

COURSE DESCRIPTION

Name of the Course:		STABILITY OF STEEL STRUCTURES						
Specialization Code:		U02.07.ICV.IZ.M24.		Course Code:		2.DS.OB09		
Year of study:	I	Semester:	2	Examination form: (E-Exam; Co- Colloquy; P-Project; P/F-Passed/Failed)	E	ECTS credits granted (CR):	E (Co)	5
							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 :	112	Individual study (IS):		70	Contact hours (C + S;L;P):			42
Academic staff member in charge: (Full name, Academic position and Department)				<i>Bogdan ȘTEFĂNESCU, Ph. D., C. Eng, Associate Professor</i>				

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	42	28		14	

Course objectives - Description of the main competences:

Getting updated knowledge about buckling and local buckling in the elastic and plastic range for steel members subjected to compression and bending.

Efficient and correct design of metal structures.

Content description:

1. COURSE	<p style="text-align: center;">COURSE 2 hours/week x 14 weeks = 28 hours</p> <p>1. Classes of cross-sections; correspondence with stability problems 2 hours</p> <p>2. Plastic analysis aspects; correspondence with stability problems 2 hours</p> <p>3. Elastic stability on the theoretical member 2 hours</p> <p>4. Buckling of actual members 2 hours</p> <p>5. Plastic analysis of buckling 2 hours</p> <p>6. Values of the buckling length 2 hours</p> <p>7. Stability analysis using the equivalent geometric imperfection 3 hours</p> <p>8. Equivalent loading for buckling 2 hours</p> <p>9. Combining of buckling modes 2 hours</p> <p>10. Stability of members in bending 2 hours</p> <p>11. Stability of members in compression and bending 3 hours</p> <p>12. Analysis of stability bracing 2 hours</p> <p>13. Local stability of plates. Correspondence with general stability 2 hours</p>
2. Seminar / Laboratory / Project / Practical stage	<p style="text-align: center;">LABORATORY 1 hour/week x 14 weeks = 14 hours</p> <p>Numerical applications for titles 1 to 13. Each course is completed with a numerical application for which half of the time for the course is assigned.</p>
3. Bibliography	<p>1. EN 1993-1-1 – Eurocode 3: Design of steel structures – Part 1-1: General rules and rules for buildings</p> <p>2. EN 1993-1-5 – Eurocode 3: Design of steel structures – Part 1-5: Plated structural elements</p> <p>3. Martinelli, E. Master in Design of Steel Structures - lecture notes. http://www.enzomartinelli.eu/MaterialeDidattico/stabilita/index12.html</p>

Criteria to be considered for the final mark	Weight of each criterion in the final mark (%)
1. Exam defence (final examination)	60%
2. Appreciation during the entire semester	
2.1 Seminar activity	
2.1 Laboratory activity	
2.2 Project activity (the project has not a distinct final mark)	

3. Periodical examinations	
3.1 Written / oral examination	40%
3.2 Home works, reports, essays etc.	
4. Other criteria (to be specified)	
Short description of the final evaluation procedure: written examination	

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	12	8. Preparation of the final examination	20
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	8
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	70

Date:
25.03.2013

Signature of the Academic Staff member in charge:
Bogdan ȘTEFĂNESCU