COURSE DESCRIPTION

Name of the Course:	**Masonry and Wooden Structures**							
Specialization Code:	**U02.07.ICV.IZ.M26**			**Course Code:**	**3.DS.OB11**			
Year of study:	**2**	**Semester:**	**3**	**Examination form:** (**E-**Exam; **Co-** Colloquy; **P-**Project**; P/F-**Passed/Failed)	**E**	**ECTS credits granted (CR):**	**E (Co)**	**4**
							P (P/F)	
Course Category: (**DF**- Fundamental; **DD**- General engineering; **DS**-Specialty engineering; **DC**-Complementary; **PR**-Practical stage)								**DS**
Course Type: (**OB**-Compulsory**; OP**-Elective**; FC**-Facultative)								**OB**
Number of hours per semester: Total of hours per week (TH) x Number of weeks per semester								
TOTAL :	56	**Individual study** (IS)**:**		28	**Contact hours (C + S;L;P):**			28
Academic staff member in charge: (Full name, Academic position and Department)		*Stoica Nicolae Daniel – Associate Professor - CCIUT*						

Faculty	**Engineering in foreign languages Master study programme**		**Number of contact hours per semester**				
			Total	Course	Seminar	Laboratory	Project
Field	**Civil Engineering**						
Specialization	**Structural Engineering**		28	28			

Course objectives - Description of the main competences:
Knowledge and facilities in masonry and wooden structural systems design.

Content description:

1. COURSE

First part – Masonry Structural Systems ……. 16 hours

- Materials properties: units, mortar, composite materials;
- Types of masonry structural systems, usage, superstructures and infrastructures conformation;
- Structural analysis methods by considering both the linear and nonlinear behavior of masonry structures; soil-structure interaction;
- Masonry structures ductility;
- Structural analysis models for masonry superstructures;
- Structural analysis models for soil-structure interaction;
- Masonry building structures vulnerabilities: in plane and out of plane masonry walls behavior.

Second part – Wooden Structural Systems …….. 12 hours

- Timber and glulam properties;
- Composing principles of wooden houses;
- Constructive solutions for structural elements and partitions;
- Wooden walls and frames;
- Joints composition and behavior;
- Modeling, behavior and design of wooden structures for gravitational and horizontal actions;
- Wooden structures ductility.

2. Bibliography	- CR6 - Masonry Structures Design Code - Daniel Stoica - Structural modeling of masonry wall with ETABS program - Daniel Stoica – Soil-structure interaction modeling with ETABS program - Daniel Stoica – Wooden structure modeling with ETABS or SAP2000 program - Daniel Stoica – Courses notes - Ehsan Minaie – Vulnerability of reinforced masonry structures in seismic regions - Miha Tomazevic – Earthquake resistant design of masonry buildings - Narendra Taly – Design of reinforced masonry structures - Frederick Putnam Spalding – Masonry structures -Thomas Paulay, M.J.Nigel Priestley – Seismic design of reinforced concrete and masonry buildings - A.W. Hendry, B.P. Sinha, S.R. Davies – Design of Masonry Structures - Paulo José Brandão Barbosa Lourenço - Computational strategies for masonry structures - Donald E. Breyer, Kenneth J. Fridley, Kelly E. Cobeen, David G. Pollocj Jr. – Design of wood structures - E.C. Ozelton, J.A. Baird – Timber Designers's Manual - J. Porteous, A. Kermani – Structural Timber Design to Eurocode 5 - A. Kemany – Structural Timber Design - F. Naeim, J.M. Kelly – Design of Seismic Isolated Structures – From Theory to Practice - Morandi, P. (2007). Inconsistencies in Codified Procedures for Seismic Design of Masonry Buildings. Master Degree Dissertation, European School for Advanced Studies in Reduction of Seismic Risk, Rose School, Pavia, Italia. http://www.roseschool.it/downloads/masters-dissertations-individual-studies-2007.html/2 - Newcombe, M. (2008). Seismic design of multistorey post-tensioned timber buildings. Master Degree Dissertation, European School for Advanced Studies in Reduction of Seismic Risk, Rose School, Pavia, Italia http://www.roseschool.it/downloads/masters-dissertations-individual-studies-2008.html - Tokoro, K.T., Anderson, J., Bertero, V. (2004). Seismic performance of masonry buildings and design implications. PEER report 2004/01. http://peer.berkeley.edu/publications/peer_reports/reports_2004/0401.pdf

Criteria to be considered for the final mark	**Weight of each criterion in the final mark (%)**
1. Exam defence (final examination)	40%
2. Appreciation during the entirely semester	
2.1 Seminar activity	
2.1 Laboratory activity	
2.2 Project activity (the project has not a distinct final mark)	50%
3. Periodical examinations	
3.1 Written / oral examination	
3.2 Home works, reports, essays etc.	10%
4. Other criteria (to be specified)	
Short description of the final evaluation procedure:	

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	10		8. Preparation of the final examination	10
2. Study of the compulsory bibliography			9. Advisory class participation	
3. Study of the supplementary bibliography			10. Practical documentation on site	
4. Preparation of specific activities	2		11. Additional documentation on library	

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			**TOTAL number of hours**	28

Date:
septembre 2017

Signature of the Academic Staff member in charge:
Stoica Nicolae Daniel