

COURSE DESCRIPTION CARD			
The name of the course/module BUILDING CONSTRUCTION 2		Code A_K_1.4_005	
Main field of study ARCHITECTURE	Educational profile (general academic, practical) general academic	Year / term II/4	
Specjalization	Language of course: Polish	Course (core, elective) core	
Hours Lectures 30 Classes: 15 Laboratory classes: Projects: 15 :		Number of points 4	
Level of qualification: I	Form of studies (full-time studies/part-time studies) Full-time studies and part-time studies	Educational area(s) Technical Sciences	ECTS distribution (number and %) 2 50% 1 25% 1 25%
Course status in the studies' program (basic, directional, other) directional		(general academic, from a different major) general academic	
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Prerequisites defined in terms of knowledge, skills, social competences:			
1	Knowledge:	<ul style="list-style-type: none"> - student has explicit, theoretically based knowledge including the key issues of mathematics, the theory of structures, strength of materials - student has basic knowledge of use the above mentioned sciences in practice of constructional designing in the scope of timber and steel constructions, 	
2	Skills:	<ul style="list-style-type: none"> - student can acquire information from publications, data bases and other sources, can interpret the said information and can integrate the acquired information, - student is able to conceptually design the structural layout in steel construction for earlier developed mass of building facility of industrial type, 	
3	Social competences:	<ul style="list-style-type: none"> - student understands the need for lifelong learning; can inspire and organize process of learning other people, - student is aware of the importance of non-technical aspects and effects of engineering activities, - student can work and can cooperate in a group, assuming a number of different roles therein. 	
Objective of the course:			
<ul style="list-style-type: none"> ▪ presentation of general issues related to essence of the work and the use of reinforced concrete in building constructions, ▪ presentation of work specifics, load capacity and utility of reinforced concrete constructions on the basis of designing methods, ▪ presentation of basic assumptions for design the reinforced concrete constructions with the ability to use parameters contained in course publications, ▪ acquired the ability to implementation of course knowledge for basic structural solution in various cases of structural elements work. 			
Learning outcomes			
Knowledge:			
W01	Student has knowledge of building construction		AU1_W10

W02	Student has basic knowledge of useful lives of structural facilities	AU1_W22
Skills:		
U01	Student can acquire information from publications, data bases and other Polish and English sources, can interpret the said information and draw conclusions as well as voice and justify opinions	AU1_U01
U02	Student can carry out critical analysis of the manner of operation and assess the existing solutions as regards the engineering and structural issues in architectural designing	AU1_U18
Social competences:		
K01	Student can respectively determine priorities for the execution of goals set by himself/herself or by others; is fully aware of the importance of professional conduct; is aware of the liability for tasks performed jointly with others within the team work	AU1_K06
K02	Student can think and act in an entrepreneurial, creative and innovative manner	AU1_K07
The evaluation methods:		
<p><u>I. The credit conditions and evaluation method of knowledge presented during the lectures. An important criterion of course assessment is an approach to the following issues</u> Enforcement of course assessment in the form of exam in the exam session on the basis of:</p> <p>a) The scope of the knowledge presented at the lectures and knowledge obtained by student should determine the course credit. In passed knowledge can be distinguished the following aspects: basic and general knowledge of reinforced concrete construction subject including main issues related to design.</p> <p>b) The acquisition of routine in assessment of construction work in different parts of elements and facilities planned to be implemented in reinforced concrete construction.</p> <p>c) Consideration in tasks in the scope of reinforced concrete constructions the use of different types of solutions depending on nature of the work.</p> <p>d) The acquisition of the ability to graphic imitation of the earlier analytically designed elements in the reinforced concrete construction.</p> <p>e) The preliminary condition for admission to the exam are credited classes of reinforced concrete constructions and positive assessment of executed individual project of reinforced concrete construction.</p> <p><u>Summative assessment:</u> Obtaining the positive assessment for exam of building construction 1.</p>		
<p><u>II. The credit conditions and evaluation method of classes.</u> An important criterion of classes assessment is attendance at the classes and active participation (answer the questions) during board classes with presentation of construction analysis and graphic solutions of practical tasks in the scope of course.</p> <p><u>Formative assessment:</u> Participation of student in the course of solutions presented in the classes</p>		
<p><u>III. The credit conditions and evaluation method of design task.</u> Assessment criterion of project is its implementation in graphic and computational form while maintaining appropriate form to principles of implementation of design documentation for building and executive project according to building legislation.</p> <p><u>Formative assessment:</u> Participation of student in consultations related to implementation of design task.</p> <p><u>Summative assessment:</u></p> <ul style="list-style-type: none"> - attendance at classes and design classes with participation of seminar and consultation type. - execution of design task with positive grade. - obtainment the positive grade of building constructions 2 on the basis of exam. 		
<p>Positive grade for module depends on achieved by student all learning outcomes specified in the syllabus.</p>		
Course contents		
<p><u>1. Lecture:</u></p> <ul style="list-style-type: none"> - General principles of structural design. Share of structural solutions in architectural designs. - Loadings in structural analysis. The impact of loadings on work of various building construction. - Introduction. General characteristics of reinforced concrete constructions. - Physical, mechanical and timber data with classification. The stages of construction work. - Bending the construction. - Shearing in the construction. Axial compression and eccentric compression. - The limit state of use. Deflections of reinforced concrete constructions. - Reinforced concrete construction. - Industrial halls. - Details of executive solutions. - Principles and stages of preparation of design documentation in the scope of reinforced concrete constructions. <p><u>2. Classes:</u></p>		

