

Academic Year: (2019 / 2020)

Review date: 22-04-2020

Department assigned to the subject: Mechanical Engineering Department

Coordinating teacher: BUSTOS CABALLERO, ALEJANDRO

Type: Compulsory ECTS Credits : 4.0

Year : 1 Semester : 2

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Mechanical Engineering fundamentals.

OBJECTIVES

Diagnosis of mechanical mechanisms using data analysis of mechanical sensors measurements (Matlab).

The student will learn:

- Advanced techniques for mechanical vibration analysis
- Mechanical Systems identification based on data analysis

DESCRIPTION OF CONTENTS: PROGRAMME

C1 Y C2 Introduction: mechanical signals in time and in frequency domain and signal processing in Matlab.

C3 Introduction to spectral analysis

C7 Fourier methods

C10 Sampling

C4 Y C5 Linear systems and filters

C13 Rotating machinery diagnostic

LEARNING ACTIVITIES AND METHODOLOGY

Classroom (65% of ETCS) + homework (30% of ETCS) + conferences and seminars (5% of ETCS).

ASSESSMENT SYSTEM

Exam (50% of ETCS) + homework (30% of ETCS) + in-class tests (20% of ECTS)

% end-of-term-examination: 50**% of continuous assessment (assignments, laboratory, practicals...):** 50**BASIC BIBLIOGRAPHY**

- S. BRAUN DISCOVER SIGNAL PROCESSING. An interactive guide for engineers., willey, 2008