UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Industrial Management and Certification

2627-3-E2702Q104

Aims

Dealing with the main certified management systems in the areas of quality, occupational safety, environment, social responsibility and food safety, The course aims to provide the basic knowledge requested within the companies operational context, enriched by practical exercises drawn from the operational context of chemical companies at national and international level.

Upon passing the exam, students will be able to operate at a basic level within the management systems adopted by business organizations operating in the chemical and non-chemical sector. Based on the achievement of the following specific objectives:

- Knowledge and understanding: to know the general requirements of the ISO standards covered by the course and to understand the texts of the standards and their annexes of reference
- Applied knowledge and understanding skills: to be able to interpret the requirements of the ISO standards discussed in the course with reference to the specific business context and to understand the appropriate application modalities. To achieve this objective, the course is enriched by the treatment of numerous practical cases in interactive mode in classroom
- Autonomy of judgement: based on the two previous objectives, to be able to propose solutions for the requirements of the management system in relation to the objectives of the business processes; to know how to assess the consistency of the solutions adopted in the case studies
- Communicative skills: ability to explain the subject matter and requirements of ISO standards in a simple way
- Learning ability: learn how to practice the methods of Root Cause Analysis presented in class (exam part)

Contents

Management systems, definitions and application, national and international standards. Management systems for quality (UNI EN ISO 9001), quality control and statistical tools. Envinronmental management systems (UNI EN ISO

14001). Occupational Safety (UNI EN ISO 45001). Root cause analysis for claims and incidents. Food safety management systems (ISO 22000). Certification UNI PdR 125-2022. Audit of management systems.

Detailed program

Introduction to management systems and certification, national and international standards, ISO900x series. Adoption of a certified management systems; the role of Accredia and of the national certification bodies. Integrated management systems.

Management systems for quality (ISO 9001), The concept of quality and its evolution over time., quality control and statistical tools. Envinronmental management systems (ISO 14001); *Responsible Care programme* for chemical companies.
**Occupational Safety (ISO 45001). **
Food safety management systems (ISO 22000), HACCP method, control critical points.Elements of industrial risk management.
Gender equality certification.
Audit of management systems.

Prerequisites

No specific prerequisites within the study path

Teaching form

The lessons and exercises will take place in the classroom in an informative and interactive way with practical exercises.

Each lesson begins with a presentation of the specific topic followed by application examples within the business organization, with particular reference to chemical industry processes.
An interactive part follows to help you learn how to apply the management system requirements and develop a critical approach to achieving the sustainability objectives of the management system

The analysis of non-compliance, complaints and industrial incidents is carried out in class with the application of the CTA (Causal Three Analysis) method

Textbook and teaching resource

Professor's slides.

ISO standards (www.uni.it ; www.iso.org)

Accredia guidelines (www.accredia.it)

Responsible Care guidelines

L. Pavletic, Le nuove norme sui sistemi di gesgione per la qualità (UNI EN ISO 9001:2015) e Gestione Ambientale (UNI EN ISO 14001:2015); Franco Angeli

M. Sartor, Qualità – La gestione, gli strumenti, i metodi e le migliori esperienze; Gruppo 24Ore

D.C. Montgomery, Controllo statistico della qualità; McGraw-Hill

A. Chiarini, La conduzione degli audit; Franco Angeli

Linee guida per l'integrazione dei sistemi di gestione dell'ambiente e della sicurezza e salute sul lavoro nelle piccole e medie imprese; ISPESL

Semester

Third year, First semester

Assessment method

Oral exam, in Italian or English, with questions regarding the course topics and with reference to the material issued by the teacher and the application cases treated in class .

Evaluation criteria and voting

18-19: preparation on a small number of subjects present in the course program, with limited ability to deal and analysis that during the examination only emerge as a result of the help and questions of the teacher; speaking skills and vocabulary not always correct, with limited critical processing capacity and poor use of technical terms expressed in the requirements of the standards;
20-23: preparation on a part of the subjects in the course programme, ability to analyse independently only on purely practical and executive questions, use of correct although not entirely accurate and clear vocabulary and an uncertain ability to expound;
24-27: preparation on a wide range of subjects covered in the course programme, ability to independently develop argumentation and critical analysis, ability to apply knowledge to contexts and link topics to concrete cases, use of correct vocabulary and competence in the use of disciplinary language. ;
28 - 30/30L: thorough and comprehensive preparation on the topics in the examination programme, ability to deal independently and critically with the subjects, ability to reflect and self-reflect and to link the subjects to concrete cases and different contexts, excellent ability to think critically and independently, full mastery of the disciplinary vocabulary and a rigorous and articulated expository capacity, ability to argue, reflection and self-reflection, ability to link to other disciplines. Proper conduct of practical applications of cause analysis

Office hours

Everyday, upon reservation by e-mail

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING | QUALITY EDUCATION | GENDER EQUALITY | LIFE ON LAND