COURSE DESCRIPTION CARD

The name of the course/module			Code
BUILDING CONSTRUCTION 1			**A_K_1.3_005**
Main field of study	Educational profile (general academic, practical)		Year / term
ARCHITECTURE	**general academic**		**II/3**
Specjalization	Language of course:		Course (core, elective)
-	**Polish**		**core**
Hours			Number of points
Lectures: **30** Classes: **15** Laboratory classes: **-** Projects / seminars: **15**			**3**

Level of qualification:	**Form of studies** (full-time studies/part-time studies)	**Educational area(s)**	**ECTS distribution (number and %)**	
I	**Full-time studies and part-time studies**	**Technical Sciences**	**3**	**100%**

Course status in the studies' program (basic, directional, other) (general academic, from a different major)

directional **general academic**

Lecturer responsible for the course/lecturer:

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Lecturer responsible for the course:

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Prerequisites defined in terms of knowledge, skills, social competences:

1	**Knowledge:**	• student has explicit, theoretically based knowledge including the key issues of mathematics, the theory of structures, strength of materials • student has basic knowledge in the building and executed project in construction branch and professional responsibility of designer
2	**Skills:**	• 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 for earlier developed mass of facility of industrial or general type
3	**Social Competences:**	• 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 team, assuming a number of different roles therein

Objective of the course:

- presentation of general issues related to essence of the work and the use of steel and timber in building constructions,
- knowledge of work specifics, load capacity and utility of steel and timber constructions on the basis of designing methods,
- presentation of basic assumptions to design the steel and timber constructions with the ability to use parameters contained in course publications
- the ability to implementation of course knowledge for basic structural solution in various work cases of structural elements.

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 and creative manner	**AU1_K07**

The evaluation methods:

I. The credit conditions and assessment method of knowledge presented during the lectures. An important criterion of course assessment is an approach to the following issues. Enforcement of course assessment in the form of exam during the exam session on the basis of:

a) Course contents presented during the lectures and knowledge obtained by student should determine the course credit. In the acquired knowledge can be distinguished the following aspects:
basic and general knowledge of steel construction subject including main issues related to design.
b) Get the routine in assessment of construction work in different parts of elements and facilities planned to be implemented in steel construction.
c) Consideration of different types of solutions depending on nature of the work in tasks related to steel constructions.
d) Obtainment of the ability to graphic imitation the earlier analytically designed elements in the steel construction.
e) The prerequisites for admission to the exam are credited classes of steel and timber constructions and positive assessment of executed individual project of steel construction.

Summative assessment:
Obtaining on the basis of exam the positive assessment of building construction 1' course.

II. The credit conditions and assessment method of classes.
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 including course contents.

Formative assessment:
Participation of student in the course of solutions presented at the classes.

III. The credit conditions and assessment method of design task.
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.

Formative assessment:
Participation of student in consultations related to implementation of design task.

Summative assessment:
- attendance at classes and design classes with participation of seminar and consultation type.
- execution of design task with positive assessment.
- obtainment the positive assessment of building constructions 2 on the basis of exam.

Positive grade for module depends on achieved by student all learning outcomes specified in the syllabus.

Course contents

1. Lecture:
- General principles of structural design. Participation of structural solutions in architectural design.
- Loadings in structural analysis. The impact of loadings on work of various building construction.
- Introduction. General characteristics of steel and timber 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 steel and timber constructions.
- Timber construction.

- Connections in steel constructions.
- Industrial halls.
- Details of executive solutions.
- Principles and stages of preparation of design documentation related to steel and timber constructions.

2. Classes:

- Introduction. Discussion of classes contents 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 work of steel constructions on bending, shearing, axial and eccentric compression.
- Discussion of principles of graphic site development (construction drawings) of projects in the scope of steel constructions. Distribution of auxiliary materials for designing.
- Discussion of issues related to executive technology of steel constructions.

3. Project:

- Introduction. General discussion of topics and project contents.
- Presentation of the numerical example of steel ceiling project. Adoption of static schemas and calculation of internal forces. Adoption of sections.
- The numerical example. Construction analysis of the rib from main beam and pillar.
- Finishing the numerical example. Consultations in the scope of design task development.

Basic bibliography:

1.PN-B-03202 – Konstrukcje stalowe. Obliczenia statystyczne i projektowanie.
2.PN-B-03150 – Konstrukcje drewniane. Obliczenia statyczne i projektowanie.
3.Łubiński , Filipowicz, Żółtowski – Konstrukcje metalowe cz. I i II Arkady
4.Bogucki, Żyburtowicz – Tablice do projektowania konstrukcji metalowych - Arkady

Supplementary bibliography:

W. Bogucki - Budownictwo stalowe – ARKADY

The student workload

Form of activity	Hours	ECTS
Overall expenditure	93	3
Classes requiring an individual contact with teacher	65,5	2
Practical classes	63	2

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 0,5 h = 7,5 h
participation in consultation of design task	3,5 h
develop of the design task	10h
preparation to the exam	10 h
attendance at exam	2 h

Overall expenditure of student: **3 ECTS credits** **93 h**

As part of this specified student workload

- activities that require direct participation of teachers:

30 h +15h + 15h + 3,5 h + 2h = **65,5 h** 2 **ECTS credits**