

Mechanics (E)

Calendar: 2nd day semester

Contact Hours: TP 60,0 h; OT 15,0 h

Scientific Area: Mechanical and structures

Intended learning outcomes (knowledge, skills and competences to be developed by the students):

After the attendance of this course unit, students should be able to apply acquired concepts in order to solve problems involving the: (i) kinematics of particles and rigid bodies; (ii) dynamics of particles and rigid bodies; (iii) damped and undamped mechanical vibrations.

Syllabus:

1. Kinematics of particles.
2. Kinematics of rigid bodies.
- 3 Dynamics of particles.
4. Dynamics of rigid bodies.
5. Damped and undamped mechanical vibrations.

Evidence of the syllabus coherence with the curricular unit's intended learning outcomes:

With the syllabus taught at the chapter related to kinematics the students acquire the ability to solve problems involving the kinematics of particles and rigid bodies.

With the syllabus taught at the chapter related to dynamics the students acquire the ability to solve problems involving the dynamics of particles and rigid bodies.

With the syllabus taught at the chapter related to mechanical vibrations the students acquire the ability to solve problems involving the damped and undamped mechanical vibrations.

References:

Beer, F. P.; Johnston, E. R.; Eisenberg, E. R. – Mecânica Vectorial Para Engenheiros. Dinâmica. McGrawHill de Portugal, Sétima edição, 2006.