

**COURSE CONTENTS AND PERFORMANCE REQUIREMENTS  
2020/2021. I. SEMESTER**

<i>Title</i>	<i>Structural Design Softwares 2. (Tekla)</i>
<i>Course Code</i>	<b>MSB375MNEP</b>
<i>Weekly Lessons: lec/pr/lab</i>	<b>0/0/2</b>
<i>Credits</i>	<b>2</b>
<i>Department</i>	<b>Civil Engineering / BSc.</b>
<i>Type</i>	<b>Full Time</b>
<i>Evaluation</i>	<b>Examination (Midterm and Final)</b>
<i>Semester</i>	<b>Autumn / 1<sup>st</sup></b>
<i>Prerequisites:</i>	<b>Computer Aided Design and Software Usage</b>
<i>Educational Department</i>	<b>-</b>
<i>Lecturer / Instructor</i>	<b>Juhász Tamás; Pallós Balázs</b>

**OBJECTS OF THE COURSE:**

Preparing the students for using the common softwares in Hungary during the structural design tasks, the logical structural thinking and possibilities in the design.

The course will be in assistant with the using of Tekla Structures / Educational version, as it was used in the Structural Design Softwares 1. in the prior semester, where was the drawing of steel parts and assemblies and reinforced concrete structures and applications.

Structural Design Softwares 2. starts from that material and further develops the knowledge of the students by presenting and applying softwares that can be effectively applied in parametric design.

An insight into the use of Rhino 6 and its plug-in's will be provided, Grasshopper which is able to work closely with some of the target design softwares.

Other topics are also included such as Tekla Structures in connection with ConSteel and Rhino and IDEA Statica.

The softwares to be used during the classes are available in the classrooms at the university.

**CONTENTS:**

*Short description: according to the lecture and practical topics below.*

*Topics: Tekla Structures; Demonstration of the use of Consteel, IDEA Statica, Rhino 6 and Grasshopper software, application examples for software interoperability and compatibility, steel structure design; reinforced concrete design; relationship planning.*

#### Laboratory (Practical):

1. Introduction, Course Contents Definition, review of the semester tasks
2. Tekla Structures Revision, User interface, simple model creation, (menu, tabs, modification), orders and windows management (grid and axis system, color), create and modify views, work planes, elements, bolts and screws and welds.
3. Presentation of Rhino 6 and Grasshopper interface, logical structure, data management
4. Grasshopper initial steps and operations with required data
5. Parametric Modeling 1.
6. Parametric Modeling 2.
7. Parametric Modeling 3.
8. Autumn Break / Homework
9. Tekla Organizer
10. Trimble Connect
11. Parametric Modeling 4.
12. Parametric Modeling 5.
13. IDEA Statica interface and application
14. Course closing and examination
15. Corrections and Evaluation

#### REQUIREMENTS FOR COMPLETION:

*Attendance:* Online Teaching System

*Signature / Midterm exam conditions:* The maximum allowed absence is 3 times per the whole semester, and that number must not be exceeded, along with fulfilling the two graded exams through the semester (homework and final exam)

*How to get the mark:*

By submitting the homework in the 9<sup>th</sup> week and taking the final exam in the 14<sup>th</sup> week

#### RECOMMENDED AND IMPORTANT REFERENCES

- [1.] <https://teklastructures.support.tekla.com/instructions>
- [2.] <https://teklastructures.support.tekla.com/tutorials>
- [3.] <https://campus.tekla.com/learn>
- [4.] <https://www.rhino3d.com/>
- [5.] <https://www.ideastatica.com/>
- [6.] <https://consteelsoftware.com/>

**TIMETABLE**

		CLASSES, WEEKS															EXAM PERIOD						
2020/2021. I. SEMESTER		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	1.	2.	3.	4.	5.		
<b>Lecture Topic Number</b>																			In here, the midterm can never be retaken				
<b>Practical / Laboratory Lecture</b>		1	2	3	4	5	6	7	-	8	9	10	11	12									
<b>Final Examination</b>															x								
<b>Homeworks</b>	<b>Date of Issue</b>							x															
	<b>Date of Submission</b>									x													
<b>Notepad books</b>	<b>Submission Dead Lines</b>																						
<b>Other.</b>	<b>Eg. Reports</b>																						
	<b>Etc.</b>																						
<b>Final evaluation</b>																Crr							
<b>Scheduled dates for examination</b>																							

7th september 2020.

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Instructor