

# **[096EC] THEORY AND TECHNIQUES FOR QUALITY CONTROL**

## **General information**

Course	<a href="#"><u>BUSINESS ADMINISTRATION AND MANAGEMENT</u></a>
Curriculum	BUSINESS AND MANAGEMENT
Course type	Bachelor Degree Programme
Academic year	2024/2025
Year	3
Training activity type	Related/additional subjects
Scope	Related or Additional Studies
Language	English
CFU	6 CFU
Didactic Activity Type	Lesson
Exam type	Oral Exam
Evaluation	Final mark
Teaching period	Second semester (from 24/02/2025 to 30/05/2025)
Teaching type	Opzionale
Holders	CAMPISI BARBARA
Length	45 hours (45 hours Lesson )
Frequency	Not mandatory
Didactic method	Standard teaching
Subject area	SECS-P/13
Location	Trieste

## **Lingua insegnamento**

English

## **Subjects**

PART ONE – Quality focus for introducing and analysing the main approaches used by businesses oriented to continual improvement.

SECOND PART - Life cycle thinking for business environmental sustainability management.

## **Books**

1) Essentials of Quality with Cases and Experiential Exercises (selected chapters see below)

by V. E. Sower

March 2010, Paperback.

Ch. 1 Introduction to Quality (pp 3-20)

Ch. 2 Strategic Quality Management & Operationalizing Quality (pp. 25-43)

Ch. 4 Innovation & Creativity in Quality (pp. 85-99)

Ch. 5 Quality Systems & Quality Systems Auditing (pp. 107-129)

Ch. 6 Product, Process, and Materials Control (pp. 135-148)

Ch. 8 Quality Improvement Tools (pp. 179-197)

2) Life Cycle Assessment: Principles, Practice and Prospects

by R. E. Horne, T. Grant and K. Verghese

March 2009, CSIRO Publishing.

## **Goals**

### **D1. KNOWLEDGE AND UNDERSTANDING**

At the end of the course, students will have to demonstrate knowledge and understanding of the key concepts and fundamental principles implied by the business approaches aimed at continuous quality improvement and oriented toward the sustainable production of goods and services.

### **D2. APPLYING KNOWLEDGE AND UNDERSTANDING**

At the end of the course, the student must be able to:

- identify the approach adopted by a company for quality management;
- identify the strategy adopted by a company for environmental sustainability.

### **D3. MAKING JUDGEMENTS**

At the end of the course, students will have to demonstrate that they have acquired knowledge and concepts and their ability to apply them to the analysis of concrete examples.

### **D4. COMMUNICATION SKILLS**

The oral exam aims to assess students' skills in using, effectively, appropriately, and with specific language the concepts learned in the course.

For the attending students, verifying the communicative ability acquired in written form through partial tests will also be possible.

### **D5. LEARNING SKILLS**

At the end of the course, students must demonstrate that they are able to apply the knowledge, skills and the minimum competencies required in this syllabus.

## **Required skills**

This course does not involve specific prerequisites.

## **Teaching methods**

Frontal lessons are recorded so that they can also be used in asynchronous mode.

Critical readings and discussion of scientific papers. During the lessons, students will be involved in in-class group work sessions to encourage active learning.

## **Extra info**

Teaching materials will be downloadable from MS Teams (lesson slides, scientific papers, recordings) and accessible from Moodle (self-assessment quizzes).

## Verification of learning

a) For students attending classes regularly, taking two written exams scheduled after the first half and at the end of the classes is possible. The written exam generally consists of multiple choice and two open questions. Questions have a different weight on the final evaluation, depending on their difficulty level. Students have to obtain a passing grade (the minimum is 18) for both of them to pass the course. The final mark will be an average of both results. The grade is based on a 30-point scale. The duration of the written exams is two hours at the most. Those students who cannot pass the written exams must take the oral exam on one or both parts according to the obtained grades.

To take the written exams, students must attend at least 2/3 of the classes, submit the assignments given for part 1 and participate in the critical reading for part 2, whose results will contribute to the final assessment.

b) Non-attending students have to pass an oral exam on both parts. The final exam consists of a verbal discussion about the topics treated in the course. It is based on four questions (two for each part of the course) and takes 20 minutes on average. The grading system applied is:

(18-24): sufficient or fair knowledge of the subject, adequate mastery of the technical language

(25-27): good or very good knowledge of the subject, technical language proficiency, and essential ability to connect the themes addressed during the course

(28-30 with honours): excellent knowledge of the subject and technical language proficiency, autonomous critical and analytical skills, and ability to apply acquired knowledge to concrete scenarios.

## Extended programming

### PART ONE – QUALITY FOCUS

- The evolution of the ‘quality’ concept: some general and technical definitions.
- Garvin’s eight-dimensional model for product quality.
- The quality gaps and Kano’s model for customer needs analysis.
- The three waves of quality control and management: from quality inspections to the preventive and proactive systems for control, assurance, management, and quality improvement.
- The PDCA cycle for the continuous improvement process and the Japanese Quality Control tools (the “Toolbox”) to base decisions on facts.
- Introduction to TQM, Six Sigma, ISO 9000 Quality Management Principles and main standards.

### SECOND PART ON - LIFE CYCLE THINKING

- Introduction to sustainable quality and circular economy (basic concepts and principles).
- Life Cycle Management (LCM) as an integrated approach to measure and minimize the impacts on the environment, the economy and society of a process, product or service.
- Life Cycle Assessment (LCA) Methodology: goal and scope definition, inventory of all the inputs and outputs, assessment of the potential impacts, interpretation of the inventory data and impact assessment results.
- European Integrated Product Policy and Environmental Labeling as an example of sustainable quality: application of Life Cycle Assessment.

## 2030 Agenda Goals for Sustainable Development

This course explores topics closely related to one or more United Nations 2030 Agenda for Sustainable Development (SDGs) goals.



