Ship efficiency

COURSE OUTLINE

GENERAL

SCHOOL	Maritime and Industrial Studies		
ACADEMIC UNIT	Maritime Studies		
LEVEL OF STUDIES	Postgraduate		
COURSE CODE		S MESTER	2
COURSE TITLE	Ship Efficiency		
INDEPENDENT TEACHING ACTIVITIES if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits		WEEKLY TEACHING HOURS	CREDITS
		3	7.5

Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).

COURSE TYPE Specialized general knowledge

general background, special background, specialised general knowledge, skills development PREREQUISITE COURSES:	
LANGUAGE OF INSTRUCTION and EXAMINATIONS: IS THE COURSE OFFERED TO ERASMUS STUDENTS COURSE WEBSITE (URL)	English

LEARNING OUTCOMES

Learning outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area
- Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B
- Guidelines for writing Learning Outcomes

This subject covers the area of Zero Carbon Shipping. With the completion of this unit of the course, students become familiar with the basics characteristics as well as the advantages and disadvantages of modern and of emerging alternative marine fuels and energy systems, in direction of meeting the objectives of the IMO's Initial Strategy for the control of its gases shipping greenhouse.

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and
information, with the use of the necessary technologyProject planning and management
Respect for difference and multiculturalismAdapting to new situationsRespect for the natural environmentDecision-makingShowing social, professional and ethical responsibility and
sensitivity to gender issuesTeam workCriticism and self-criticismWorking in an international environmentProduction of free, creative and inductive thinking

Working in an interdisciplinary environment Production of new research ideas

Others...

Promotion of free, creative and inductive thinking Group work Decision making interdisciplinary approach Encouraging innovative thinking <u>Generation of new research ideas</u>

SYLLABUS

Coal Terminology, Definitions & amp; Examples Ship exhaust emissions: types & amp; regulations IMO Initial Strategy for the control of greenhouse gases Determinants & amp; limitations of zero carbon technologies in shipping Zero carbon fuels (hydrogen & ammonia): key features, production-types Maritime use of zero-carbon fuels: MEK and Fuel Cells Advantages-Disadvantages of using zero-carbon marine fuels Electric Ships: basic description, advantages-disadvantages, scope of application & amp; examples Transitional fuels (biofuels, natural gas, methanol): basic characteristics and advantages-disadvantages Comparative multi-parametric evaluation of alternative marine fuels and

energy systems

TEACHING and LEARNING METHODS - EVALUATION

Face-to-face, Distance learning, etc. **USE OF INFORMATION AND** COMMUNICATIONS TECHNOLOGY Use of ICT in teaching, laboratory education,

communication with students **TEACHING METHODS**

The manner and methods of teaching are described in detail.

Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.

The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS

STUDENT PERFORMANCE EVALUATION

Description of the evaluation procedure

Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, shortanswer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other

Specifically-defined evaluation criteria are given, and if and where they are accessible.

DELIVERY , Face-to-face and distanced learning

. Teaching: presentation of conference videos (introductions & discussions) Contact: e-class, MS Teams

Activity	Semester workload
Lectures	25
Project	50
Study	112
Course total	60

Multiple choice questionnaires

(3) ATTACHED BIBLIOGRAPHY

Lecture slides and selected research publications