Module Title: INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) SYSTEMS FOR SHIPPING TRADE AND TRANSPORT

- **Type of Module:**

ΓΕ0019	Compulsory

- **Level of Module**

Postgraduate

- **Year of Study** MASTER'S
- **Semester** 1st
- **Number of credits allocated** 5
- **Name of lecturer / lecturers : N. Nikitakos - T. Lilas**
- **Description:**

The course focuses on the application of "new technologies" in shipping, transport and trade, "New technologies" show significant development in recent years and this is related to the parallel development of information and communication technology. The development of internet and broadband contribute to the creation of new access services that support shipping, transport and trade. Course specializes in utilization of information systems in shipping and transport, along with basic principles of operation of electronic systems, applications to ships and the support that they provide throughout the maritime industry. Also, analyses applications of electronic systems in coastal areas, the ship voyage auditing systems, and the communication mechanisms that support the new management practices of the shipping companies. Specific characteristics of electronic systems are focused on their contribution to increase the safety levels, which is a major factor of modern shipping companies**.**

- **Prerequisites:**

N/A

- **Module Contents (Syllabus):**

- Course objectives, course content descriptions. Introductory concepts, The Value Chain in shipping, Electromagnetic spectrum, Communications Technologies, Introduction to Information Technology
- Computer Architecture, Introduction to computer networks, introduction to computer programming
- Analog Modulation, Digital Modulation, Information Processing - Codes Channels Telecommunication Networks - Technologies Switching Ethernet - FDDI - SONET - ATM, Integrated Services Digital Network
- Cellular Phone - Cell Phone 3G - Broadband Networks
- Satellite Communications Services, Communications and Networks for Shipping and Transport (GMDSS, GPS, Inmarsat, COSPAS, SARSAT), Galileo, radar systems and traffic control vehicles

- Multimedia Technologies and Applications in Maritime and Transport, Electronic Learning, Artificial Environments (Virtual Environments), transport applications
- ITS (Intelligent Transportation Systems), traffic control systems, driver information, avoiding accidents. Marine Systems AIS, VDR, VTS
- Geographic Information Systems (GIS), Electronic maps (ECDIS), Smart cards, transport applications
- Introduction to Electronic Commerce, Advantages - Disadvantages, E-commerce Applications in Shipping and Transport
- Information Systems, ERP Systems
- The technological future of transport systems and their exploitation strategy

Language of instruction / Γλώσσα διδασκαλίας
Greek - English (when required)

Name and contact info of lecturer / Στοιχεία διδάσκοντα

Name: Nikitas Nikitakos, Theodoros Lilas
Position: Professor, Lecturer
Office: Kountouriotou building, Korai building
Tel.: + 30 22710 35286, +30 22710 35273
Email: nnik@aegean.gr, lilas@aegean.gr

Expected learning outcomes / Μαθησιακοί στόχοι
AIMS OF THE COURSE
The aim of the course is the presentation and analysis of new cutting edge technologies that exist in transport and are expected to affect of business processes. The emphasis of the course is very much on:

- the analysis and comprehensive understanding of new technologies and their impact on shipping and transport,
- the process, criteria and scientific methods of evaluating new technologies,
- explaining the necessity that leads to the application of such systems in shipping and transport,
- acquainting students with the technologies used in safe management of ships and ports,
- analyzing the structure and characteristics of information and communications systems applied in the maritime sector.

LEARNING OUTCOMES
At the end of lectures students should be able:

- to understand the needs for safe management and the consequences of the lack of electronic systems,
- to know specific features of the systems used in shipping industry,
- be acquainted with ships audit procedures and ship activities at sea,
- to comprehend the interfaces between onboard and shipping company office that they will encounter in their careers.

Mode of delivery and teaching methods / Είδος μαθήματος και διδακτική μέθοδος

- Lectures supported by presentations and other audiovisual material (slides - educational videos),
- Presentation of case studies of electronic systems and new technologies,
- Laboratory exercises in order to practically understand key aspects,

- Attendance in lectures by executives of maritime sector.

Compulsory & recommended reading / Υποχρεωτική & Συνιστώμενη βιβλιογραφία

- Book [12508183]: "ELECTRONIC TECHNOLOGY ISSUES ON SHIPPING AND TRANSPORT" Nikitas Nikitakos, George Durmus
- Book [12788436]: "Information and communication technologies in shipping, Volume II" Kokotos Dimitrios, Linardatos Dionysis, Tzanatos Earnest, Nikitakos Nikitas
- Throughout the course additional online sources and publication are provided for further study.
- Also, slides related to the courses, are published in the website of the Department at the educational section (courses).

Assessment methods & criteria / Μέθοδος & κριτήρια αξιολόγησης

- Final examination 40%
- Semester project 30%
- Laboratory 30%
