280704 - Management of Integrated Systems. Safety, Environment and Quality

Coordinating unit: 280 - FNB - Barcelona School of Nautical Studies
Teaching unit: 742 - CEN - Department of Nautical Sciences and Engineering
Academic year: 2020
Degree: MASTER'S DEGREE IN NAUTICAL SCIENCE AND MARITIME TRANSPORT MANAGEMENT (Syllabus 2016). (Teaching unit Compulsory)
MASTER'S DEGREE IN THE MANAGEMENT AND OPERATION OF MARINE ENERGY FACILITIES (Syllabus 2016). (Teaching unit Compulsory)
ECTS credits: 5
Teaching languages: Catalan, Spanish

Opening hours
Timetable: Tuesday: 10-12
Wednesday: 10-12
Thursday: 10-12

Degree competences to which the subject contributes

Basic:
CB6. Possess knowledge and understanding that provide a basis or opportunity to be original in the development and/or application of ideas, often in a research context.
CB7. That the students can apply their knowledge and ability to solve problems in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their study area.
CB9. That students can communicate their conclusions and the knowledge and latest rationale underpinning to specialists and non-specialists clearly and unambiguously.
CB10. Students must possess the learning skills that enable them to continue studying in a way that will be largely self-directed or autonomous.

Specific:
CE1-MNGTM. Conocimientos adecuados para iniciar la actividad investigadora. Metodología de la investigación aplicada a l'àmbit de l'especialitat.
CE6-MNGTM. Coneixement i capacitat per a la realització d'auditories i estudis de Gestió de Qualitat.

CE7-MNGTM. Conocimiento y capacidad para la realización de auditorías y estudios de Seguridad Marina.

CE8-MNGTM. Coneixement i capacitat per a la realització d'auditories i estudis d'impacte ambiental.

General:
CG10-MNGTM. (ENG) Capacidad de analizar, valorar y corregir el impacto social y ambiental de las soluciones técnicas en el ámbito de la especialidad.
CG11-MNGTM. Capacitat per a realitzar auditories energètiques i mediambientals.

Transversal:
CT2. SUSTAINABILITY AND SOCIAL COMMITMENT: Being aware of and understanding the complexity of the economic and social phenomena typical of a welfare society, and being able to relate social welfare to globalisation and sustainability and to use technique, technology, economics and sustainability in a balanced and compatible manner.
At the end of the course the student can demonstrate that:

Knows Environmental Standards. ISO 14000/14001, EMAS Regulation. Has extensive knowledge of them and Modes Application and Implementation.

Knows Quality Standards. ISO 9001. Has extensive knowledge of them and Modes Application and Implementation.

Knows safety regulations.

Knows The Standard OHSAS 18.001 on the management of Occupational Safety and Health.

Knows aspects of Corporate Social Responsibility.

The student is capable of carrying an Audit Process.

This course will evaluate the following STCW competences, according the Table A-II/2 & A-III/2:

18. Develop emergency and damage control plans and handle emergency situation (A-II/2)

Ensure safe working practices (A-III/2)

Teaching methodology

Receive, understand and synthesize knowledge.

Set up and solve problems.

Develop critical thinking and reasoning and defend it orally or in writing.

Perform work and activities individually or in groups.

Learning objectives of the subject

At the end of the course the student can demonstrate that:

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Knows Quality Standards. ISO 9001. Has extensive knowledge of them and Modes Application and Implementation.

Knows safety regulations.

Knows The Standard OHSAS 18.001 on the management of Occupational Safety and Health.

