COURSE SYLLABUS AND COURSE REQUIREMENTS
ACADEMIC YEAR 22/23 SEMESTER SPRING

Course title	*STRUCTURES II*
Course Code	MSM406ANEP
Hours/Week: le/pr/lab	1/0/2
ECTS	4
Degree Programme	Structural Engineering MSc
Study Mode	*Full-time, in-person*
Requirements	Exam
Teaching Period	22/23 Spring
Prerequisites	Structures I
Department(s)	Department of Civil Engineering
Course Director	
Teaching Staff	Tamas Juhasz juhasz.tamas@mik.pte.hu

COURSE DESCRIPTION

This course is aimed to provide basic and advanced knowledge of the principles of surface structures, forms, loads, displacements, and stress fields.

SYLLABUS

1. GOALS AND OBJECTIVES

This course is aimed to provide basic and advanced knowledge of the principles of surface structures, forms, loads, displacements, and stress fields. Topics covered by the course include special problems of model creation, homogenization, anisotropy nonlinearity, the difference between a bent plate and plate in plane stress, general solutions, plates with large displacements, reinforced concrete slabs, 3D plate systems, shell structures, membrane forces, boundaries, boundary problems, bending theory of shell structures, stability problems.

2. COURSE CONTENT

	TOPICS
LECTURE, PRATICE, LAB	1. *Surfaces structures* 2. *Surface structures of revolution* 3. *Concrete shells* 4. *Membranes*

DETAILED SYLLABUS AND COURSE SCHEDULE, TENTATIVE

UNFORESEEABLE CIRCUMSTANCES MIGHT AFFECT THE SCHEDULE BELOW.
ACADEMIC HOLIDAYS INCLUDED

LECTURE, LAB

week	Topic	Compulsory reading	Required tasks (assignments, tests, etc.)	Completion date, due date
1.	Registration, introduction in general	[1]		
2.	Mechanics of Slabs, Elastic Plate Theory,	[1]		
3.	Analysis of One-way Slabs	[1]		
4.	Elastic Analysis of Two-way Slabs	[1]		
5.	Flat Slabs	[1]		
6.	Assessment of Existing Structures Using Johansen's Yield Line Method	[1]	Assigning take-home project	
7.	Method of Virtual Work: Beams and Frames	[1]	TBD	TBA
8.	FEM of Concrete Slab-systems	[1]	TBD	TBA
9.	SPRING BREAK	[1]	TBD	TBA
10.	Historical Perspective on Thin Shell Concrete Structures	[1]	TBD	TBA
11.	Analysis of Shell Walls I	[1]	TBD	TBA
12.	Analysis of Shell Walls II	[1]	TBD	TBA
13.	Analysis of Cylindrical Shells I	[1]	TBD	TBA
14.	Analysis of Cylindrical Shells II	[1]	TBD	TBA
15.	Design of Cylindrical Shell Roofs			Collecting take-home projects

3. ASSESSMENT AND EVALUATION

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. Online attendance is not available.

Method for monitoring attendance
Attendance will be monitored by attendance lists. All relevant university regulations apply.

ASSESSMENT

Students will be assessed by the performance of the take-home project work. Progress is to be checked regularly.
Neatness is part of the grade for all student work.

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

Mid-term assessments, performance evaluation, and their weighting as a pre-requisite for taking the final exam

Type	Assessment	Weighting as a proportion of the pre-requisite for taking the exam
1. *Take-home project*	*max 100 points*	*100 %*

Requirements for the end-of-semester signature
- Evaluated take-home project must score 40 points or beyond.

Type of examination spoken

The exam is successful if the result is a minimum of 40%

Calculation of the grade (TVSz 47§ (3))
>The mid-term performance accounts for 50%, and the performance at the exam accounts for 50% of the final grade calculation.

Calculation of the final grade based on aggregate performance in percentage.

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

<u>**COMPULSORY READING AND AVAILABILITY**</u>
[1.] D. P. Billington Thin Shell Concrete Structures ISBN 0-07—005279-4