UNIVERSIDAD DE CASTILLA - LA MANCHA

GUÍA DOCENTE

1. General information

Course: QUALITY CONTROL
Code: 56435
Type: ELECTIVE
ECTS credits: 6
Degree: 412 - UNDERGRADUATE DEGREE PROGRAMME IN ELECTRICAL ENGINEERING
Academic year: 2022-23
Center: 106 - SCHOOL OF MINING AND INDUSTRIAL ENGINEERING
Group(s): 55
Year: 4
Duration: C2
Main language: Spanish
Second language: English
Use of additional languages:
English Friendly: Y
Web site:
Bilingual: N

Lecturer: **MANUEL SALVADOR CARMONA FRANCO** - Group(s): **55**

Building/Office	Department	Phone number	Email	Office hours
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Lecturer: **DOROTEO VERASTEGUI RAYO** - Group(s): **55**

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Elhuyar / Matemáticas	MATEMÁTICAS	926052122	doroteo.verastegui@uclm.es	

2. Pre-Requisites

The basic knowledge of mathematics taught in the scientific and technological baccalaureate and those taught in the subject of Statistics is required to take the course, taken in the first year of this Grade.

3. Justification in the curriculum, relation to other subjects and to the profession

The existence of this subject in the curriculum is justified given the highly competitive environment in which business organisations operate. The degree of competitiveness of companies in recent years generates the need for continuous improvement of processes and a high level of demand for the quality of products and services offered to customers. This requirement comes from the need for the Company Certification or the Product Certification, which act as a guarantee of quality, providing high security to real and potential customers.

Quality Management has, therefore, become not only an alternative to be implemented, but an indispensable requirement for the survival of the company and a guarantee to ensure competitiveness in today's markets.

A Quality Management System (QMS) is made up of a series of coordinated activities, which are carried out on a set of elements, to achieve the quality of the products and/or services offered to the customer, that is to say, it consists of planning, controlling and improving those elements of an organization that influence the fulfillment of the customer's requirements and the achievement of customer satisfaction.

As for the relationship with other subjects, Quality Control, is related to the following: Materials Science, Statistics, Computer Science, Business Management, Project Management, Manufacturing Systems and Business Organisation, Engineering Projects, Industrial Instrumentation and Measurement, Facilities Maintenance, Product Design and Development, Metrology and Production Automation, etc.

4. Degree competences achieved in this course

Course competences

Code	Description
CB01	Prove that they have acquired and understood knowledge in a subject area that derives from general secondary education and is appropriate to a level based on advanced course books, and includes updated and cutting-edge aspects of their field of knowledge.
CB02	Apply their knowledge to their job or vocation in a professional manner and show that they have the competences to construct and justify arguments and solve problems within their subject area.
CB03	Be able to gather and process relevant information (usually within their subject area) to give opinions, including reflections on relevant social, scientific or ethical issues.
CB04	Transmit information, ideas, problems and solutions for both specialist and non-specialist audiences.
CB05	Have developed the necessary learning abilities to carry on studying autonomously
CEO19	Ability to design and implement a quality control system.
CG03	Knowledge of basic and technological subjects to facilitate learning of new methods and theories, and provide versatility to adapt to new situations.
CG04	Ability to solve problems with initiative, decision-making, creativity, critical reasoning and to communicate and transmit knowledge, skills and abilities in the field of industrial engineering.
CT02	Knowledge and application of information and communication technology.
CT03	Ability to communicate correctly in both spoken and written form.

5. Objectives or Learning Outcomes

Course learning outcomes

Description

Knowledge and application of the most frequent statistical techniques used in quality control.
Understanding that quality is a competitive factor in the production system.
Knowledge of some of the mathematical tools used in industrial reliability.
Knowledge of current approaches to the concept of quality
Understanding of the importance of the human factor and its motivation as a key to success in process-based organisations.
Understanding of the repercussions of lack of quality in production processes.

6. Units / Contents

Unit 1: What is quality?
Unit 2: Quality management
Unit 3: Quality planning
Unit 4: Quality systems. Regulations on quality systems
Unit 5: Quality, a determining factor in the competitiveness of business
Unit 6: Different ways of promoting and organising staff participation in quality improvement. Key factors to take into account in a motivation strategy of the Quality
Unit 7: The economic aspect of Quality Management. The costs of Quality. Reduction in costs and their impact on benefits
Unit 8: Statistical fundamentals
Unit 9: Introduction to Reliability

