

## COURSE DESCRIPTION

<b>Name of the Course:</b>		<b>Tall Buildings Structures</b>						
<b>Specialization Code:</b>		<b>U02.07.ICV.IZ.M26</b>		<b>Course Code:</b>		<b>3.DS.OP11</b>		
<b>Year of study:</b>	<b>2</b>	<b>Semester:</b>	<b>3</b>	<b>Examination form:</b> (E-Exam; Co- Colloquy; P-Project; P/F-Passed/Failed)	<b>E</b>	<b>ECTS credits granted (CR):</b>	<b>E (Co)</b>	<b>6</b>
							<b>P (P/F)</b>	
<b>Course Category:</b> (DF- Fundamental; DD- General engineering; DS-Specialty engineering; DC-Complementary; PR-Practical stage)								<b>DS</b>
<b>Course Type:</b> (OB-Compulsory; OP-Elective; FC-Facultative)								<b>OP</b>
<b>Number of hours per semester:</b> Total of hours per week (TH) x Number of weeks per semester								
<b>TOTAL :</b>	112	<b>Individual study (IS):</b>			56	<b>Contact hours (C + S;L;P):</b>		56
<b>Academic staff member in charge:</b> (Full name, Academic position and Department)				<i>Radu PASCU, Professor, Reinforced Concrete Structures</i> <i>Bogdan ȘTEFĂNESCU, Associate Professor, Steel Structures</i>				
<b>Faculty</b>	<b>Engineering in foreign languages</b>			<b>Number of contact hours per semester</b>				
	<b>Master study programme</b>			<b>Total</b>	Course	Seminar	Laboratory	Project
<b>Field</b>	<b>Civil Engineering</b>							
<b>Specialization</b>	<b>Structural Engineering</b>			56	28		28	
<b>Course objectives - Description of the main competences:</b> Choice of the structural system, establishing loads, checking of structural members, detailing								
<b>Content description:</b>								
<b>1. COURSE</b>		<ol style="list-style-type: none"> <li>1. Introduction: structural concepts, examples of outstanding buildings</li> <li>2. Actions. Specific aspects for tall buildings</li> <li>3. Efficient reinforced concrete, steel or composite steel-concrete structural systems for tall buildings</li> <li>4. Specific analysis methods</li> <li>5. Structural design. Strength, stiffness, ductility, hysteretic stability</li> <li>6. Special design issues</li> <li>7. Envelopes. Design of different façade types</li> <li>8. Infrastructures and foundations</li> <li>9. Mechanical equipments for tall buildings</li> <li>10. Technologies for tall buildings</li> </ol>						
<b>2. Seminar / Laboratory / Project / Practical stage</b>		Design of a tall building structure, detailed at the scheme design level. structural material will be chosen between reinforced concrete, steel, composite steel-concrete.						

<b>3. Bibliography</b>	<ol style="list-style-type: none"> <li>1. Smith, B.S., Coull, A. (1991), Tall Building Structures: Analysis and Design, John Wiley &amp; Sons, New York, 537 p.</li> <li>2. Taranath, B.S. (1998), Steel, Concrete, &amp; Composite Design of Tall Buildings, McGraw Hill, Boston, 998 p.</li> <li>3. Chew, Y.L.M (2007), Construction Technology for Tall Buildings, Singapore University Press, Singapore, 417 p.</li> <li>4. Tall Buildings Initiative. (2010). Guidelines for performance-based seismic design of tall buildings. PEER report 2010/05.  <a href="http://peer.berkeley.edu/publications/peer_reports/reports_2010/web_PEER2010_05_GUIDELINES.pdf">http://peer.berkeley.edu/publications/peer_reports/reports_2010/web PEER2010_05 GUIDELINES.pdf</a></li> <li>5. Holmes, W., Kircher, C., Petak, W., Youssef, N. (2007). Seismic performance objectives for tall buildings. PEER report 2008/01.  <a href="http://peer.berkeley.edu/publications/peer_reports/reports_2008/webPEER_801_HO LMES_TBI.pdf">http://peer.berkeley.edu/publications/peer_reports/reports_2008/webPEER_801_HO LMES_TBI.pdf</a></li> </ol>
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Criteria to be considered for the final mark	Weight of each criterion in the final mark (%)
1. Exam defence (final examination)	50
2. Appreciation during the entirely semester	
2.1 Seminar activity	25
2.1 Laboratory activity	25
2.2 Project activity (the project has not a distinct final mark)	
3. Periodical examinations	
3.1 Written / oral examination	
3.2 Home works, reports, essays etc.	
4. Other criteria (to be specified)	
Short description of the final evaluation procedure: written exam	

Estimation of the total number of hours per semester requested for the individual study (IS)			
Type of individual activity	No. of hours	Type of individual activity	No. of hours
1. Study of the course notes	14	8. Preparation of the final examination	10
2. Study of the compulsory bibliography	8	9. Advisory class participation	2
3. Study of the supplementary bibliography	6	10. Practical documentation on site	
4. Preparation of specific activities	14	11. Additional documentation on library	2
5. Preparation of home works		12. Internet network documentation	
6. Preparation of periodical written examinations		13. Others (to be specified)	
7. Preparation of periodical oral examinations		<b>TOTAL number of hours</b>	<b>56</b>

**Date:**  
septembre 2017

**Signature of the Academic Staff member in charge:**  
*Radu PASCU*  
Bogdan ȘTEFĂNESCU