

I. Subject Specification**1. Basic Data***1.1 Title***STATICS***1.2 Code***BMEEOTMBSFC002-00***1.3 Type*

Module with associated contact hours

1.4 Contact hours

Type	Hours/week / (days)
Lecture	1
Seminar	4

1.5 Evaluation

Exam

1.6 Credits

5

1.7 Coordinator

name	Dr. Hincz Krisztián Gyula
academic rank	Associate professor
email	hincz.krisztian@emk.bme.hu

1.8 Department

Department of Structural Mechanics

1.9 Websiteepito.bme.hu<https://edu.epito.bme.hu/course/view.php?id=5324>*1.10 Language of instruction*

english

1.11 Curriculum requirements

Compulsory in the Civil Engineering (BSc) programme

*1.12 Prerequisites**1.13 Effective date*

1 September 2025

2. Objectives and learning outcomes

2.1 Objectives

The course presents the basic concepts of statics and the process of statics investigations. In this context, it introduces the calculation methods of resultants of force systems, reactions, and internal forces, the steps of determining internal force diagrams for statically determined simple and compound structures, and the classification of structures according to static determinacy. By completing the subject, this knowledge will enable the student to accomplish tasks related to civil engineering problems.

2.2 Learning outcomes

Upon successful completion of this subject, the student:

A. Knowledge

1. knows Newton's laws of motion, 2. knows the concept and characteristics of concentrated forces and forces distributed along a surface or volume, 3. knows the methods for determining the resultants of force systems, 4. knows the constraints occurring in static models and the types of reactions arising in them, 5. knows the concepts of static determinacy, indeterminacy and overdeterminacy, 6. knows the internal forces in rods and beams, their calculation methods and their meaning.

B. Skills

1. identifies the active and passive forces acting on structures consisting of one or more rigid bodies, 2. solves equilibrium force systems, 3. writes down the system of equilibrium equations of engineering structures, 4. writes down and solves the equilibrium equation for calculating individual reactions of simple supports, 5. characterizes the internal force diagrams of planar and three-dimensional structures in equilibrium by section, 6. routinely draws the internal force diagrams of planar structures with a straight axis, 7. performs the calculation of the reactions and internal forces of three-dimensional structures,

C. Attitudes

1. strives for accurate and error-free problem solving, 2. develops his task in a way that anyone can follow or even continue, 3. strives for precise wording, 4. tries to complete his tasks to the best of his ability and a high standard.

D. Autonomy and Responsibility

1. is capable of solving problems independently, 2. is open to critical comments, 3. is prepared to recognize and correct errors.

2.3 Methods

Students solve problems related to the subject; there is no new knowledge transfer; the topics are not new but are based on principles and theories learned in the subject's lecture. The department publishes examples to be solved in the classroom; students work independently or in groups, helping each other.

2.4 Course outline

1. Operations with vectors 2. Resultant forces, equilibrium force systems 3. Reactions of simple structures 4. Reactions of compound structures 5. Graphoanalytic method 6. Truss analysis 7. Static determinacy 8. Calculation of internal forces 9. Internal forces of simple and compound structures 10. Internal force diagrams of simple structures 11. Internal force diagrams of compound structures 12. Internal force diagrams of compound frames 13. Forces in 3D, the centroid of 2D objects 14. Force systems and structures in 3D
The above programme is tentative and subject to changes due to calendar variations and other reasons specific to the actual semester. Consult the effective detailed course schedule of the course on the subject website.

2.5 Study materials

J. L. Meriam, L. G. Kraige: Statics, Wiley, 2013 R. C. Hibbeler: Statics, Pearson, 2010 Sets of examples on the webpage of the subject (pdf)

2.6 Other information

- Students attending checks must not communicate with others during the check without explicit permission, and must not hold any electronic or other communication device switched on. - Students who have obtained a valid signature and have registered for a course other than examination course cannot lose their signature and eligibility for exam, but the final results are to be computed based on the new test results.

2.7 Consultation

The instructors are available for consultation during their office hours, as advertised on the department website
OR by personal appointment.

This Subject Datasheet is valid for:

II. Subject requirements

Assessment and evaluation of the learning outcomes

3.1 General rules

- Evaluation of learning outcomes described in Section 2.2. is based on three mid-term tests, and an exam in the examination period. - There are 75 minutes for the preparation and the submission of each mid-term test. - The duration of the preparation part of the exam is 105 minutes. - A mid-term test is valid (counted in the final grading) if its score reaches 50%.

3.2 Assessment methods

Teljesítményértékelés neve (típus)	Jele	Értékelt tanulási eredmények
1. Mid-term test (summative assesment)	ZH1	A.1-A.5; B.1-B.4; C.1-C.4; D1-D3
2. Mid-term test (summative assesment)	ZH2	A.2-A.5; B.1-B.4; C.1-C.4; D1-D3
3. Mid-term test (summative assesment)	ZH3	A.6; B.5-B.6; C.1-C.4; D1-D3
Written exam	V	A.1-A.6; B.1-B.7; C.1-C.4; D1-D3

The dates of deadlines of assignments/homework can be found in the detailed course schedule on the subject's website.

3.3 Evaluation system

Jele	Részarány
ZH1	16,67%
ZH2	16,67%
ZH3	16,66%
V	50%
Összesen	98%

3.4 Requirements and validity of signature

A student is to obtain a signature and has eligibility for the exam

-if all three mid-term tests are valid and

-the average of the three valid mid-term tests reaches or exceeds 50%.

3.5 Grading system

Érdemjegy	Pontszám (P)
jeles(5)	$85 \leq P$
jó(4)	$75 \leq P < 85\%$
közepes(3)	$65 \leq P < 75\%$
elégséges(2)	$50 \leq P < 65\%$
elégtelen(1)	$P < 50\%$

3.6 Retake and repeat

Each of the mid-semester tests can be retaken only once at dates announced at the beginning of the semester.

There is no second retake of the tests.

3.7 Estimated workload

Tevékenység	Óra/félév
contact lessons	70
preparation for lessons during the semester	36
preparation for the mid-semester tests	24
preparation for the exam	20

3.8 Effective date

1 September 2025

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