

## Quality Control

Academic Year: ( 2022 / 2023 )

Review date: 11-05-2022

Department assigned to the subject: Statistics Department

Coordinating teacher: GRANE CHAVEZ, AUREA

Type: Compulsory ECTS Credits : 6.0

Year : 3 Semester : 1

## REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

It is highly recommended to take the course of "Regression" simultaneously. It is not compulsory.

## OBJECTIVES

Quality control tools in both manufacturing processes (SPC) and Services (Measurement of Customers Satisfaction).  
Design of Experiments.

1. Analysis and synthesis capability.
2. Knowledge of statistical software.
3. Resolution of problems
4. Team work.

## DESCRIPTION OF CONTENTS: PROGRAMME

1. Statistic Process Control (SPC).  
Variables  
Attributes.
2. ANOVA
3. Design of Experiments for quality improvement  
Factorial Experiments. Two level  
Fractional Factorial experiments
4. Quality of Services.  
-Factorial Analysis  
-Cluster Analysis  
-Use of both techniques in Customer Satisfaction
5. Quality indicators.

## LEARNING ACTIVITIES AND METHODOLOGY

Every week there are two lessons. A theoretical one that introduces various analysis techniques, and a practical one (in a computer room) where the learned technique are applied to real problems.

## ASSESSMENT SYSTEM

This course has two parts. At the end of each part there will be a midterm exam (25% +25%); exercises during the course (10%). Final exam 40%.

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

## BASIC BIBLIOGRAPHY

- Box, G.E.P. et all. Statistics for Experimenters: Design, Innovation, and Discovery, wiley.
- Montgomery, D. C. Statistical Quality Control, Wiley, 2012