MODULE SPECIFICATION

Module code	
Module title in Polish	**Some Aspects of Materials Strength**
Module title in English	**Some Aspects of Materials Strength**
Module running from the academic year	**2016/2017**

A. MODULE IN THE CONTEXT OF THE PROGRAMME OF STUDY

Field of study	**Civil Engineering**
Level of qualification	**First cycle** *(first cycle, second cycle)*
Studies profile	**Academic** (*academic/practical)*
Mode of study	**Full-time** *(full-time / part-time)*
Specialism	
Organisational unit responsible for module delivery	**The Department of Strength of Materials and Concrete Structures**
Module co-ordinator	**Prof. Wiesław Trąmpczyński, PhD hab., Eng.**
Approved by	**Marek Iwański, Professor**

B. MODULE OVERVIEW

Module type	**Core module** (*core/programme-specific/elective HES*)*
Module status	**Compulsory module** *(compulsory / non-compulsory)*
Language of module delivery	**English**
Semester in the programme of study in which the module is taught	**Semester 4**
Semester in the academic year in which the module is taught	**Summer/Winter semester** *(winter / summer)*
Pre-requisites	**None** (*module code/module title, where appropriate)*
Examination required	**No** *(yes / no)*
ECTS credits	**3**

Mode of instruction	**lectures**	**classes**	**laboratories**	**project**	**others**
Total hours per semester	**15**				

* elective HES − elective modules in the Humanities and Economic and Social Sciences

C. LEARNING OUTCOMES AND ASSESSMENT METHODS

Module aims	After lectures students should: - have basic knowledge of English terminology, - have basic knowledge considering mechanical properties of materials, - have basic knowledge to determinate relations between external loadings and stress and strain.

Module outcome code	Module learning outcomes	Mode of instruction *(l/c/lab/p/ others)*	Corresponding programme outcome code	Corresponding discipline-specific outcome code
W_01	A student knows basic vocabulary as regards materials strength.	l	B_W06	T1A_W02; T1A_W03; T1A_W06
U_01	A student has basic knowledge of specialist vocabulary in English.	l	B_U28	T1A_U01; T1A_U03; T1A_U04; T1A_U05; T1A_U06
K_01	A student can work individually and in a team.	l	B_K01 B_K05 B_K07	T1A_K01; T1A_K03; T1A_K04; T1A_K05; T1A_K07
K_02	A student is responsible for the reliability of the completed work.	l	B_K02 B_K03 B_K07	T1A_K01; T1A_K02; T1A_K03; T1A_K05; T1A_K06; T1A_K07

Module content:

1. Topics to be covered in the lectures

No.	Topics	Module outcome code
1	Equilibrium of a deformable body (external loads – types of forces, support forces, equations of equilibrium, free body diagram).	W_01 U_01 K_01, K_02
2	Reduction of the loading system to an arbitrary point.	W_01 U_01 K_01, K_02
3	Structural supports, calculation of reaction forces.	W_01 U_01 K_01, K_02
4	Calculation of the resultant force and moment acting within the body, force and moment diagrams.	W_01 U_01 K_01, K_02
5	Stress and strain (normal stress, Saint-Venant's principle, shear stress, volume strain, shear strain).	W_01 U_01 K_01, K_02
6	Stress-Strain experiments (stress-strain diagram, Hooke's law, Poisson's ratio).	W_01 U_01 K_01, K_02
7	Geometric properties of an area (centroid of an area, first moment, composite areas, moment of inertia of an area, composite areas, moment of inertia for an area)	W_01 U_01 K_01, K_02
8	Stress calculation in the case of simple structures (beams).	W_01

		U_01 K_01, K_02

2. Topics to be covered in the classes
3. Topics to be covered in the laboratories
4. Topics to be covered in the projects

Assessment methods

Module outcome code	Assessment methods *(Method of assessment; for module skills − reference to specific project, laboratory and similar tasks)*
W_01	A presentation, a group discussion
U_01	A presentation, a group discussion
K_01	A presentation, a group discussion
K_02	A presentation, a group discussion

C. STUDENT LEARNING ACTIVITIES

ECTS summary		
	Type of learning activity	**Study time/ credits**
1	Contact hours: participation in lectures	**15**
2	Contact hours: participation in classes	
3	Contact hours: participation in laboratories	
4	Contact hours: attendance at office hours (2-3 appointments per semester)	**2**
5	Contact hours: participation in project-based classes	
6	Contact hours: meetings with a project module leader	
7	Contact hours: attendance at an examination	
8		**2**
9	**Number of contact hours**	**19** *(total)*
10	**Number of ECTS credits for contact hours** *(1 ECTS credit =25-30 hours of study time)*	**0.8**
11	Private study hours: background reading for lectures	**20**
12	Private study hours: preparation for classes	
13	Private study hours: preparation for tests	
14	Private study hours: preparation for laboratories	
15	Private study hours: writing reports	**26**
16	Private study hours: preparation for a final test in laboratories	
17	Private study hours: preparation of a project/a design specification	
18	Private study hours: preparation for an examination	**10**
19		
20	**Number of private study hours**	**56** *(total)*
21	**Number of ECTS credits for private study hours** *(1 ECTS credit =25-30 hours of study time)*	**2.2**
22	**Total study time**	**75**
23	**Total ECTS credits for the module** *(1 ECTS credit =25-30 hours of study time)*	**3**
24	**Number of practice-based hours** *Total practice-based hours*	**26**

25	**Number of ECTS credits for practice-based hours** *(1 ECTS credit =25-30 hours of study time)*	