Course guide
240812 - 240812 - Quality and Environment

Last modified: 11/12/2023

Unit in charge: Barcelona School of Building Construction
Teaching unit: 732 - OE - Department of Management.

Degree: MASTER'S DEGREE IN OCCUPATIONAL HEALTH AND SAFETY (Syllabus 2016). (Compulsory subject).

Academic year: 2023 **ECTS Credits:** 3.0 **Languages:** Spanish

LECTURER

Coordinating lecturer: Rodriguez Mondelo, Pedro Manuel

Others: Galera Rodrigo, Asunción
Casanovas Rubio, Maria Del Mar

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
1. Identify and distinguish the different integration models for the prevention in the management of the company.

TEACHING METHODOLOGY

Face-to-face classes.
Group work.
public defenses.

LEARNING OBJECTIVES OF THE SUBJECT

-The main objective is to acquire the necessary knowledge about quality and environment in the company in order to be able to interact in these areas of the organization.
-Know the basic concepts of quality.
-Know the quality improvement tools and know how to interpret them.
-Be able to interpret a quality management system.
-Know the basic concepts about the environment.
-Know the basic principles of work to minimize the environmental impact in the company.
-Be able to interpret an environmental management system.

STUDY LOAD

Type	Hours	Percentage
Self study	48,0	64.00
Hours large group	27,0	36.00

Total learning time: 75 h

CONTENTS

-BASIC CONCEPTS OF QUALITY

Description:
historical framework
pre-industrial environments
the industrial environment
The Second World War
Japan
Europe

Fundamentals of quality management
The strategic, technical and managerial levels
Continuous improvement cycle
Standardization and international regulations

Quality in the company XXI
Quality in the Industry
Quality in Services

quality models
EQM model (European Foundation for Quality Management)
Beyond ISO 9000:2000
Current currents: sys sigma

Full-or-part-time: 1h
Theory classes: 1h

-BASIC QUALITY TOOLS

Description:
Tools for the definition of objectives
Information diagrams
Ishikawa diagrams
Pareto diagrams
Goal setting and scope

planning tools
Quality Function Deployment (QFD)
Failure Mode and Effects Analysis (FMEA)

Representation of processes: flowchart

Full-or-part-time: 1h
Theory classes: 1h

-MANAGEMENT FOR PROCESSES

Description:
Tools for monitoring and control
Variability study
Process management

Statistical processes control

Control charts for variables
X-R charts

Control charts for attributes
P-Charts
NP graphs

Other control charts
Cumulative sums and EWMA
Precontrol

Process Capability Studies

Implementation of the SPC

Full-or-part-time: 1h
Theory classes: 1h

-QUALITY SYSTEMS

Description:
o European Quality Model
o ISO 9000 Family
o Certification/QA

Full-or-part-time: 1h
Theory classes: 1h

-INTRODUCTION TO THE ENVIRONMENT

Description:
ecology and ecosystem
contamination and pollution
Environmental management system
Raw materials, energy and waste
Lifecycle

Full-or-part-time: 1h
Theory classes: 1h

-ENVIRONMENTAL PROTECTION MEASURES

Description:
Energy consumption
water consumption
Raw Materials
waste management
Wastewater management
smoke management
noise management
Product life cycle analysis
Compliance with tax obligations regarding the environment Implementation of an environmental management system in the company

Full-or-part-time: 1h
Theory classes: 1h

-ENVIRONMENTAL MANAGEMENT SYSTEMS IN THE COMPANY (SGMA)

Description:
Environmental management systems in the company (SGMA)
Introduction
What is an EMS
What are SGMAs used for and why are they implemented?
Who can implement an EMS
Parties involved in the implementation of an EMS
How EMS are implemented
1st phase: definition and communication of the project
2nd phase: design of the EMS
3rd phase: installation of the EMS
24th phase: audit, review and certification
Election of the SGMA
Coincidences and differences between the ISO environmental management system

Full-or-part-time: 1h
Theory classes: 1h

-ISO 14001

Description:
Purpose and scope of ISO 14001
Basic principles of ISO 14001
Continuous improvement cycle
Implementation of the ISO 14001 standard
ISO 14001 requirements
environmental policy
Planning
Implementation and operation
check
Management review
EMS certification according to ISO 14001

Full-or-part-time: 1h
Theory classes: 1h

-ENVIRONMENTAL IMPACT ASSESSMENT

Description:
Typology and characterization of impacts
Content and general methodology of the EIA
Analysis of the project and its alternatives
environmental inventory
Identification of actions - impacts
Identification of environmental factors
Impact identification
Impact Assessment
Corrective and preventive measures
Monitoring plan - environmental surveillance
Concept note

Full-or-part-time: 1h
Theory classes: 1h

-ENVIRONMENT EFFECT INVESTIGATION

Description:
E.I.A. in the spanish state
Administrative procedures in the EIA
Realization of the Es.I.A
Project description: background, location, actions.
Examination of technically feasible alternatives.
environmental inventory
Environmental factors
abiotic factors
Biotic factors
landscape factors
Socioeconomic factors
Identification and prediction of impacts.
impact assessment
Establishment of corrective measures
Environmental surveillance program.
Concept note

Full-or-part-time: 1h
Theory classes: 1h

GRADING SYSTEM

QUALITY: The student will have to submit, individually, a dossier where the contents taught in each class are collected. She will be provided with a blueprint from which she can begin to work. Contributions of content expansion, graphic and photographic illustration and inclusion of web resources will be valued.

ENVIRONMENT: Group work and public defense. The work will consist of presenting the environmental management system of a company in the civil works sector and the corrective actions carried out in the project for the layout of a motorway in a specific area of â□□â□□the territory. The project of this highway will be provided to the student, as well as the technical details in relation to the environmental impact.

FINAL MARK = (50% QUALITY + 25% GROUP WORK ENVIRONMENT + 25% INDIVIDUAL WORK ENVIRONMENT DEFENSE)/CLASS ATTENDANCE*

* Class attendance has a theoretical value between 0 and 1, where 1 is obtained from having attended 80% of classes (with justification) or 100% of classes. From here on, each absence is deducted 10%.

BIBLIOGRAPHY

Basic:
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- Miller, G. Tyler. Introducción a la ciencia ambiental : desarrollo sostenible de la tierra. Madrid: International Thomson, cop. 2002. ISBN 8497320530.
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- Amat Salas, Oriol. Costes de calidad y de no calidad. Barcelona: Ediciones Gestión 2000, 1992. ISBN 8486703956.
- Herramientas para la calidad. 2a ed.. [Madrid]: Asociación Española para la Calidad, 2004. ISBN 8489359385.

RESOURCES

Other resources:
Base de dades ISI WEB OF KNOWLEDGE

www.brookscole.com/biology
http://www.ecokidsonline.com/pub/eco_info/topics/climate/quiz/quiz2.cfm

Asociación Española de Evaluación de Impacto Ambiental (EIA): http://www.eia.es
International Association for Impact Assessment (IAIA): http://www.iaia.org
Ministerio de Medio Ambiente: http://www.mma.es
http://www.nsf.gov/
WEB MEDI AMBIENT EUROPA http://www.eea.europa.eu/es />WEB ISO : http://www.iso.org/iso/home.html />WEB EFQM: http://www.efqm.es/