

**COURSE DATA****DATA SUBJECT**

Code: 46544
Name: Tools for Quality Evaluation
Cycle: Master's Degree
ECTS Credits: 4
Academic year: 2026-27

STUDY (S)

Degree	Center	Acad. year	Period
2260 - Master's degree in Quality Management	Facultat d'Economia	1	Annual

SUBJECT-MATTER

Degree	Subject-matter	Character
2260 - Master's degree in Quality Management	Herramientas, técnicas y programas de gestión de la calidad	COMPULSORY

COORDINATION

LOPEZ RODRIGUEZ M ISABEL

SUMMARY

The objective of the subject **Tools to evaluate quality** consists in the fact that students learn and apply tools that allow them to obtain and identify ideas, causes and solutions that allow them to optimize both the processes linked to production and the service sector. Therefore, we will study the statistical tools in the different stages linked to the control and improvement of these business processes. Likewise, the student will develop the ability to identify a problem that can be solved through statistical techniques. Evaluate this problem and quantify the loss due to non-quality, proposing the appropriate improvement actions.

PREVIOUS KNOWLEDGE**RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE**

There are no specified enrollment restrictions with other subjects of the curriculum.

OTHER REQUIREMENTS

The knowledge required to take this course is the same as that required for admission to the master's degree program.



COMPETENCES / LEARNING OUTCOMES

2260 - Master's degree in Quality Management

Collaborate effectively in work teams, assuming responsibilities and leadership roles and contributing to collective improvement and development.

Demonstrate critical and self-critical reasoning within the field of study, considering aspects such as professional ethics, moral values and the social implications of the different activities carried out.

Demonstrate knowledge and understanding of social inequalities based on sex and gender within this specific field of study; integrate the different needs and preferences based on sex and gender into the design of solutions and problem solving.

Know the main technical tools and quality management programmes.

Lead teams and empower them.

Make strategic, tactical or operational decisions in the field of quality management.

Promote commitment to quality in all departments and at all hierarchical levels of the organisation.

Propose creative and innovative solutions to complex situations or problems specific to the field of knowledge to respond to different professional and social needs.

Use tools to assess and control quality as well as different continuous improvement techniques.

DESCRIPTION OF CONTENTS

1. Introduction to Statistical Quality Control. Basic statistical concepts

Presentation of the beginning and evolution of Statistical Quality Control. Description of the necessary statistics in the implementation of a system for the control and quality assurance.

2. Tools for Quality Control

Description of the statistical tools oriented to quality control.

3. Control in the supply and shipment of products.

Description and application of the statistical tools to the control of the procurement and in the expedition of the product.



4. Process Control by variables. Tolerance and Capacity

Description and application of statistical tools to process control by variables, analyzing process tolerance and capacity.

5. Process Control by attributes and by defect name.

Description and application of statistical tools to process control by attributes and by number of defects.

6. Product evolution. Design and redesign

Description and application of statistical tools in the design and redesign of processes, pursuing optimization in both scenarios.

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Theory	40,00
Total hours	40,00

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00
Individual or group project	0,00
Independent study and work	60,00
Preparation of lessons	0,00
Preparation for assessment activities	0,00
Resolution of case studies	0,00
Total hours	60,00

TEACHING METHODOLOGY

Each session will be developed interactively (MD1) so that, using the material provided by the teacher, after the exposition of the corresponding topic, the rest of the class will be devoted to the following tasks:

- The realization by the students of theoretical-practical cases related to the exposed topic (MD3, MD4, MD6, MD11).



- The clarification of the concepts that have presented problems in their application (MD1).

MD1- Theoretical classes - Participative master classes

MD3- Practical cases

MD4- Problems

MD6- Project development (real application of the methodologies learned)

MD11- Working group

For the processing of information through the use of Artificial Intelligence (AI) tools, the following considerations must be taken into account:

- As a general rule, AI tools may not be used to achieve the main objective of assessment activities.
- Teachers will explicitly indicate under what conditions and for what type of activities the use of AI is permitted or restricted.
- If the student has been authorized by the instructor to use AI, they must indicate in each case the source(s) and prompt(s) used, as well as the parts of the work that were affected by its use.

EVALUATION

The evaluation of the course will be carried out by means of:

- Assessment of students' attendance and participation in the various class sessions (10%). This component of the assessment cannot be retaken during the course's second examination period.
- Completion and presentation/defense of one or more group projects, in which the content covered throughout the course will be applied (30%). This component of the assessment cannot be retaken during the course's second examination period.
- The evaluation of the written test(s) and/or individual work (60%).

In no case may less than 50% be obtained in each of the following sections: "The realization and defense of a (s) work (s) in group, in which the contents taught throughout the course will be applied" and "the



assessment of the written test (s) and/or individual work (s)".

REFERENCES

BASIC

- Carot, V. et al (1999). Gestión y control de la calidad: Curso básico. SPUV.Valencia
- Deming, W.E. (1992). Out of the crisis: quality productivity and competitive position. Cambridge University Press
- Grant, E. L.; Leavenworth, R.S. (2013). Control Estadístico de la Calidad. Ed. CECSA.
- Gutiérrez Pulido. H. (2013). Control estadístico de la calidad y seis Sigma. Mc Graw Hill.
- Ishikawa, K. (1994). Introducción al control de la Calidad. Ed. Diaz Santos
- Juran, J. M.; Gryna, F.M.; Chua, R.C.H.; Defeo, J.A. (2007): Método Jurán. Análisis y planeación de la Calidad. Mc Graw Hill.
- Montgomery, D. C. (2004). Control Estadístico de la calidad. Limusa-Wiley.
- Pérez López, C. (1998). Control Estadístico de la Calidad. Teoría, práctica y aplicaciones informáticas. RA-MA S.A. Editorial y Publicaciones CEACES, Proyecto (Contenedor Hipermedia de Estadística Aplicada a las Ciencias Económicas y Sociales). Universitat de València. ON LINE: <http://www.uv.es/ceaces>

COMPLEMENTARY

- Escuder, R y Murgui, S. (1995). Estadística Aplicada. Economía y Ciencias Sociales. Valencia: Tirant lo Blanch.
- Esteban García et. al (2005). Estadística descriptiva y nociones de probabilidad. Ed Paraninfo
- Griffith, G.K. (1989). Statistical Process Control Methods. ASQC Quality Press.
- Juran, J. M.; Gryna, F. (1993): Manual de Control de Calidad. Mc Graw Hill.
- Ishikawa, K. (1995). ¿Qué es el control total de calidad?: la modalidad japonesa. Ed. Parramón
- Kaminsky, F.C (1993) Statistics and quality control for the workplace. ASQC Quality Press.
- Lawrence S. Aft, PE (1988). Quality Improvement using statistical process Control. Harcourt brace Jovanovich . New York.
- Lind, D. et al. (2020). Estadística Aplicada a los Negocios y la Economía. Mc Graw Hill.
- Tai K. Oh (1991). Understanding managerial values and behaviour among the Gang of Four. Journal of Management Development. University Press.
- Taguchi, G (1987). Introducción a la Ingeniería de Calidad. Centro de Calidad. DGI-ITESM. Monterrey