

COURSE DESCRIPTION

Name of the Course:		LIGHTWEIGHT STRUCTURES MADE OF COLD-FORMED THIN GAUGE SHAPES						
Specialization Code:		U02.07.ICV.IZ.M24.		Course Code:		2.DS.FC04		
Year of study:	2	Semester:	3	Examination form: (E-Exam; Co- Colloquy; P-Project; P/F-Passed/Failed)	Co	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)								FC
Number of hours per semester: Total of hours per week (TH) x Number of weeks per semester								
TOTAL :	98	Individual study (IS):			42	Contact hours (C + S;L;P):		56
Academic staff member in charge: (Full name, Academic position and Department)				<i>Șerban DIMA, Ph.D., C. Eng., Professor</i>				

Faculty	Engineering in foreign languages Master study programme	Number of contact hours per semester				
		Total	Course	Seminar	Laboratory	Project
Field	Civil Engineering	56	28		28	
Specialization	Structural Engineering					

Course objectives - Description of the main competences:

Getting updated knowledge about buckling and local buckling in the elastic range for steel members made of cold-formed shapes subjected to compression and bending and their connections.

Getting used to efficient design of lightweight structural members and structures in the field of civil and industrial buildings

Content description:

1. COURSE	<p>COURSE 2 hours/week x 14 weeks = 28 hours</p> <p>1. Fabrication of cold-formed thin gauge shapes 2 hours</p> <p>2. Behaviour of structural members made of cold-formed thin gauge shapes</p> <p style="padding-left: 20px;">- members in compression 6 hours</p> <p style="padding-left: 20px;">- members in bending 2 hours</p> <p style="padding-left: 20px;">- members in compression and bending 4 hours</p> <p style="padding-left: 20px;">- connections for members made of cold-formed thin gauge shapes 2 hours</p> <p>3. Lightweight structures made of cold-formed thin gauge shapes</p> <p style="padding-left: 20px;">- types of structures made of cold-formed thin gauge shapes 4 hours</p> <p style="padding-left: 20px;">- analysis of lightweight structures for family houses and penthouses 4 hours</p> <p style="padding-left: 20px;">- analysis of single-storey industrial buildings 4 hours</p>
2. Seminar / Laboratory / Project / Practical stage	<p>PROJECT 2 hours/week x 14 weeks = 28 hours</p> <p>Design of a family house with the structure made of cold-formed thin gauge shapes</p> <p style="padding-left: 20px;">- structural system. Loads 4 hours</p> <p style="padding-left: 20px;">- calculus of efforts 4 hours</p> <p style="padding-left: 20px;">- sizing and checking of beams 4 hours</p> <p style="padding-left: 20px;">- sizing and checking of columns 4 hours</p> <p style="padding-left: 20px;">- sizing and checking of the bracing system 4 hours</p> <p style="padding-left: 20px;">- check of connections 4 hours</p> <p style="padding-left: 20px;">- assembly drawings and typical details 4 hours</p>
3. Bibliography	<p>1. EN 1993-1-3 – Eurocode 3: Design of steel structures – Part 1-3: General rules – Supplementary rules for cold-formed members and sheeting</p> <p>2. Cold-formed structures Eurocode 9 - Part 1.4. http://eurocodes.jrc.ec.europa.eu/doc/WS2008/EN1999_8_Landolfo.pdf</p> <p>3. Éléments et panneaux à parois minces http://www.systemx.fr/meca/cm/ESDEP/Volume%2009/Lecon%2001/Francais/L9-1.pdf</p>

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 entire semester	
2.1 Seminar activity	
2.1 Laboratory activity	30 %
2.2 Project activity (the project has not a distinct final mark)	
3. Periodical examinations	
3.1 Written / oral examination	20 %
3.2 Home works, reports, essays etc.	
4. Other criteria (to be specified)	

Short description of the final evaluation procedure:

The final evaluation consists of a written examination, where two or three subjects must be solved, the final mark being an average value of the grades for each subject; in some cases, discussions on the subjects may be involved.

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	8	8. Preparation of the final examination	10
2. Study of the compulsory bibliography	6	9. Advisory class participation	2
3. Study of the supplementary bibliography	8	10. Practical documentation on site	-
4. Preparation of specific activities	8	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	42

Date:
25.03.2013

Signature of the Academic Staff member in charge:
Șerban DIMA