

Course guide

220574 - 220574 - Quantitative Research Methods

Last modified: 19/04/2023

Unit in charge: Terrassa School of Industrial, Aerospace and Audiovisual Engineering
Teaching unit: 732 - OE - Department of Management.

Degree: MASTER'S DEGREE IN MANAGEMENT ENGINEERING (Syllabus 2012). (Optional subject).

Academic year: 2023 **ECTS Credits:** 3.0 **Languages:** Catalan

LECTURER

Coordinating lecturer: JOSE MARIA SALLAN LEYES

Others:

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

2. Develop and present a research proposal according to the criteria of the international scientific community.

Generical:

1. Ability to effectively communicate their findings, knowledge and concluding reasons to skilled and unskilled audiences, clearly and unambiguously.

TEACHING METHODOLOGY

The course is divided into three parts:

Sessions of content explanation

Practice sessions

Autonomous work on exercises and activities

In the content explanation sessions the teachers will convey to the students the fundamentals of the techniques of quantitative data analysis, together with examples of applications in industrial engineering research

In the practice sessions the students will learn to use the tools (i. e., software) of quantitative data analysis through examples of research in industrial engineering.

In the autonomous work sessions students will work on exercises of application of similar difficulty than the ones introduced in the practical sessions.

LEARNING OBJECTIVES OF THE SUBJECT

The course of quantitative research methods introduces students to the concepts, principles and fundamentals of scientific research with quantitative data in industrial engineering, presenting the fundamentals of the data analysis techniques, and the use of quantitative data analysis tools.

STUDY LOAD

Type	Hours	Percentage
Hours large group	8,0	10.67
Hours medium group	3,0	4.00
Guided activities	16,0	21.33
Self study	48,0	64.00

Total learning time: 75 h

CONTENTS

Module 1: Fundamentals of quantitative data analysis

Description:

(ENG) Introducció
Disseny de recerques amb dades quantitatives
Tècniques de mostreig
Tècniques d'anàlisi de dades: anàlisi factorial, regressió, equacions estructurals

Related activities:

(ENG) Exercicis
Examen

Full-or-part-time: 36h

Theory classes: 12h
Self study : 24h

Module 2: Tools for quantitative data analysis

Description:

(ENG) Introducció al software d'anàlisi de dades quantitatives R
Models lineals i models lineals generalitzats amb R
Anàlisi factorial amb R
Equacions estructurals amb R

Related activities:

(ENG) Exercicis
Examen

Full-or-part-time: 39h

Theory classes: 12h
Guided activities: 3h
Self study : 24h

GRADING SYSTEM

The assessment of the course will have two parts:

Final exam (50%)
Proposed exercises (50%)

EXAMINATION RULES.

The final exam will be individual, and the exercises in groups.