UNIVERSITAT POLITÈCNICA DE CATALUNYA BARCELONATECH

Course guides
820063 - PRL - Prevention of Occupational Hazards

Last modified: 25/07/2016

Unit in charge: Barcelona East School of Engineering
Teaching unit: 717 - DEGD - Department of Engineering Graphics and Design.

Degree: **Academic year:** 2016 **ECTS Credits:** 6.0
Languages: Catalan, Spanish

LECTURER

Coordinating lecturer: SERGIO GÓMEZ GONZÁLEZ

Others: SERGIO GÓMEZ GONZÁLEZ

PRIOR SKILLS

None.

REQUIREMENTS

None.

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
1. Summarise information and undertake self-directed learning activities.
2. Apply regulations and standards based on sound criteria.

Transversal:
6. SELF-DIRECTED LEARNING - Level 3. Applying the knowledge gained in completing a task according to its relevance and importance. Deciding how to carry out a task, the amount of time to be devoted to it and the most suitable information sources.
3. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 3. Communicating clearly and efficiently in oral and written presentations. Adapting to audiences and communication aims by using suitable strategies and means.
4. ENTREPRENEURSHIP AND INNOVATION - Level 3. Using knowledge and strategic skills to set up and manage projects. Applying systemic solutions to complex problems. Devising and managing innovation in organizations.

TEACHING METHODOLOGY

During the contact hours (large group in the classroom) methodology is used exhibition.

LEARNING OBJECTIVES OF THE SUBJECT

The overall objective of the course is to provide students with a basic knowledge of safety management system under the current law and Royal Decrees (RD) in the area of risk prevention and health.

STUDY LOAD

Type	Hours	Percentage
Self study	90,0	60.00
Hours large group	60,0	40.00

Total learning time: 150 h

CONTENTS

Item 1. The security and preconceptions of PRL

Description:
Introduction to the prevention of occupational hazards.

Specific objectives:
Safety at work. Concepts. Differences between safety and prevention. Security techniques. Work and health: occupational hazards. Risk factors. Rights and responsibilities in prevention. PRL regulatory framework. Specialties: Safety, Occupational Medicine and Industrial Hygiene, Ergo-Psycho. Regulatory framework for the prevention of occupational hazards. Accidents and incidents. Damage resulting from illnesses and diseases arising from work.

Related activities:
Study of law laborals risk prevention.
Information INSHT i others.
Exercises and case studies.
Directed activities: management of risk prevention.

Full-or-part-time: 10h
Theory classes: 4h
Self study : 6h

Item 2. Risk analysis and techniques.

Description:
Risk analysis and applicable technical and reactive.

Specific objectives:
Quantitative and qualitative analysis of risks associated with working conditions (NTP 330). Safety inspections. Objective, methodology and stages. Analysis and investigation of accidents. Reporting of incidents and accidents. Regulations. Accident statistics. Statistical indices. Graphical representation of the evolution of the indexes and diagrams of study in the medium and long term statistical methods (NTP).

Related activities:
Study and application of methods of risk assessment, accident investigation and application of statistical techniques.
Exercises and case studies.
Management activities directed risk prevention.

Full-or-part-time: 10h
Theory classes: 4h
Self study : 6h

Item 3. Workplace Safety I

Description:
Specialty safety at work.

Specific objectives:
Location and work surface, signage and PPE. Location and area of work: terms and conditions of the premises and the work surface. Distribution of plant machinery. Improvement factors of safety. Order and cleanliness of the premises. Safe storage of materials. Hazards, preventive and protective measures. Signage Signage regulations.: Regulations and local centers. Safety signs. Classification and characteristics. Safety standards and safe work procedures. Development and implementation of internal rules. Personal protective equipment for personal protection. Accreditation and certification. Personal protection classes. Selection of personal protective equipment. Technical criteria and participation of workers. Maintenance of personal protective equipment and preventive evaluation of its effectiveness.

Related activities:
Study jobs, EPIS and signaling.
Exercises and case studies.
Activities: management of risk prevention.

Full-or-part-time: 10h
Theory classes: 4h
Self study : 6h

Item 4. Safety at Work II.

Description:
Safety at Work II.

Specific objectives:
Fire prevention and special works. Preventing the risk of fire and explosion hazards, preventive and protective measures. Structural protection of the premises. Fire detection, alarm and suppression. Emergency plan, evacuation and confinement. Dangerous work special. Hazard prevention and protection measures: work at height. Work in confined areas. First aid.

Related activities:
Prevention study of forest fires, confined spaces, etc. ..
Exercises and case studies
Directed activities: management of risk prevention.

Full-or-part-time: 10h
Theory classes: 4h
Self study : 6h

Item 5. Safety at Work III.

Description:
Safety at Work III.

Specific objectives:
Protection of machinery, chemical risk prevention and electrical hazard. Protection of machinery, equipment and hand tools. Inherent risks, prevention and protection. Protection principles. Selecting security measures and requirements that are required. Dimensions of guards and openings. Prevention of chemical risk: chemicals and dangerous. Classification. Identification and packaging of substances and preparations. Safety Data Sheet. Regulations. Storage of substances and preparations according to their characteristics and properties. Regulations. Intervention in dangerous facilities: special permits. Electrical hazards, risk prevention: preventive measures and effects of contact with electric current. Regulations. Protection against direct and indirect electrical contacts. Work on electrical installations and proximity to power lines. Special electrical installations.

