

COURSE SYLLABUS AND COURSE REQUIREMENTS

ACADEMIC YEAR 2023/2024 SEMESTER II

<i>Course title</i>	Sustainability in Structures
<i>Course Code</i>	SZM009AN/MN
<i>Hours/Week: le/pr/lab</i>	Three hours/week
<i>Credits</i>	3
<i>Degree Programme</i>	MSc Structural Engineers
<i>Study Mode</i>	Full time
<i>Requirements</i>	Mid Term Assessment
<i>Teaching Period</i>	2023/2024 II
<i>Prerequisites</i>	None
<i>Department(s)</i>	Department of Civil Engineering
<i>Course Director</i>	Dr Zoltán Orbán
<i>Teaching Staff</i>	Dr Zoltán Orbán/Marcus Juby/Sara Mohammed Elhadad

COURSE DESCRIPTION

This course is intended for MSc Structural Engineering students and aims to cover important subjects such as sustainability, research methods, and academic writing. Students will work in teams to conduct research and write an article in the field of structural engineering and sustainability. The course will also be beneficial for students working on their final thesis. The group aspect of the course will provide students with valuable experience in collaborating towards a common goal. The course will include lectures on sustainability, academic writing, and research methods to guide students in their work. Upon completion, students will have acquired the necessary knowledge and skills to conduct high-quality research and contribute to the advancement of their field.

SYLLABUS

1. GOALS AND OBJECTIVES

The course will provide students with many of the knowledge and skills needed to do research and write an academic paper in the field of sustainability and structural engineering.

Objectives:

- Students will go through the stages necessary to write and publish an academic paper as part of a group.

Generic learning outcomes:

The course will focus on:

- teaching students about sustainability in the context of the built environment
- providing students with the skills and knowledge needed to conduct research and write an article in the field of structural engineering and sustainability
- giving students experience in working in teams towards a specific goal
- providing students with guidance on academic writing and research methods
- helping students develop their abilities to contribute to the advancement of their field.

2. COURSE CONTENT

TOPICS

LECTURE

1. Energy Efficiency in Building Construction
2. A global overview of sustainability
3. Moving towards a circular economy
4. Sustainable building design

5. Flow of resources in an urban environment
6. Lifecycle of a building and resources
7. Recycled building materials
8. Biobased building materials
9. Environmental technology in buildings
10. 3d printing concrete techniques
11. Biomimicry
12. Green building
13. Sustainability in Structures

DETAILED SYLLABUS AND COURSE SCHEDULE

ACADEMIC HOLIDAYS INCLUDED

LECTURE

week	Topic	Compulsory reading; page number	Required tasks (assignments, tests, etc.)	Completion date, due date
1.	Energy Efficiency in Building Construction	Lecture uploaded to Teams		
2.	A global overview of sustainability	Lecture uploaded to Teams	Choose topic and write brief overview of study	Feb 27th
3.	Sustainable building design	Lecture uploaded to Teams	Literature review	
4.	Flow of resources in an urban environment Lifecycle of a building and resources	Lecture uploaded to Teams	Write Introduction Literature Review	March 12th
5.	Recycled building materials	Lecture uploaded to Teams	Write a research question Literature Review	
6.	Biobased building materials/Strawbale houses	Lecture uploaded to Teams	Design and conduct the study	
7.	Environmental technology in buildings	Lecture uploaded to Teams	Design and conduct the study	
8.	Planned fieldtrip	Lecture uploaded to Teams	Collect and analyse data	April 23rd
9.	Spring break	Lecture uploaded to Teams		
10.	3d printing concrete techniques	Lecture uploaded to Teams		
11.	Biomimicry	Lecture uploaded to Teams		
12.	Green building	Lecture uploaded to Teams		
13.	Sustainability in Structures	Lecture uploaded to Teams	Complete draft and upload to Teams	Apr 30th
14.	Presentations and Submissions		Submit finished article	May 7th

Important: All material will be uploaded to Teams

3. ASSESSMENT AND EVALUATION

(Neptun: Instruction/Subjects/Subject Details/Syllabus/Examination and Evaluation System)

ATTENDANCE

In accordance with the Code of Studies and Examinations of the University of Pécs, Article 45 (2) and Annex 9. (Article 3) a student may be refused a grade or qualification in the given full-time course if the number of class absences exceeds 30% of the contact hours stipulated in the course description or does not participate effectively in groupwork.

Method for monitoring attendance (e.g.: attendance sheet / online test/register, etc.)

Register

ASSESSMENT

Course resulting in mid-term grade (PTE TVSz 40§(3))

Mid-term assessments, performance evaluation and their ratio in the final grade (The samples in the table to be deleted.)

Type	Assessment	Ratio in the final grade
Submission and Publication of Academic Article and Presentation	100	100%
Total		100%

Please note that assessment is based on groupwork and the writing and submission of a paper suitable for an academic journal. The marks within the group will be based on the contribution of the individual students towards the article.

Opportunity and procedure for re-takes (PTE TVSz 47§(4))

Contact the teacher if you would like to request an extension for late submission of assignments.

Grade calculation as a percentage

based on the aggregate performance according to the following table

Course grade	Performance in %
excellent (5)	85 % ...
good (4)	70 % ... 85 %
satisfactory (3)	55 % ... 70 %
pass (2)	40 % ... 55 %
fail (1)	below 40 %

The lower limit given at each grade belongs to that grade.

4. SPECIFIED LITERATURE

COMPULSORY READING AND AVAILABILITY

[1.] Unless otherwise notified all course materials and links will be uploaded to MS-Teams

RECOMMENDED LITERATURE AND AVAILABILITY

[2.] Morley, John. The Academic Phrasebook: An Academic Writing Resource for Students and Researchers. University of Manchester, 2017.

[3.] Dirk Kestner, Jennifer Goupil, Emily Lorenz. Sustainability Guidelines for the Structural Engineer. American Society of Civil Engineers, 2020. ISBN: 978-0-7844-7612-3

[4.] Bailey, Stephen. Academic Writing: A Handbook for International Students. Routledge, 5th Edition, 2017. ISBN: 978-1138048744

[5.] Barros, Luiz Otavio. The Only Academic Phrasebook You'll Ever Need. Luiz Otavio Barros, 2021.

[6.] T. Boake (n.d). "Design for Deconstruction and Material Reuse in Seattle." Retrieved from https://www.tboake.com/sustain_casestudies/DfDseattle.pdf