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| Course Title | **Celestial Navigation** | | | | | | |
| Course Code | MANS-114 | | | | | | |
| Course Type | Required | | | | | | |
| Level | 1st Cycle | | | | | | |
| Year / Semester | 1st Year, Spring Semester | | | | | | |
| Teacher’s Name |  | | | | | | |
| ECTS | 5 | Theory | | Laboratory | Simulation | | Tutorial |
| 4 | | --- | --- | | --- |
| Course Purpose and Objectives | The main objectives of the course are to:   * present the basics on Geodesy * display the earth’s shape and dimensions, focusing on the navigational use of these elements * exhibit the celestial sphere * describe our solar system * display the motions of the navigational planets and stars * demonstrate the utilization of the above data in acquiring a position line | | | | | | |
| Learning Outcomes | After completion of the course students are expected to be able to:   * comprehend the basic Geodesy issues of navigational interest * realize the correspondence between the coordinates on the celestial sphere and on earth * explain the apparent motion of the celestial sphere * acquire position lines on the surface of the earth using observations of celestial bodies * compute the compass’s error using observations of celestial bodies * calculate the difference between rhumb line and great circle sailing | | | | | | |
| Prerequisites | MANS-111 | | Required | | | None | |
| Course Content | * Rhumb line and great circle sailing * Current as a parameter in course setting * Universe * Solar system * The celestial sphere * The equator coordinate system * Hour Angle * Daily motion and local coordinate system * Planets, moon * Nautical almanac * Sextant * Position fixing with celestial observations * Compass error with celestial observations | | | | | | |
| Teaching Methodology | Lectures, in-class assignments, sound and video equipment, computer, projector | | | | | | |
| Bibliography | **Required Textbooks/Reading:**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Authors** | **Title** | **Publisher** | **Year** | **ISBN** | | Nautical Institute | Admiralty Manual of Navigation | Nautical Institute | 2011 | 9781870077651 |   **Recommended Textbooks/Reading:**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Authors** | **Title** | **Publisher** | **Year** | **ISBN** | | Bowditch, N. | The American Practical Navigator | Paradise Cay Publications | 2004 | 0939837544 | | Toft, H. | GPS satellite navigation | Rauff and Soerenson | 1987 | 87-982698-3-6 | | | | | | | |
| Assessment | Homework, in-class assignments, projects, exams, final exam. | | | | | | |
| Language | English | | | | | | |