Related activities:
Exercises and case studies.
Directed activities: management of risk prevention.

Full-or-part-time: 10h
Theory classes: 4h
Self study : 6h

Item 6. Management and integration of risk prevention.

Description:
Management of risk prevention.

Specific objectives:
Management and integration of risk prevention. Organization of prevention. Performance measures. Political culture and corporate preventive. The planning, programming, implementation and planning: preventive control. Organizational forms of prevention. Internal control techniques of prevention: internal audits, security reviews, security inspections, observations planned work. External control techniques of prevention: external audits, regulatory inspections. Precenció security and government agencies related to health.

Related activities:
PRL management for PYME.
Exercises and case studies.
Directed activities: management of risk prevention.

Full-or-part-time: 10h
Theory classes: 4h
Self study : 6h

Item 7. Industrial Hygiene I (chemical and biological environmental risks).

Description:
Chemical and biological environment risk

Specific objectives:
Exposure to chemical contaminants in the atmosphere. Chemical contaminants. Basic toxicology. Risk of exposure. Risk assessment methods and biological indicators: environmental criteria. Occupational exposure limit values and environmental OEL, TLV-TWA: TLV-C TLV-STEL, IBE. Definitions and uses. Detection and measurement of chemical pollutants. Prevention of risks of chemical contaminants pollutants: biological agents. Types and classification of biological agents. Possible origin and source of biological contaminants in the work environment. Risk of exposure and infection. Routes of entry and transmission. Classification of biological agents according to risk of infection. Prevention of risks from contaminants of biological agents. How to avoid elimination and reduction of risk by biological agents. Collective protection systems. Personal protective equipment .

Related activities:
Exercises and case studies
Dirigides Activities: Management of risk prevention.

Full-or-part-time: 10h
Theory classes: 4h
Self study : 6h

Item 8. Industrial Hygiene II (environmental and physical hazards I).

Description:
Physical environmental risks.

Specific objectives:
Physical agents such as environmental risk factors. Noise. Vibrations. Thermal environment. Ionizing radiation. Radultravioleta. No ultraviolet radiation.

Related activities:
Exercises and case studies.
Directed activities: management of risk prevention.

Full-or-part-time: 10h
Theory classes: 4h
Self study : 6h

Item 9. Industrial Hygiene II (environmental physical hazards II).

Description:
Environmental physical hazards II

Specific objectives:
Physical agents such as environmental risk factors. Ionizing radiation. Non-ionizing radiation.

Related activities:
Exercises
Directed activities: management of risk prevention.

Full-or-part-time: 10h
Theory classes: 4h
Self study : 6h

Item 10. Psychosociology Labor I.

Description:
Psychosociology Labor I.

Specific objectives:
Work-related stress. Mobbing (bullying) and other pathologies. Detection, identification and assessment of the risks of the organization and workload. Assessing the risks of the organization and workload.

Related activities:
Exercises
Directed activities: management of risk prevention.

Full-or-part-time: 10h
Theory classes: 4h
Self study : 6h

Item 11. Labor Psychosociology II.

Description:
Labor Psychosociology II.

Specific objectives:
Work-related stress. Mobbing (bullying) and other pathologies. Detection, identification and assessment of the risks of the organization and workload. Assessing the risks of the organization and workload.

Related activities:
Exercises
Directed activities: management of risk prevention.

Full-or-part-time: 10h
Theory classes: 4h
Self study : 6h

Item 12. Ergonomics I.

Description:
Ergonomics I.

Specific objectives:
Organization of work. Workplace. Design of the workplace. Design of machines and tools. Lighting, temperature, ventilation and humidity. Parameters and exposure limit values.

Related activities:
Exercises
Directed activities: management of risk prevention.

Full-or-part-time: 17h
Theory classes: 3h
Practical classes: 2h
Self study : 12h

Item 12. Ergonomics II.

Description:
Ergonomics II.

Specific objectives:
Workload. Methodology and techniques for assessing the burden of trabajo.Enfermedades Musculoesquelètiques. Characteristics, physiological consequences, psychological, social and employment. Evaluation methods. Interventions and preventive measures.

Related activities:
Exercises
Directed activities: management of risk prevention.

Full-or-part-time: 17h
Theory classes: 3h
Practical classes: 2h
Self study : 12h

GRADING SYSTEM

Continuous assessment of student work taking into account the practical work, tests (two sets) and directed activity.
Estuidio is evaluated and the student's independent work, both onsite and not in person, applied to all training activities:
- Individual assessment in each learning session independent of theoretical. 20%.
- Individual assessment for each practice session. 20%.
- Individual Assessment monograph (directed activity) and 10% generic competition.
- Individual evaluation of two sets theory and practice. 50%.

EXAMINATION RULES.

Practices and questionnaires must be made by hand (no computer). Directed activities (management of risk prevention and subject to defend) with your computer.

BIBLIOGRAPHY

Basic:
- Mateo Floría, Pedro; González Ruiz, Agustín; González Maestre, Diego. Manual para el técnico en prevención de riesgos laborales. 5ª ed. Madrid: Fundación Confemetal, DL 2006. ISBN 8496169812.