

COURSE SYLLABUS AND COURSE REQUIREMENTS

ACADEMIC YEAR 2024/2025 SEMESTER I

<i>Course title</i>	International Engineering Project
<i>Course Code</i>	SZB068AN
<i>Hours/Week: le/pr/lab</i>	3 hr/week
<i>Credits</i>	3
<i>Degree Programme</i>	All
<i>Study Mode</i>	Full time
<i>Requirements</i>	Midterm Mark
<i>Teaching Period</i>	2024/2025 I
<i>Prerequisites</i>	2 semesters study and a good level of English
<i>Department(s)</i>	Department of Civil Engineering
<i>Course Director</i>	Dr Zoltán Orbán
<i>Teaching Staff</i>	Marcus Juby

COURSE DESCRIPTION

The course 'International Engineering Project' is a multidisciplinary project that originated from a cooperation with the University of Brunel (London), Metropolitan State University (Denver) and Engineers without Borders (EWB) UK. It is based on the Engineers without Borders Design Challenge where students need to work together to solve a real-world issue affecting an impoverished community. The course is a combination of lectures and also students working in groups to come up with an engineering solution to a challenge affecting a community. The course provides future engineers with experience in working together to solve problems and also taking into account what it means to be a globally responsible engineer.

SYLLABUS

1. GOALS AND OBJECTIVES

The generic aim of the course is to provide students with international networking opportunities, awareness of wider engineering practices, technical and interpersonal skills.

Objectives:

Develop industry-relevant experience working on international engineering projects

Investigate design projects in their wider context

Develop awareness of international engineering practices, teamworking skills and effective communication skills

Generic learning outcomes:

Ability to integrate and apply knowledge and understanding within engineering and related disciplines

Investigate the design task in its wider context, for example client/stakeholder needs, codes of practice and standards, ethics

Effectively communicate with team members

Effectively convey engineering information

Providing the opportunity for reflection about how you participate in group projects.

2. COURSE CONTENT

TOPICS

LECTURE	TOPICS
	1. Introduction
	2. Identifying engineering problems
	3. Working as part of a team
	4. Intercultural communication
	5. Project management Software
	6. Risk assessment
	7. The Design process - The importance of context
	8. The Design process – Design Criteria
	9. Natural and recycled building materials
	10. Nature based solutions/Biomimicry
	11. Systems thinking
	12. Humanitarian Engineering

DETAILED SYLLABUS AND COURSE SCHEDULE

LECTURE

week	Topic	Compulsory reading; page number	Required tasks (assignments, tests, etc.)	Completion date, due date
1.	Introduction to the Course. Engineering for Change/Engineers without Borders. Group Dynamics	Course material posted on teams		
2.	Design Process – the importance of context	“		
3.	Presentation of individual work Allocation into groups	“	Identification and presentation of individual work	September 23 rd
4.	Wicked problems and sustainability	“		
5.	Reverse design brief Risk assessment Design process – design criteria	“		
6.	Design process – generating ideas	“	Reverse Design Brief Submission	October 13 th
7.	Biomimicry, exploring options	“		
8.	Autumn break			
9.	Modelling and testing	“		
10.	Natural Building and Circular Economy	“		
11.	Humanitarian Engineering	“		
12.	Project work	“		
13.	Final consultation	“		
14.	Final viewing of submissions, feedback		Submission of design and report	To be decided (consult the teacher)

Important: Where possible there will be invited guest speakers which means the timetable is subject to change. You will be notified of any changes through Teams. All course material will be uploaded to Teams.

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 or does not participate effectively in groupwork.

Method for monitoring attendance

Register

ASSESSMENT

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

Mid-term assessments, performance evaluation and their ratio in the final grade

Type	Assessment	Ratio in the final grade
(Individual) Identification and presentation of challenge area	25 points	25 %
(Individual) Reverse Design Brief	20 points	20 %

<i>(Group) Design Challenge Presentation and Solution</i>	<i>30 points</i>	<i>30 %</i>
<i>(Group) Submission of Report</i>	<i>15 points</i>	<i>15 %</i>
<i>(Individual) Active participation and attendance.</i>	<i>10 points</i>	<i>10 %</i>

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

Students need to contact the teacher in the case of late submission of assessment or resubmission of assessment tasks.

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

In order of relevance. (In Neptun ES: Instruction/Subject/Subject details/Syllabus/Literature)

COMPULSORY READING AND AVAILABILITY

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

RECOMMENDED LITERATURE AND AVAILABILITY

[2.] United Nations Sustainable Development Goals <https://sdgs.un.org/goals>

[3.] Centre for Appropriate Technology [Centre for Appropriate Technology \(CfAT\)](#)

[4.] Engineering for Change [Engineering For Change | By Engineers, For Everyone](#)