

Course unit title	CONCEPTUAL DESIGN OF BUILDINGS
Course unit code	1C3
Type of course unit	Compulsory
Semester	1
Number of ECTS credits allocated	6
Name of lecturer(s)	Rotter (CTU); Abecasis/Silva/Gervásio (UC); Della Corte (UNINA); Petzek (UPT); Vincent de Ville (ULg); Heistermann T. (LTU); Lecturer (Associate 1); Lecturer (Associate2).
Learning outcomes of the course unit	The students should, at the end of the unit, be able to conceptually design a bridge through the selection, in a wide library of structural solutions, of the most appropriate ones to be implemented. To achieve it, he will rely on his knowledge of these technical solutions, but also on his acquired ability to integrate various other conceptual aspects as the feasibility and the economy of the project.
Mode of delivery	Frontal lesson , design projects, home work
Prerequisites and co-requisites	General admission requirements
Course contents	History and types of steel bridges     History of bridge engineering, types of steel bridges, structural systems of steel bridges.
	2. week Fundamental terms Subdivision of bridges, vertical alignment, bridge elements, headroom, spatial arrangement.
	3. week: Basis of design Reliability of bridge structure, design standards, material, ultimate limit states, serviceability limit states, durability of steel bridges, connections.
	4. week Bearings, expansion joint, bridge accessories Volumetric changes of bridges, types of bearings,

5. week

6. week

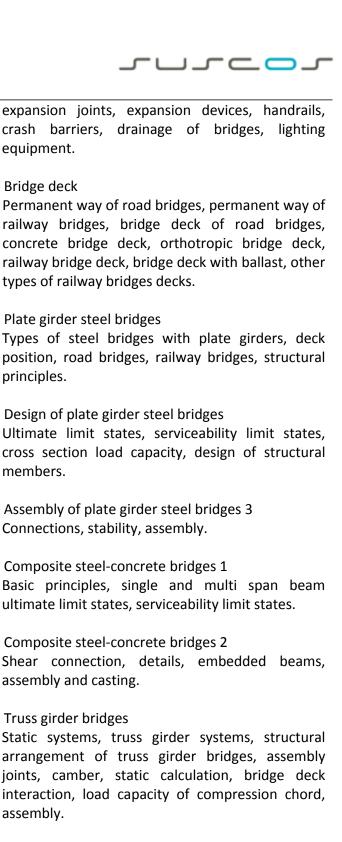
7. week

8. week

9. week

10. week

11. week



## 12. week Pedestrian footbridges

Types of footbridges, construction arrangement, ultimate limit states, serviceability limit states.

13. week Examples of bridge structures

	Seminars:  Design of composite road bridge.
Recommended or	Hendy C. R., Murény C. J., Designers' Guide to EN 1993-2
required reading	Eurocode 3: Design of steel structures. Part 2: Steel bridges,
	Thomas Telford Ltd.,2007, 400 p.
	Parke G., Hewson N.: ICE manual of bridge engineering. ICE
	manuals, Thomas Telford Limited, 2008, 748 p.
Planned learning	Frontal lectures are organised from the beginning. In addition,
activities and	students have to achieve the conceptual design of a particular
teaching methods	bridge on the basis of assumed realistic design requirements
	provided by the lecturers. A feasibility study will also be carried
	out.
	At the end of the unit, a critical appraisal of the projects takes
	place, involving the lecturers and the students.
Assessment	The assessment includes the following evaluations: oral
methods and	examination on the contents of the lectures and oral
criteria	presentation/justification of the above mentioned project. As
	part of the oral examination, students will have to comment
	orally photographs presenting a particular bridge selected by the
	lecturers.
Language of	English
instruction	

**----**