/2, Arkady , Warszawa
4. Żeńczykowski W.. Budownictwo ogólne 3/1, Arkady , Warszawa
5. Żeńczykowski W.. Budownictwo ogólne 3/2, Arkady , Warszawa
6. E-script for the course "Civil Engineering 2".

Legislation:

6. PN-EN ISO 4157-1:2001 Rysunek budowlany. Systemy oznaczeń. Część 1: Budynek i części budynków.
7. PN-EN ISO 4157-2:2001 Rysunek budowlany. Systemy oznaczeń. Część 2: Nazwy i numery pomieszczeń.
8. PN-EN ISO 7519:1999 Rysunek techniczny. Rysunki budowlane. Ogólne zasady przedstawiania na rysunkach zestawieniowych.
9. PN-B-01025:2004 Rysunek budowlany. Oznaczenia graficzne na rysunkach architektoniczno-budowlanych (zamiast PN-70/B-01025).
10. PN-EN ISO 128-20:2002 Rysunek techniczny – Zasady ogólne przedstawiania – Część 20: Wymagania podstawowe dotyczące linii (zamiast PN-82/N-01616).
11. PN-EN ISO 128-23:2002 Rysunek techniczny – Zasady ogólne przedstawiania – Część 23: Linie na rysunkach budowlanych.
12. PN-ISO 4069:1999 Rysunek budowlany. Oznaczanie powierzchni na przekrojach i widokach. Zasady ogólne.
13. PN-B-01030:2000 Rysunek budowlany. Oznaczenia graficzne materiałów budowlanych. (łącznie z normą PN-ISO 4069:1999 zamiast PN-70/B-01030).
14. PN-B-01029:2000 Rysunek budowlany. Zasady wymiarowania na rysunkach architektoniczno-budowlanych.(Zamiast PN-60/B-01029).
15. PN-ISO 129:1996 i PN-ISO 129/Ak Rysunek techniczny. Wymiarowanie. Zasady ogólne. Definicje. Metody wykonania i oznaczenia specjalne. (Zamiast PN-82/N-01614 w zakresie zasad porządkowych, sposobów wymiarowania i uproszczeń wymiarowych).



16. PN-ISO 9431:1994 Rysunek budowlany. Części arkusza rysunkowego przeznaczone na rysunek, tekst i tabliczkę tytułową.
17. PN-ISO 7200:1994 Rysunek techniczny. Tabliczki tytułowe.
18. PN-80/N-01612 Rysunek techniczny. Formaty arkuszy.
19. PN-86/N-01603 Rysunek techniczny. Składanie formatów arkuszy.

Additional

20. Seria wydawnicza: Słabe miejsca w budynkach tomy 1-6 Arkady.

Breakdown of average student's workload

	Hours	ECTS
Total workload	86	3,0
Classes requiring direct contact with the teacher	48	2,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) ¹	86	3,0

¹ delete or add other activities as appropriate