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| Course Title | **Nautical Electronic Instruments** |
| Course Code | MANS-213 |
| Course Type | Required |
| Level | 1st Cycle |
| Year / Semester | 2nd Year, Fall Semester |
| Teacher’s Name |  |
| ECTS | 6 | Theory | Laboratory | Simulation | Tutorial |
| 3 | --- | 1 | --- |
| Course Purpose and Objectives | The main objectives of the course are to:* present the marine compasses (other than magnetic)
* present the marine steering gear systems
* present the marine speed logs
* present the marine echo sounders
* present the electronic docking systems
* present the Long Range Identification and Tracking receiver
* present the Bridge Navigational Watch Alarm System
* present the satellite navigation systems
* present the Automatic Identification System
* present the course recorder
* present the Voyage Data Recorder - SVDR
* present the hyperbolic navigation systems
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| Learning Outcomes | After completion of the course students are expected to be able to: * comprehend the working principles of the above equipment
* follow the proper operational procedures for each instrument
* take into consideration the standard and variable errors of the equipment
* cope with the most common malfunctions
* meet the necessary maintenance requirements
* recognize the capabilities and limitations of the equipment
* enhance the navigational development of the information provided
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| Prerequisites | MANS-104 | Required | MANS-214 |
| Course Content | * Marine compasses of all types (other than magnetic)
* Automatic steering gear systems
* Speed logs
* Echo sounders
* Docking systems
* LRIT
* BNWAS
* Satellite navigation principles
* Global Positioning System - Galileo
* AIS
* Data recorder
* VDR - SVDR
* Hyperbolic navigation systems
* e - LORAN
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| Teaching Methodology | Lectures, in-class assignments, sound and video equipment, computer, projector, the above electronic instruments or Bridge simulator or other equivalent method |
| Bibliography | **Required Textbooks/Reading:**

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| --- | --- | --- | --- | --- |
| **Authors** | **Title** | **Publisher** | **Year** | **ISBN** |
| Tetley, L., Calcutt, D. | 1. Electronic navigation systems, 3rd Edition
 | Elsevier, London  | 2001 | 0750651385 |

**Recommended Textbooks/Reading:**

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| **Authors** | **Title** | **Publisher** | **Year** | **ISBN** |
| [Stephen, F. Appleyard](http://www.amazon.com/s/ref%3Ddp_byline_sr_book_1?ie=UTF8&text=Stephen+F.+Appleyard&search-alias=books&field-author=Stephen+F.+Appleyard&sort=relevancerank)  | Marine Electronic Navigation, 2nd Edition | [Taylor & Francis](http://www.barnesandnoble.com/s/%22Taylor%20%26%20Francis%22;jsessionid=90CE27C160E9917C2D49504EAACB7F66.prodny_store02-atgap10?Ntk=Publisher&Ns=P_Sales_Rank&Ntx=mode+matchall) | 2006 | 9781134963096 |
| IMO | Performance standards for ship borne radio communications and navigational equipment | IMO | 2011 | 978-92-801-15239 |

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| Assessment | Homework, in-class assignments, projects, exams, final exam. |
| Language | English  |