Course guide
220051 - M2 - Mechanics II

Last modified: 22/04/2022

Unit in charge: Terrassa School of Industrial, Aerospace and Audiovisual Engineering
Teaching unit: 712 - EM - Department of Mechanical Engineering.

Degree: BACHELOR’S DEGREE IN AEROSPACE TECHNOLOGY ENGINEERING (Syllabus 2010). (Compulsory subject).
Academic year: 2022 ECTS Credits: 6.0 Languages: Catalan, Spanish, English

LECTURER
Coordinating lecturer: JORDI ROMEU GARBI - ROBERT ARCOS VILLAMARÍN

Others:
Primer quadrimestre:
ROBERT ARCOS VILLAMARÍN - 11, 12, 13, 14
JOAN CARDONA GONYALONS - 11, 12, 13, 14
JORDI ROMEU GARBI - 11, 12, 13, 14

PRIOR SKILLS
To properly tackle the present subject, the student should have a solid basis on Newtonian mechanics (statics, kinematics and dynamics) and on the obtention of the independent degrees of freedom of a mechanical system.

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES
Specific:
CE20. GrETA/GrEVA - Adapted and applied to engineering knowledge: fracture mechanics and continuum approaches dynamic fatigue of structural instability and aeroelasticity.

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT
- To have a good command of the determination of the equation of motion of a mechanical system and know the analytical methods that allow this obtention.
- To be able to understand the vibratory behaviour of a mechanical system in the free case and subjected to different kinds of excitation and, furthermore, know the mathematical expressions and the calculation procedures that allow to address a problem like this.
- To know the experimental techniques used to measure the mechanical vibration in structures and how to use this experimental data to dynamically characterise the particular mechanical system.
- To learn computational techniques able to solve the equations of motion of mechanical systems in both time and frequency domains.
- To know the passive control techniques that allow to control the dynamic behaviour of a particular mechanical system.

STUDY LOAD

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<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
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<tr>
<td>Self study</td>
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<td>Hours large group</td>
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Total learning time: 150 h

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<td>Self study:</td>
<td>18h</td>
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Description:

Specific objectives:

Related activities:

Full-or-part-time: 50h
Theory classes: 16h
Laboratory classes: 4h
Self study: 30h

Full-or-part-time: 16h
Theory classes: 3h
Laboratory classes: 4h
Self study: 9h

ACTIVITIES

Full-or-part-time: 89h
Theory classes: 43h
Self study: 46h

Description:

Specific objectives:

Material:

Delivery:

Full-or-part-time: 3h
Theory classes: 3h
Description:
...

Specific objectives:
...

Material:
...

Delivery:
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Full-or-part-time: 8h
Laboratory classes: 1h
Self study: 7h

Description:
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Specific objectives:
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Material:
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Delivery:
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Full-or-part-time: 8h
Laboratory classes: 1h
Self study: 7h

Description:
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Specific objectives:
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Material:
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Delivery:
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Full-or-part-time: 16h
Laboratory classes: 4h
Self study: 12h
Description:
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Specific objectives:
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Material:
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Delivery:
...

Full-or-part-time: 26h
Laboratory classes: 6h
Self study: 20h

GRADING SYSTEM

BIBLIOGRAPHY

Basic:

Complementary:

RESOURCES

Other resources:
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