***Annex 1***

# course syllabus and course requirements academic year 22/23 semester FALL

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| Course title | Mechanics I. (Statics) |
| **Course Code** | **MSE256AN** |
| **Hours/Week: le/pr/lab**  | **1/3/0** |
| **Credits** | **5** |
| **Degree Programme** | **Civil Engineering BSc, Architecture, Architectural Engineering undergraduate** |
| **Study Mode**  | **Full-time, In-person** |
| **Requirements** | **Exam grade** |
| **Teaching Period** | **22/23 Fall** |
| **Prerequisites** | **None** |
| **Department(s)****Course Director** | **Department of Civil Engineering****Vanda Olimpia Pomezanski Dr.** |
| **Teaching Staff** | **Tamas Juhasz** |
| **Lecture****Practice Group A****Group B****Group C**  | **Every other week M 1:15 – 2:45 p.m. class begins September 5th, A216****M 3:00 – 5:30 p.m. A315****M 5:30 – 8:00 p.m. A315****T 3:00 – 5:30 p.m. A306** |
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# course description

In this course, students examine principles of statics, studies of vectors and moments, force systems, and their resultants. It also covers force systems in equilibrium, static friction, and introduces section properties, and shear and moment diagrams.

# syllabus

## **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,

- Describe force and moment systems and identify all unknown loads as applied to statically determinate rigid bodies.

- Analyse statically determinate beams, trusses, frames, machines, and systems with friction forces.

- Introduce section properties.

- Draw shear and moment diagrams for statically determinate beams under given loads.

## **course content**

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|  | TOPICS |
| LECTURE & PRACTICE | 1. *Force Systems*
2. *Equilibrium*
3. *Trusses and frames*
4. *Machines*
5. *Internal force diagrams*
6. *Properties of sections*
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**DETAILED SYLLABUS AND COURSE SCHEDULE**

### *academic holidays included*

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| LECTURE  |
| week | **Topic** | **Compulsory reading; page number****(from … to …)** | **Required tasks (assignments, tests, etc.)** | **Completion date, due date** |
| 1st | Introduction | [1] Chapter 1 | … | … |
|  3rd | Forces and Force Systems | [1] Chapter 1 |  |  |
| 5th | Analysis of Statically Indeterminate Trusses | [2] Chapter 3[1] Chapter 6 |  |  |
| 7th | Internal forces Developed in Structural Members | [2] Chapter 4[1] Chapter 7 |  |  |
| 9th | SEMESTER BREAK |  |  |  |
| 11th | Compound Structures and Machines | Lecture notes |  |  |
| 13th | Loads and Load Combinations | Lecture notes |  |  |
| 15th  | Section Properties | [1] Chapter 9-10 |  |  |

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| PRACTICE, LABORATORY PRACTICE |
| week | **Topic** | **Compulsory reading; page number****(from … to …)** | **Required tasks (assignments, tests, etc.)** | **Completion date, due date** |
| 1st | Registration |  |  |  |
| 2nd | Operation with Vectors | [1] Chapter 2 |  |  |
| 3rd | Result Force of Concurrent and Parallel Force Systems | [1] Chapter 2 |  |  |
| 4th | Result Force and Equilibrium of General Force Systems, Moment of Forces | [1] Chapter 2[1] Chapter 3 |  |  |
| 5th | Solving Statically Determinate TrussesMethod of Joints, Shears, and Moments | [2] Chapter 3 |  |  |
| 6th | Solving Statically Determinate TrussesMethod of Joints, Shears, and Moments | [2] Chapter 3[1] Chapter 6 |  |  |
| 7th | 1st Test |  | Manual calculation test. | 90-minute test, due at the end of the class. Submission on engineering paper. |
| 8th | Internal Forces Developed in Structural Members I | [2] Chapter 4[1] Chapter 7 |  |  |
| 9th | SEMESTER BREAK |  |  |  |
| 10th | Internal Forces Developed in Structural Members II | [2] Chapter 4[1] Chapter 7 |  |  |
| 11th | Compound Structures and Machines,Three Hinged Frames | Lecture notes |  |  |
| 12th | Compound Structures and MachinesGerber Beams | Lecture notes |  |  |
| 13th | Section PropertiesArea, Centroid 1st Moment of Inertia | [1] Chapter 9 |  |  |
| 14th | Section Properties2nd Moment of Inertia, Product of Inertia | [1] Chapter 10 |  |  |
| 15th | 2nd Test |  | Manual calculation test. | 90-minute test, due at the end of the class. Submission on engineering paper. |

## **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 a final examination

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

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

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

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| --- | --- |
| **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.

## **Specified literature**

##### **compulsory reading and availability**

[1.] R.C. Hibbeler Engineering Mechanics: Statics (12th Edition) ISBN 978-0136077909

[2.] R. C. Hibbeler, Structural Analysis, ninth edition ISBN 978-0-13-394284-2