

Course Title	Celestial Navigation				
Course Code	MANS-114				
Course Type	Required				
Level	1 st Cycle				
Year / Semester	1 st Year, Spring Semester				
Teacher's Name	Mr. Tapanides Panayiotis				
ECTS	5	Theory	Laboratory	Simulation	Tutorial
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Course Purpose and Objectives	<p>The main objectives of the course are to:</p> <ul style="list-style-type: none"> • 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	<p>After completion of the course students are expected to be able to:</p> <ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Rhumb line and great circle sailing • Current as a parameter in course setting 				

	<ul style="list-style-type: none"> • 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	<p>Required Textbooks/Reading:</p> <table border="1"> <thead> <tr> <th>Authors</th> <th>Title</th> <th>Publisher</th> <th>Year</th> <th>ISBN</th> </tr> </thead> <tbody> <tr> <td>Nautical Institute</td> <td>Admiralty Manual of Navigation</td> <td>Nautical Institute</td> <td>2011</td> <td>9781870077651</td> </tr> </tbody> </table> <p>Recommended Textbooks/Reading:</p> <table border="1"> <thead> <tr> <th>Authors</th> <th>Title</th> <th>Publisher</th> <th>Year</th> <th>ISBN</th> </tr> </thead> <tbody> <tr> <td>Bowditch, N.</td> <td>The American Practical Navigator</td> <td>Paradise Cay Publications</td> <td>2004</td> <td>0939837544</td> </tr> <tr> <td>Toft, H.</td> <td>GPS satellite navigation</td> <td>Rauff and Soerenson</td> <td>1987</td> <td>87-982698-3-6</td> </tr> </tbody> </table>	Authors	Title	Publisher	Year	ISBN	Nautical Institute	Admiralty Manual of Navigation	Nautical Institute	2011	9781870077651	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
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Assessment	Homework, in-class assignments, projects, exams, final exam.																									
Language	English																									