

Tárgytematika / Course Description

Solid Mechanics 3.

GKNB_AMTA021

Tárgyfelelős neve /

Teacher's name: dr. Kupi Gábor

Félév / Semester: 2022/23/1

Beszámolási forma /

Assesment: Folyamatos számonkérés

Tárgy heti óraszám /

Teaching hours(week): 2/3/0

Tárgy féléves óraszám /

Teaching hours(sem.): 0/0/0

OKTATÁS CÉLJA / AIM OF THE COURSE

The courses in Solid Mechanics aim to provide general basic knowledge about the concepts and methods in Solid Mechanics and develop skills in applying these methods in engineering problems through problem-solving and project tasks. Solid Mechanics 3 focuses on Finite Element Method and Dynamics.

TANTÁRGY TARTALMA / DESCRIPTION

The semester covers the following topics:

- Basics of Finite Element Method
- Finite elements of trusses and beams
- Kinematics of point masses
- Dynamics of point masses
- Kinematics of rigid bodies
- Kinematics of mechanisms
- Planar dynamics of rigid bodies
- Dynamics with friction
- Collisions
- Spatial dynamics of rigid bodies

SZÁMONKÉRÉSI ÉS ÉRTÉKELÉSI RENDSZERE / ASSESMENT'S METHOD

- Students can reach a maximum of 100 points in the semester.
- A maximum of 70 points can be reached from two tests.
- A maximum of 30 points can be reached from project tasks.

- For a successful semester, the minimum conditions are
 - to reach at least 40% of the points from each test,
 - and to reach at least 40 points in the whole semester.
- Each missing or unsuccessful test can be repeated once.
- At the end of the semester, not satisfying the minimum conditions results in grade fail (1).
- When the minimum conditions are satisfied, the grades are determined:
 - 40 – 54 points: pass (2)
 - 55 – 69 points: satisfactory (3)
 - 70 – 84 points: good (4)
 - 85 – 100 points: excellent (5)

KÖTELEZŐ IRODALOM / OBLIGATORY MATERIAL

- Logan D.: A First Course in Finite Element Method, 5th ed. CL Engineering, 2016
- Hibbeler, R.: Engineering Mechanics: Dynamics, 14th ed., Pearson, 2015
- Gross, D. et. al.: Engineering Mechanics 3: Dynamics, 2nd ed., Springer, 2013