

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Tall and supertall buildings</b>		Code <b>1010102131010114740</b>
Field of study <b>Civil Engineering Second-cycle Studies</b>	Profile of study (general academic, practical) <b>(brak)</b>	Year /Semester <b>2 / 3</b>
Elective path/specialty <b>Structural Engineering</b>	Subject offered in: <b>Polish</b>	Course (compulsory, elective) <b>elective</b>
Cycle of study: <b>Second-cycle studies</b>	Form of study (full-time, part-time) <b>full-time</b>	
No. of hours Lecture: <b>15</b> Classes: <b>-</b> Laboratory: <b>-</b> Project/seminars: <b>-</b>		No. of credits <b>2</b>
Status of the course in the study program (Basic, major, other) <b>(brak)</b>		(university-wide, from another field) <b>(brak)</b>
Education areas and fields of science and art <b>technical sciences</b> <b>Technical sciences</b>		ECTS distribution (number and %) <b>2 100%</b> <b>2 100%</b>
<b>Responsible for subject / lecturer:</b> prof. nadzw. dr hab. Inż. Tomasz Z. Błaszczyński email: tomasz.blaszczynski@put.poznan.pl tel. 61 665 28 61 Wydział Budownictwa i Inżynierii Środowiska ul. Piotrowo 5, 60-965 Poznań		<b>Responsible for subject / lecturer:</b> -Dr Inż. Jacek Wdowicki email: -e-mail: jacek.wdowicki@put.poznan.pl tel. -tel. 61 665 24 62 -Wydział Budownictwa i Inżynierii Środowiska -ul. Piotrowo 5, 60-965 Poznań
<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	The basic knowledge from the construction engineering.
2	<b>Skills</b>	Best to design the building.
3	<b>Social competencies</b>	The consciousness of the necessity of continuous updating and supplementings of the building knowledge and engineer skills.
<b>Assumptions and objectives of the course:</b> The delivery the maximum of the knowledge from the tall buildings.		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b>		
1. Student knows rules of the creations of the tall buildings. - [-]		
2. Student knows rules of the creations of the static and dynamic on tall buildings. - [obciążeń statycznych i dynamicznych oddz-]		
3. Student knows norms and guidelines of the designing of tall building. - [-]		
4. Student knows and applies regulations of the construction law. - [-]		
5. The student has a knowledge of the influence of construction investments realization on the environment. - [-]		
<b>Skills:</b>		
1. Student can select materials and technologies for the realization of the tall buildings. - [-]		
2. Student can design under BW software. - [-]		
3. Student can design structure of tall building. - [-]		
<b>Social competencies:</b>		

1. Student independently supplements and extends the knowledge of within the range modern processes and technologies in construction. - [-]
2. Student is responsible for the honesty of obtained results of his own works and the estimation of works of the team subjected to him. - [-]
3. Student has a consciousness of the necessity of the lifting of professional and personal competences. - [-]
4. Student has a consciousness of the need of the sustainable development in construction. - [-]
5. Student understands the need of the transfer to the society of the construction knowledge. - [-]

### Assessment methods of study outcomes

-Assessment of knowledge:  
 activity during classes and a lectures  
 knowledge presented during the colloquium,  
 project.

colloquium,  
 project.

The grading scale determined from:

Points:	grade:
higher then 100	excellent (A+)
91 100	very good (A)
81 90	dobra plus (B)
70 80	good plus (C)
61 70	adequate plus (D)
51 60	adequate (E)
Lower then 50	inadequate (F)

### Course description

Teraźniejszość i przyszłość budownictwa wysokiego  
 Loadings on tall buildings  
 Foundation in tall buildings  
 Structure of tall buildings  
 Transportation in tall buildings  
 Elevation in tall buildings  
 Technologies and realisation of tall buildings  
 Obliczanie budynków wysokich obciążonych statycznie i dynamicznie  
 Zasady projektowania budynków wysokich

