



1. Course number and name

RB-S1-19-S54-77, **Review of Famous World's Structures**

2. Credits and contact hours*

2 ECTS, lectures: 30 hours**, classes: 0 hours**, project: 0 hours**

3. Instructor's or course coordinator's name

Szymon Dawczyński PhD

4. Text book, title, author, and year

- Williams G.: Amazing structures of the World: Incredible feats of architecture from around the world, New Holland Publishers
- Greenstein R. et al.: The World's Greatest Buildings: Masterpieces of Architecture & Engineering, Time Life Education

a. other supplemental materials

- Current articles and reports from scientific journals, e.g. Structural Concrete, Structural Engineering International.
- Websites devoted to the described structures.

5. Specific course information

a. brief description of the content of the course (catalog description)

Lectures:

The course covers explanation of advanced problems of structural systems used in different structures basing on examples of famous projects from all over the world. High-rise buildings: development of structural systems, use of steel, reinforced concrete, prestressed-concrete and composite materials. Problems of fire resistance, seismic loads, wind loads – exemplary solutions in the past half-century and future projects. Bridges: main groups of structural systems, recent achievements, use of advanced materials, future projects. Shell structures as a roof structures and other parts of buildings. Containers. Towers. Dams. Viaducts. Sport structures: famous stadiums and halls. Off- shore structures.

Classes:

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Project:

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b. prerequisites or co-requisites

No prerequisites and additional requirements



c. indicate whether a required, elective, or selected elective (as per Table 5-1) course in the program

Elective.

6. Specific goals for the course

a. specific outcomes of instruction, ex. The student will be able to explain the significance of current research about a particular topic

The student can:

- make classification and evaluation of building structures,
- describe selected structural systems and basic mechanisms of load transfer,
- make a list of loads acting on building objects.

b. explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

K1A_W10, K1A_U01

7. Brief list of topics to be covered

1. Basic information: high-rise buildings history and development of structural systems.
2. High-rise buildings: detailed description of the construction on the example of the tallest buildings in the world (Burj Khalifa, Shanghai Tower).
3. Structural issues of construction of the tallest viaduct in Europe (Viaduct Millau, France).
4. Structural issues of construction of artificial islands (on the example of Kansai Airport, Osaka, Japan).
5. Structural issues of construction of famous bridges (on the example of Golden Gate Bridge, San Francisco, USA).
6. Structural issues of construction of dams (on the example of Hoover Dam, USA).
7. Structural issues of construction of famous canals (on the example of the Panama Canal, Panama).

*- Consultations were not included in the contact hours

** - per semester