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18. Develop emergency and damage control plans and handle emergency situation (A-II/2)

Ensure safe working practices (A-III/2)

Study load

| Total learning time: 45h | Hours large group: | 45h | 100.00% |
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## Content

| ISO 9001. Management Quality Systems | **Learning time:** 2h  
Theory classes: 2h |
|-------------------------------------|----------------------|
| **Description:**                   | Evolution Systems Quality Management and its Principles.  
Requirements of a quality management system and the leadership and commitment of senior management.  
Planning for the quality management system.  
Resource Management-Support.  
Requirements for Product Realization-operation.  
Performance Evaluation and Improvement Processes. |

| ISO 14001 & EMAS Regulation: Environmental Management Systems | **Learning time:** 2h  
Theory classes: 2h |
|---------------------------------------------------------------|----------------------|
| **Description:**                                              | Environmental Management and ISO 14001.  
Special features of the Environmental Management System according EMAS Regulation.  
Analysis and Environmental Statement. |

| Advanced Tools for Sustainable Environmental Management | **Learning time:** 2h  
Theory classes: 2h |
|----------------------------------------------------------|----------------------|
| **Description:**                                          | Fundamentals of Ecodesign and Life Cycle of Products.  
What are the eco-labels.  
Sustainable Management and Certification.  
Ambientales.Análisis indicators and Environmental Risk Assessment. |
| corporate social responsibility | **Learning time:** 2h  
Theory classes: 2h |
|--------------------------------|--------------------------------------------------|
| **Description:** | Requirements and Implementation ISO 26000 and ISO CAP Evolution.  
Sustainability Reports. The Global Reporting Initiative (GRI).  
Requirements of AA1000.  
SA8000 requirements.  
Trends and Integration of Social Responsibility.  
Audits and Certification of Social Responsibility. |

| Health & Safety at work | **Learning time:** 2h  
Theory classes: 2h |
|-------------------------|--------------------------------------------------|
| **Description:** | Fundamentals of Occupational Safety.  
Application of Industrial Safety at Companies.  
Importance of Industrial Hygiene at Companies.  
Ergonomics.  
Psychosociological characteristics associated with Labour. |

| OHSAS 18001: Safety and Health Management System | **Learning time:** 2h  
Theory classes: 2h |
|-------------------------------------------------|--------------------------------------------------|
| **Description:** | Challenge of Safety and Health at Work.  
Documental Structure of Safety & Health Management Systems.  
General and Policy Requirements OHSMS.  
Planning Management System OHSAS.  
Implementation and operation of OHSMS.  
Testing and Management System Review OHSMS by management. |
# Integration of Management Systems Audit and Certification

**Description:**
- International Standardization and Industrial Safety.
- Main aspects of IMS Audits.
- Auditor IMS profile.
- Audit Process.
- Audit Report Preparation of a IMS.
- Integration of Management Systems.

**Learning time:** 2h  
Theory classes: 2h

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# Safety Management System (ISM Code)

**Description:**
- Background and the vision of the ISM Code
- Introduction to the 16 elements of the ISM Code
- Functional requirements for a SMS
- System of internal and external verification
- Interpretations and requirements of major flag States

**Specific objectives:***
- This knowledge is necessary in accordance with STCW Code A-II/2 and A-III/2 and it's developed according to MASTER AND CHIEF MATE (Model course 7.01) (2014 Edition) and CHIEF ENGINEER OFFICER AND SECOND ENGINEER OFFICER (Model course 7.02) (2014 Edition)

1. Preparation of contingency plans for response to emergencies
2. Ship construction, including damage control
3. Methods and aids for fire prevention, detection and extinction
4. Functions and use of life-saving appliances

Ensure safe working practices
Qualification system

The final score is the sum of the following partial grades:

\[ N_{\text{final}} = 0.5 \cdot N_{\text{pf}} + 0.3 \cdot N_{\text{act}} + 0.2 \cdot N_{\text{aca}} \]

- \( N_{\text{final}} \): final grade.
- \( N_{\text{pf}} \): final test score.
- \( N_{\text{act}} \): continuous assessment work.
- \( N_{\text{aca}} \): continuous assessment activities rating.

The final test consists of a part with issues related to the learning objectives of the course in terms of knowledge or understanding concepts, and a set of application exercises. Continuous assessment consists of different activities, both individual and group, summative and formative, made during the course (in the classroom and outside of it).

The reassessment of the course will consist of a final exam that will include all the contents of the subject.

Regulations for carrying out activities

If not any of the ongoing evaluation activities performed, shall be deemed not scored.
Be deemed not submitted the student/a not present at the final test or have not submitted at least 50% of the work and activities.

Bibliography

Basic: