|  |  |
| --- | --- |
| Course Title | **Applied Navigation**  |
| Course Code | MANS-211 |
| Course Type | Required |
| Level | 1st Cycle |
| Year / Semester | 2nd Year, Fall Semester |
| Teacher’s Name |  |
| ECTS | 8 | Theory | Laboratory | Simulation | Tutorial |
| 4 | 2 | --- | ------ |
| Course Purpose and Objectives | The main objectives of the course are to:* explain the role of time in celestial navigation
* introduce the altitudes corrections
* describe the use of the rising and setting of heavenly bodies in navigation
* define the twilight and its use to navigation
* give details about the latitude at noon and latitude by Polaris observations
* exhibit the utilization of two or more position lines in position fixing
* display the procedure of the recognition of heavenly bodies
* elaborate on issues of oceanographic phenomena
* analyze the navigation of life boats procedures
* clarify the reception procedures of the notices to mariners
 |
| Learning Outcomes | After completion of the course students are expected to be able to: * consider time in their position fixing process
* correct properly the sextant altitudes
* observe the true rising and setting of heavenly bodies as a means of establishing the compass error
* calculate the local times of morning and evening twilight
* extract the latitude out of a body’s meridian passage or out of a Polaris observation
* fix their position utilizing two or more position lines
* define the sea’s level using data provided by the tide tables
* safely navigate a life boat after abandoning the vessel
* receive and immediately install the corrections provided by the notices to mariners
 |
| Prerequisites | MANS-114 | Required | None |
| Course Content | * Time types, equation of time, solar and sidereal time
* Altitude corrections
* Rising and setting of heavenly bodies, twilights and relevant applications
* Compass error at true rise or set
* Compass error using time
* Latitude at sun’s meridian passage
* Polaris observations
* Evaluating a celestial position line
* Development of two or more celestial position lines
* Identification of heavenly bodies
* Tides, oceanographic phenomena
* Notices to mariners management
 |
| Teaching Methodology | Lectures, in-class assignments, sound and video equipment, computer, projector, relevant software, Bridge simulator |
| Bibliography | **Required Textbooks/Reading:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Authors** | **Title** | **Publisher** | **Year** | **ISBN** |
| Bowditch, N. | The American Practical Navigator | Paradise Cay Publications | 2004 | 0939837544 |

**Recommended Textbooks/Reading:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Authors** | **Title** | **Publisher** | **Year** | **ISBN** |
| Sybramaniam, H. | Practical Navigation  | Vijaya Publications | 1978 |  |
| Cutler, T.,J. | Dutton’s nautical navigation | US Naval Institute | 2003 | 9781557502483 |

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