



SUSTAIN-CE PROJECT

Module 3 Structural Engineering for a Sustainable World Syllabus

COMMON SYLLABUS FOR MODULES/
COURSE MATERIALS



Co-funded by the
Erasmus+ Programme
of the European Union





SUSTAIN-CE Project

Output name: Module 3 Structural Engineering for a Sustainable World Syllabus

Leading Partner:	IYTE/AUTH
------------------	-----------

Document Revision History

Version	Date	Comment	Author(s)
1.0	14 January 2022	First Draft	IYTE/YU/AUTH
2.0	14 October 2022	Second Draft	IYTE/YU/AUTH
3.0	31 May 2023	Final Version	IYTE/YU/AUTH

This project has been funded with support from the European Commission. This publication [communication] reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



COURSE MATERIAL SYLLABUS

Module Topic	Applicable Civil Engineering Area/Design Course	Module Code	Total Course Hour		University Credit	ECTS
			Theory	Practice		
Structural Engineering for a Sustainable World	XXX	SUSTAIN-CE 03	3	0		3

Language of Instruction	English
Level of Course Material/Load Case/Module	<input type="checkbox"/> Associate Degree (Short Cycle) <input checked="" type="checkbox"/> Undergraduate (First Cycle) <input type="checkbox"/> Graduate (Second Cycle) <input type="checkbox"/> Doctoral Course (Third Cycle)
Prerequisite Course (s)	N/A
Special Pre-Conditions of the Course	N/A

Course Coordinator		Mail: Web:
Course Instructor(s)		Mail: Web:
Course Assistant(s)/Tutor (s)		Mail: Web:

Purpose and Background	<p>Structural engineering's interest area is the load-carrying systems of structures. Hence, structural engineering for a sustainable world is interested in optimizing the sustainability and circular economy-related features of structural framing. The contemporary topics considered are the resilience of the structural frames, structural design with secondary raw materials, adaptable structural systems, and structural systems for disassembly.</p>
Module Content	<p>Basic Concepts for Sustainable Structural Design, Resilient Structural Systems, Structural Design with Secondary Raw Materials, Adaptive Structural Design, 5. Structural Systems for Disassembly</p>
Learning Outcomes of the Course Material/Case Study/Module	<p>Participants who complete this module will</p> <ol style="list-style-type: none"> 1. Identify the importance of sustainable structural design and its impact on human life and the living environment 2. Distinguish the structural design decision impacts from sustainability and circular economy point of view 3. Practice the structural design considering sustainability and circular economy 4. Estimate life-cycle cost effects of the structural design decisions

MODULE OUTLINE/SCHEDULE (In hours)

Hours	Topics	Preliminary Preparation	Methodology and Implementation (theory, practice, assignment etc.)
3	Basic Concepts for Sustainable Structural Design	Recommended readings from the VLE	Theory, practice
3	Resilient Structural Systems	Recommended readings from the VLE	Theory, practice
3	Structural Design with Secondary Raw Materials	Recommended readings from the VLE	Theory
3	Adaptive Structural Design	Recommended readings from the VLE	Theory, practice
3	Structural Systems for Disassembly	Recommended readings from the VLE	Theory

Required Material (s) /Reading(s)/Text Book (s)	Recommended readings in the VLE: Structural Engineering for a Sustainable World
Recommended Material (s) /Reading(s) /Other	

ASSESSMENT

Activities/ Studies	NUMBER	WEIGHT in %
Quiz	5	30
Assignment (s)	N/A	0
Project/ Final Project/ Dissertation and Preparation	1	35
Laboratory / Practice (Virtual Court, Studio Studies etc.)	N/A	0
Field Studies (Technical Visits)	N/A	0
Presentation/ Seminar	1	10
Examination/	1	25
Other (Placement/Internship etc.)		
TOTAL		100

ECTS (STUDENT/PARTICIPANT WORKLOAD)			
ACTIVITIES	NUMBER	HOURS	TOTAL WORKLOAD
Module Teaching Hours	5	3	15
Preliminary Preparation and finalizing of course notes, further self-study	5	2	10
Quiz and Preparation for the Quiz	5	3	15
Assignment (s)	N/A	N/A	N/A
Final Project/ Dissertation and Preparation	1	20	20
Practice (Laboratory, Virtual Court, Studio Studies etc.)	N/A	N/A	N/A
Field Studies (Technical Visits, Investigate Visit etc.)	N/A	N/A	N/A
Presentation/ Seminars	1	10	10
Examinations	1	10	10
Other (Placement/Internship etc.)	N/A	N/A	N/A
Total Workload	N/A	N/A	80
Total Workload/ 25	N/A	N/A	3,20
ECTS			3