## Statics

Code: MK3MEC2S8SX17-EN

ECTS Credit Points: 8

Evaluation: Exam

Year, Semester: 1th year, 2nd semester

Its prerequisite: Civil Engineering Orientation

Further courses are built on it: Yes

Number of teaching hours/week (lecture + practice): 0+6

### Topics:

Definitions, concurrent forces in a plane, Forces and rigid bodies in plane and in space. Simple structures, Compound structures, Trusses, Distributed forces, Internal forces, Diagrams of internal forces. Force systems in three dimensional space. Structures in three dimensional space. Force influence lines of statically determinate structures.

### Literature:

*Compulsory:*

- Vector Mechanics for Engineers by Ferdinand P. Beer, E. Russell Johnston and Phillip J. Cornwell (2012, Hardcover) ISBN-10: 0077402324 | ISBN-13: 9780077402327

### Schedule

| | |
|---|---|
| 1st week Registration week | |
| 2nd week<br>**Practice: :** Introduction, definitions, concurrent forces in a plane | 3rd week:<br>**Practice:** Forces in a plane |
| 4th week:<br>**Practice:** Simple structures, statically determinacy | 5th week:<br>**Practice:** Compound structures |
| 6th week:<br>**Practice:** Truss analysis I. | 7th week:<br>**Practice:** Truss analysis II. |
| 8th week: 1st drawing week | |
| 9th week:<br>**Practice:** Trip | 10th week:<br>**Practice:** Distributed forces in a plane<br>Mid-term test |
| 11th week:<br>**Practice:** Internal forces | 12th week:<br>**Practice:** Internal force diagrams |
| 13th week:<br>**Practice:** Simple structures in three dimensional space | 14th week:<br>**Practice:** Force influence lines of statically determinate structures<br>End-term test |
| 15th week: 2nd drawing week | |

### Requirements

A, for a signature:

Participation at **practice** is compulsory. Students must attend practice classes and may not miss more than three times during the semester. In case a student does so, the subject will not be signed and the student must repeat the course. Students can't make up a practice with another group. Attendance at practice will be recorded by the practice leader. Being late is counted as an absence. In case of further absences, a medical certificate needs to be presented. Students are required to bring a calculator to each practice. Active participation is evaluated by the teacher in every class. If a student's behaviour or conduct doesn't meet the requirements of active participation, the teacher may evaluate his/her participation as an absence due to the lack of active participation in class.

During the semester there are two tests: the mid-term test in the $10^{th}$ week and the end-term test in the $14^{th}$ week. A student once can retake test in both topics, if it is necessary.

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**Tests:**

| | | | |
|---|---|---|---|
| Test 1: | | Maximum: | **25 points** |
| Test 2: | | Maximum: | **25 points** |
| | Summa: **50 points** | Minimum | **33 points** |
| | **50×1.5=75 points** | | **50 points** |

**B, for a grade:**

The course ends in an **examination grade**. Based on the points of the tests and the exam. The sum of points which are given for the two tests is multiplied with 1.5 and added to the points of the exam.

| | | | | | |
|---|---|---|---|---|---|
| **Exam** | | Maximum: | **25 points** | Minimum: | **10 points** |
| **Summa points** | Maximum: | | **100 points** | Minimum: | **60 points** |

The grade is given according to the following table:

| Score | Grade |
|---|---|
| 0-59 | fail (1) |
| 60-69 | pass (2) |
| 70-79 | satisfactory (3) |
| 80-89 | good (4) |
| 90-100 | excellent (5) |