

Academic Year: (2020 / 2021)

Review date: 10-07-2020

Department assigned to the subject: Mechanical Engineering Department

Coordinating teacher: RUBIO ALONSO, HIGINIO

Type: Compulsory ECTS Credits : 6.0

Year : 1 Semester : 2

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Math & mechanics (degree level),

OBJECTIVES

Solve problems of vibrations & noisy.

Isolate vibrations & noisy sources.

Use of vibration & noisy measurement equipment: accelerometers, microphones, speakers, etc.

DESCRIPTION OF CONTENTS: PROGRAMME

1. INTRODUCTION.
2. BASIS OF SOUND.
3. MEASUREMENT OF NOISE.
4. NOISE CONTROL. INSULATION.
5. NOISE REGULATIONS.
6. FUNDAMENTALS OF VIBRATIONS.
7. MEASUREMENT OF VIBRATIONS.
8. VIBRATIONS IN MACHINES.
9. NONLINEAR VIBRATIONS.
10. REGULATIONS AND NOISE CONTROL.
11. MODAL ANALYSIS.

LEARNING ACTIVITIES AND METHODOLOGY

- Theoretical and practical Classes (45% ECTS) . Students learn the theoretical contents of the subject and its application to practical situations.
- Labs (10% ECTS). The student reinforces their knowledge with practical implementation in lab situations.
- Practical work (40% ECTS). The student demonstrates the ability to apply knowledge acquired in the classroom to a real course.
- Participation in conferences, seminars or subject-related conferences (5% ECTS). Students acquire a thorough knowledge of the subject and its relation to other adjacent areas.

ASSESSMENT SYSTEM

- 40% exam
- the grade of the exam must be up to 3.5/10 in order to compute with the assignment.
- 40% assignment (practical work)

For the extraordinary exam the most favorable note between the criterion of ordinary and extraordinary qualification test will be used. additional practical work (assignment) can be presented in the extraordinary call.

% end-of-term-examination:	40
% of continuous assessment (assignments, laboratory, practicals...):	60

BASIC BIBLIOGRAPHY

- Den Hartog, J.P. Mechanical vibrations , Dover, 1985
- Kinsler, Lawrence E. Fundamentals of acoustics 3rd ed, John Wiley & Sons, 1982

- Rao, S.S. Mechanical vibrations , Addison-Wesley, 1990
- Rossing, Thomas D. Handbook of acoustics , Springer, 2007
- Smith, B.J. Acoustics and noise control , Addison-Wesley, 1996