Course Name: DESIGN AND CONSTRUCTION OF TIMBER STRUCTURES

Course Code	Course Status	Semester	ECTS Credits	Number of classes
	Compulsory	III	5	2P+1V+1L

Study programmes: Postgraduate master academic studies - study programme Civil Engineering - Structures; module Steel, Composite and Timber Structures; 4 semesters / 120 ECTS credits.

Conditioned by other courses: No prerequisites, except course Timber Structures from undergraduate studies.

Aims of the course: Getting knowledge in timber structures design and construction.

Learning outcomes: After passing this exam, student will be able to: 1. Know basic wood-based products and wood application in combination with other materials (composing, reinforcing and pre-stressing). 2. Solve independently common tasks and problems from engineering practice in domain of timber structures. 3. Apply independently acquired knowledge from domain of timber structures design and construction.

Teacher and assistant: Assoc.Prof. Biljana Šćepanović, Dr-Ing. – teacher
Mladen Muhadinović, MSc; Petar Subotić, MSc – assistants

Methods of teaching and learning: Lectures, exercises, laboratory exercises, consultations, semester project.

Course content:

I teaching week	Introduction – General about timber structures, timber as material of structures in civil engineering, timber properties and basis of timber structures design.
II teaching week	Tapered girders. Semester project – task 1.
III teaching week	Curved and pitched girders. Semester project – task 2.
IV teaching week	Girders made of timber and wood-based plates (thin-webbed and thin-flanged girders).
V teaching week	Reinforced, composite and pre-stressed timber girders.
VI teaching week	In situ teaching – excursion to the construction site or glue-lam workshop.
VII teaching week	Connectors and fasteners, connections, splices, bearings and supports in glu-lam structures. Semester project – task 3.
VIII teaching week	Connectors and fasteners, connections, splices, bearings and supports in glu-lam structures. Semester project – task 3.
IX teaching week	Stability of timber structures. Semester project – task 4.
X teaching week	Timber structures design and construction. Semester project – task 5.
XI teaching week	Timber structures design and construction. Semester project – task 5.
XII teaching week	Assembly, protection and maintenance of timber structures.
XIII teaching week	In situ teaching – excursion to the construction site or glue-lam workshop.
XIV teaching week	Semester project presentation and defence.
XV teaching week	Semester wrap-up and final preparation for the examination.

Student's obligations: Attending of lectures and exercises, elaboration of semester project.

STUDENTS LOAD

Per week	In semester
5 credits x 40/30 = 6.67 hours Structure: 2 hours lectures 2 hours exercises 2.67 hours individual work, including consultations	Teaching and final exam: (6.67 hours) x 16 = 106.67 hours Necessary preparations before semester (administration, enrolment etc) 2 x (6.67 hours) = 13.33 hours Total load for the course: 5x30 =150 hours Additional work for exam preparation in the additional exam session, including passing of correctional exam between 0 and 30 hours (remaining time from the previous issues to the final load for the course of 150 hours) Load structure: 106.67 hours (teaching) + 13.33 hours (preparation) + 30 hours (additional work)

Literature: Basic literature:

1. Zakić B.: Uvod u mehaniku drveta, FTN NS i IMS BG, Beograd, 1985.
2. Gojković M., Stojić D.: Drvene konstrukcije, GF BG i Grosknjiga, Beograd, 1996.
3. Goldstein W.E.: Timber Construction for Architects and Builders, McGrow-Hill, USA, 1999.
4. Zakić B.: Mehanika drveta, FTN NS i IMS BG, Beograd, 2000.

Additional literature:

6. Gojković M. i dr.: Drvene konstrukcije - rešeni primeri iz teorije i prakse, GF BG i Grosknjiga, Beograd, 1989.
7. JUS standards
8. MEST EN standards

Examining system and grading:

Examining is continuous during the semester and in the final exam.
Maximum number of points in semester: 100.
The structure of examination and points is as follows:

- semester project: 22.5 – 45 (min positively marked semester project = 22.5 points);
- final exam: 27.5 – 55 (min positively marked final exam = 27.5 points).

Semester project should be completed in order to be marked. It consists of oral and written part.
Final exam is in written form. Both theory part and numerical part should be done ≥ 50%.
Following grading system is applied: A for ≥ 90 points, B for 80 ≤ points < 90, C for 70 ≤ points < 80, D for 60 ≤ points < 70, E for 50 ≤ points < 60, F for < 50 points. Positive grade is obtained for min 50 points. F = failed.

Special notes for the course:

Data prepared by teacher: Assoc.Prof. Biljana Šćepanović, Dr-Ing.

Note: Additional information on course may be obtained from course teacher, assistant, head of the study programme and vice-dean for teaching.