7. Activities, Units/Modules and Methodology

Training Activity	Methodology	Related Competences (only degrees before RD 822/2021)	ECTS	Hours	As	Com	Description
Class Attendance (theory) [ON-SITE]	Lectures	CB01 CB02 CB03 CB04 CB05 CEO19 CG03 CG04 CT02 CT03	1	25	N	-	
Problem solving and/or case studies [ON-SITE]	Problem solving and exercises	CB01 CB02 CB03 CB04 CB05 CEO19 CG03 CG04 CT02 CT03	0.6	15	Y	N	
Self-study [OFF-SITE]	Self-study	CB01 CB02 CB03 CB04 CB05 CEO19 CG03 CG04 CT02 CT03	3.04	76	N	-	
Writing of reports or projects [OFF-SITE]	Problem solving and exercises	CB01 CB02 CB03 CB04 CB05 CEO19 CG03 CG04 CT02 CT03	0.56	14	Y	N	
Computer room practice [ON-SITE]	Practical or hands-on activities	CB01 CB02 CB03 CB04 CB05 CEO19 CG03 CG04 CT02 CT03	0.6	15	Y	N	
Progress test [ON-SITE]	Assessment tests	CB01 CB02 CB03 CB04 CB05 CEO19 CG03 CG04 CT02 CT03	0.1	2.5	N	-	
Final test [ON-SITE]	Assessment tests	CB01 CB02 CB03 CB04 CB05 CEO19 CG03 CG04 CT02 CT03	0.1	2.5	Y	Y	
		Total:	**6**	**150**			
		Total credits of in-class work: 2.4					**Total class time hours: 60**
		Total credits of out of class work: 3.6					**Total hours of out of class work: 90**

As: Assessable training activity
Com: Training activity of compulsory overcoming (It will be essential to overcome both continuous and non-continuous assessment).

8. Evaluation criteria and Grading System

Evaluation System	Continuous assessment	Non-continuous evaluation*	Description
Practicum and practical activities reports assessment	12.50%	12.50%	
Oral presentations assessment	12.50%	12.50%	
Final test	25.00%	60.00%	
Progress Tests	25.00%	0.00%	
Assessment of activities done in the computer labs	15.00%	15.00%	
Assessment of problem solving and/or case studies	10.00%	0.00%	
Total:	**100.00%**	**100.00%**	

According to art. 4 of the UCLM Student Evaluation Regulations, it must be provided to students who cannot regularly attend face-to-face training activities the passing of the subject, having the right (art. 12.2) to be globally graded, in 2 annual calls per subject , an ordinary and an extraordinary one (evaluating 100% of the competences).

9. Assignments, course calendar and important dates

Not related to the syllabus/contents

Hours	hours
Class Attendance (theory) [PRESENCIAL][Lectures]	25
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	15

Self-study [AUTÓNOMA][Self-study]	76
Writing of reports or projects [AUTÓNOMA][Problem solving and exercises]	14
Computer room practice [PRESENCIAL][Practical or hands-on activities]	15
Progress test [PRESENCIAL][Assessment tests]	2.5
Final test [PRESENCIAL][Assessment tests]	2.5

Global activity

Activities	**hours**
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	15
Computer room practice [PRESENCIAL][Practical or hands-on activities]	15
Self-study [AUTÓNOMA][Self-study]	76
Writing of reports or projects [AUTÓNOMA][Problem solving and exercises]	14
Class Attendance (theory) [PRESENCIAL][Lectures]	25
Final test [PRESENCIAL][Assessment tests]	2.5
Progress test [PRESENCIAL][Assessment tests]	2.5
Total horas:	150

10. Bibliography and Sources

Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
Cuatrecasas, Lluís	Gestión integral de la calidad: implantación, control y certificación	Profit Editorial		9788496998520	2010	
Enrique Claver Cortés	Gestión de la calidad y gestión medioambiental: fundamentos, herramientas, normas ISO y relaciones	Pirámide		9788436824582	2011	
Fuentes Ferrera, Demetrio	Apuntes en Campus Virtual					
Gómez González, Sergio	Control de calidad en fabricación mecánica	CEYSA		84-86108-21-7	2002	
Jabaloyes Vivas, José	Introduccion a la gestion de la calidad	Universidad Politécnica de Valencia		9788483635308	2010	
Juran, J. M., Blanton Godfrey, A.	Manual de calidad. Volumenes I y II	McGraw-Hill/Interamericana de España	Madrid	84-481-3006-5	2001	
Sebastián Pérez, M.A. y otros	Gestión y control de la calidad	Cuadrnos de la UNED. Universidad Nacional de Eduación a Distancia (España)	Madrid	9788436237221	1998	268 páginas
Velasco Sánchez, Juan	Gestión de la calidad: mejora continua y sistemas de gestión : teoría y práctica	Pirámide		9788436823622	2010	
Equipo Vértice	Gestión de la calidad (ISO 9001-2008)	Vértice		9788499311876	2010	
Canavos, George C.	Probabilidad y estadística : aplicaciones y métodos	McGraw-Hill		84-481-0038-7	1992	