Tárgytematika / Course Description
Simulation of structural behaviours

NGD_MDAA76_1

Tárgyfelelős neve / Teacher's name: dr. Movahedi Rad Majid

Félév / Semester: 2023/24/1

Beszámolási forma / Assesment: Vizsga

Tárgy heti óraszáma / Teaching hours(week): 0/0/0

Tárgy féléves óraszáma / Teaching hours(sem.): 12/0/0

OKTATÁS CÉLJA / AIM OF THE COURSE

Learning objectives:

- describe the most important computational structural engineering problems;
- present the results based on numerical simulation;
- study on the extend finite element method;
- present advanced numerical models and analysis methods;
- present effective computer programs and application methods.

TANTÁRGY TARTALMA / DESCRIPTION

Topics:

1. Material models, geometric and material non-linearity.
2. Structural stability.
3. Harmonics analysis, structural dynamics, vibration damping analysis.
4. Composite structures and accurate modeling of special structures.

SZÁMONKÉRÉSI ÉS ÉRTÉKELÉSI RENDSZERE / ASSESMENT'S METHOD

Homeworks:

- 2D and 3D numerical examples.

Grade: oral exam

KÖTELEZŐ IRODALOM / OBLIGATORY MATERIAL

Compulsory literature:

- Students will receive the note and graphic material in electronic form.

Recommended literature:

- David W. Nicholson: Finite Element Analysis: Thermomechanics of solids (CRC Press, 2nd Edition, 2008).

- Reddy J. N.: An Introduction to Nonlinear Finite Element Method: with applications to heat transfer, fluid mechanics, and solid mechanics (OXFORD Press, 2nd Edition, 2006).

- Abaqus/CAE User's Manuel.

AJÁNLOTT IRODALOM / RECOMMENDED MATERIAL