

29745 - Vibration and Noise at Machines

Información del Plan Docente

Academic Year	2016/17
Academic center	110 - Escuela de Ingeniería y Arquitectura
Degree	434 - Bachelor's Degree in Mechanical Engineering
ECTS	6.0
Course	4
Period	First semester
Subject Type	Optional
Module	---

1. Basic info

1.1. Recommendations to take this course

1.2. Activities and key dates for the course

2. Initiation

2.1. Learning outcomes that define the subject

2.2. Introduction

3. Context and competences

3.1. Goals

3.2. Context and meaning of the subject in the degree

3.3. Competences

3.4. Importance of learning outcomes

4. Evaluation

5. Activities and resources

5.1. General methodological presentation

5.2. Learning activities

5.3. Program

Theoretical sessions

1. Vibration and Noise.

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2. Introduction to the theory of vibrations.
3. Vibrations of discrete systems of one and n degree of freedom. Modal analysis
4. Vibrations in continuous systems: Shafts and beams.
5. Fundamental concepts of noise.
6. Instrumentation for measurement and analysis of vibration and noise.
7. Sources of vibration and noise on machines.
8. Troubleshooting machines.
9. Noise and vibration control.
10. Practical cases.

Practical sessions

1. Data acquisition and processing noise and vibration signals..
2. Modal testing of a beam
3. Determination of sound power of a machine and / or equipment
4. Vibration analysis of a cantilevered rotor.
 - Setting up a measurement system
 - Failure frequency Identification
 - Interpretation and discussion of the measures

5.4.Planning and scheduling

5.5.Bibliography and recommended resources