

COURSE SYLLABUS AND COURSE REQUIREMENTS

ACADEMIC YEAR 22/23 SEMESTER FALL

<i>Course title</i>	<i>Reinforced Concrete Structures III.</i>
<i>Course Code</i>	<i>MSB394ANEP</i>
<i>Hours/Week</i>	<i>1/2/0</i>
<i>Credits</i>	<i>4</i>
<i>Study Mose</i>	<i>Full-time</i>
<i>Program</i>	<i>Civil Engineer BSc</i>
<i>Evaluation</i>	<i>Exam grade</i>
<i>Teaching Period</i>	<i>Fall</i>
<i>Prerequisites</i>	<i>Reinforced Concrete Structures II.</i>
<i>Department</i>	<i>Department of Civil Engineering</i>
<i>Instructor</i>	<i>Tamás Juhász</i>

COURSE DESCRIPTION

This course is aimed to provide basic and advanced knowledge on the principles of precast concrete technology and different types of precast building systems. The course will cover subtopics as follows, precast frame analysis, precast concrete floor system, basic principles of designing precast structural elements, and basic conceptual design principles to resist lateral loads.

SYLLABUS

1. GOALS AND OBJECTIVES

Specific, measurable student behavioral learning objectives.

Students should acquire an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.

Upon completion of the course, the student must be able to,

- Apply prefabrication and prestressing technologies in structural design,
- Understand the construction technology using precast structural elements,
- Analyse different precast building systems,
- preliminary design of precast structural elements.
- Determine and apply load cases and load combinations on concrete buildings.

2. COURSE CONTENT

TOPICS

LECTURE & PRACTICE	TOPICS
	<ol style="list-style-type: none">1. Concrete Frames2. Precast concrete elements3. Assembling technologies4. Industrial halls5. Prestressing, post tensioning

DETAILED SYLLABUS AND COURSE SCHEDULE

ACADEMIC HOLIDAYS INCLUDED

Week	Topics
1 st	Introduction
2 nd	Manufacturing of precast systems
3 rd	Principle of prestressing.
4 th	Precast columns
5 th	Precast beams
6 th	Types of joints and connections between precast concrete elements
7 th	Midterm exam 1.
8 th	<i>Fall Break – no class</i>
9 th	Lateral loads of concrete buildings
10 th	Application of wind load in accordance with EC2
11 th	Structural systems to resist seismic actions
12 th	Seismic static analysis Equivalent static force method
13 th	Seismic Dynamic analysis response spectrum
14 th	Midterm exam 2
15 th	Make up exam

3. ASSESSMENT AND EVALUATION

ATTENDANCE

By 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.

Method for monitoring attendance

Attendance will be monitored by attendance lists.

Course-unit with final examination

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
Test 1	50 points	50 %
Test 2	50 points	50%

Requirements for the end-of-semester signature

Mid-term assessment of 40%

Re-takes for the end-of-semester signature

Each test can be repeated or improved once during the 1st week of the examination period.

Type of examination: written exam

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

Calculation of the grade

The mid-term performance accounts for **40 %**, and the performance at the exam accounts for **60 %** in the calculation of the final grade.

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

COMPULSORY READING AND AVAILABILITY

- [1] Eurocode 1: Actions on structures - Part 1-4: General actions - Wind actions
- [2] Kim S. Elliot: Precast concrete structures, Second Edition, ISBN: 13: 978-1-4987-2399-2.
- [3] Eurocode 8 General Rules and Seismic Actions (EN.1998:2004)