#### Basic bibliography:

1. Adam Zbigniew Pawłowski, Ireneusz Cała: Budynki wysokie, Oficyna Wydawnicza PW, Warszawa 2006 i 2012
2. Jacek Wdowicki, Elżbieta Wdowicka, Tomasz Błaszczczyński, Integrated system for analysis of shear wall tall buildings, Proceedings of the Fifth World Congress Habitat and the High-Rise &#38;#38;#34;Tradition and Innovation&#38;#38;#34;, Amsterdam, 1995, 1309-1324
3. Jacek Wdowicki, Elżbieta Wdowicka, Tomasz Błaszczczyński, System of programs for dynamic analysis of shear wall tall buildings, International Conference on Lightweight Structures in Civil Engineering, Warszawa, 1995, 440-445.
4. Elżbieta Wdowicka, Jacek Wdowicki, Tomasz Błaszczczyński, Seismic analysis of the South Gate tall building according to Eurocode 8, The Structural Design of Tall and Special Buildings, 2005, 14, 59-67
5. Tomasz Błaszczczyński, Jacek Wdowicki, Static and dynamic analysis of developed Office building In Poznań (Poland), IASS Symposium: Spatial Structures ? Temporary and Permanent, Shanghai, China, 2010, 545-546.

**Additional bibliography:**

1. Jacek Wdowicki, Elżbieta Wdowicka, Tomasz Błaszczyński, The performance of buildings with shear walls under dynamic action, XVII Symposium on Vibrations in physical systems, Błażejewko'96, 258-259.
2. Elżbieta Wdowicka, Jacek Wdowicki, Tomasz Błaszczyński, Analiza wpływów sejsmicznych na budynek ścianowy o wysokości 100 m, Zeszyty Naukowe Politechniki Rzeszowskiej, Nr 197, z. 60, 2002, 591-598.
3. Jacek Wdowicki, Elżbieta Wdowicka, Tomasz Błaszczyński, Analiza statyczno-wytrzymałościowa konstrukcji rewitalizowanego budynku biurowego, Workshop on Advanced Mechanics of Urban Structures, 24-25.09.2003, Gdańsk, 113-116
4. Elżbieta Wdowicka, Jacek Wdowicki, Tomasz Błaszczyński, Analiza wpływów sejsmicznych na żelbetowy budynek ścianowy według normy ISO/DIS-3010, X Sympozjum Wpływy sejsmiczne i parasejsmiczne na budowlę, Kraków, 11, 2003, 153-160.
5. Elżbieta Wdowicka, Jacek Wdowicki, Tomasz Błaszczyński, Dynamic behaviour of the 'South Gate' Complex, International Summer School on Full-Scale and Model Scale Studies of Dynamic Behaviour of Large Structures, Opole-Otmuchów, 19-23.07.2004 r.
6. Tomasz Błaszczyński, Jacek Wdowicki, Elżbieta Wdowicka, Static and dynamic analysis of revitalised office building from 70's in Poland, Proceedings of COMPDYN 2009, ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, M. Papadrakakis, N.D. Lagaros, M. Fragiadakis (eds.), Rhodes, Greece, 22-24 June 2009, 262
7. Tomasz Błaszczyński, Jacek Wdowicki, Rehabilitation of an Existing Office Block, Engineering, 3, 2011, 435-444.
8. Błażej Gwozdowski, Tomasz Błaszczyński, Jacek Wdowicki, Analiza technologii realizacji budynku wysokiego na przykładzie Shanghai World Financial Center (SWFC), Przegląd Budowlany, 3, 2012, 23-31.

**Result of average student's workload**

Activity	Time (working hours)	
1. participation in lectures	15	
2. participation in project classes	15	
3. participation in the consultation	16	
4. preparation to attend and pass the colloquium	12	
5. project realisation	26	
Student's workload		
Source of workload	hours	ECTS
Total workload	84	2
Contact hours	46	1
Practical activities	38	1