

Course Title	RADAR				
Course Code	MANS-214				
Course Type	Required				
Level	1 <sup>st</sup> Cycle				
Year / Semester	4 <sup>th</sup> Year, Spring Semester				
Teacher's Name	Captain. Dr. Andreas Frangos (supervisor)				
ECTS	4	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"> <li>• present the RADAR operation principles</li> <li>• describe the operation of the major circuit groups</li> <li>• exhibit the installation and functional testing of the device</li> <li>• explain the function of the device's adjusters and switches</li> <li>• illustrate the device's echo recognition and its significance to navigation</li> <li>• clarify the undesirable effects of the false echoes</li> <li>• display the RADAR image presentation methods</li> <li>• discuss maintenance issues and counterbalancing of errors</li> <li>• elaborate on the use of RADAR in navigation</li> </ul>				
Learning Outcomes	<p>After completion of the course students are expected to be able to:</p> <ul style="list-style-type: none"> <li>• comprehend the working principles of RADAR and its main characteristics</li> <li>• safely start, operate and turn the device off</li> <li>• test the device for its proper operation and correct settings</li> <li>• cope with the most common malfunctions</li> <li>• meet the necessary maintenance requirements</li> <li>• distinguish the false echoes from small targets</li> <li>• choose the most appropriate screen orientation according to the prevailing circumstances</li> <li>• operate the device according to the relevant COLREGs provisions</li> </ul>				

Prerequisites	MANS-104	Required	MANS-213																										
Course Content	<ul style="list-style-type: none"> <li>• RADAR'S basic operational principles</li> <li>• Vertical and horizontal range of the radiation beam</li> <li>• Bearing and distance discrimination</li> <li>• Basic circuit groups</li> <li>• Antennas</li> <li>• Comparison between devices of 3 &amp; 10 cm</li> <li>• Targets, characteristics, reflection properties</li> <li>• True / relative motion</li> <li>• Orientations (Head up, North up, Course up)</li> <li>• True and relative target plotting</li> <li>• Acquisition of target data (CPA, TCPA, course and speed, relative or true)</li> <li>• Use of RADAR and COLREGs</li> </ul>																												
Teaching Methodology	RADAR simulator and theory at BSM Maritime Training Centre																												
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Assessment	Examination on RADAR simulator and provision of Certificate by approved and certified training center – BSM Maritime Training Centre																												
Language	English																												