- Introduction. Discussion of classes topics and credit conditions.
 - Principles of sections work.
 - Distribution of design topics with commentary. The issues related to the adoption of structural schemas and determining loadings.
 - Discussion of conditions related to reinforced concrete constructions work on bending, shearing, axial and eccentric compression.
 - Discussion of principles of graphic site development (construction drawings) of projects in the scope of reinforced concrete constructions. Distribution of auxiliary materials for designing.
 - **Discussion of issues related to realization technology of reinforced concrete constructions.**
- 3. Projects:**
- Introduction. General discussion of topics and the scope of project.
 - Presentation of the numerical example of reinforced concrete ceiling project. Adoption of static schemas and calculation of internal forces. Adoption of sections.
 - The numerical example. Construction analysis of the rib and panel.
 - Finishing the numerical example. Consultations in the scope of design task development.

Basic bibliography:

- PN-B-03264 –Konstrukcje betonowe, żelbetowe i sprężone. Obliczenia statyczne i projektowanie
- Małgorzata Murkowska – Projektowanie elementów żelbetowych – Wydawnictwo Politechniki Poznańskiej
- M. Kamiński; J., Pędziwiatr, D. Styś – Projektowanie konstrukcji żelbetowych wg PN-B-03264. Dolnośląskie Wydawnictwo Edukacyjne – Wrocław 2004.

Supplementary bibliography:

- Kobiak; Stachurski – Konstrukcje żelbetowe - ARKADY
- Włodzimierz Staropolski – Konstrukcje żelbetowe tom I i II według PN-B/03264; 2002 Eurpocode2

The student workload

Form of activity	godzin	ECTS
Overall expenditure	116	4
Classes requiring an individual contact with teacher	65	2
Practical classes	51	-

Balance the workload of the average student

Form of activity	Number of hours
participation in lectures	30 h
participation in classes and projects	15 + 15 = 30 h
preparation for classes	15 x 1 h = 15 h
participation in consultation of design task	3 h
develop of the design task	12h
preparation to the exam	24 h
attendance at exam	2 h

Overall expenditure of student: **4 ECTS credits** **116 h**

As part of this specified student workload

- activities that require direct participation of teachers:

30 h + 30h + 3h + 2h = **65h**

2 ECTS credits