Course Description

College/Institute: Maritime Postgraduate Studies Institute
Program: M.Sc in Hydrographic Surveying

1- Course Data		
Course Code: MPI 753	Nautical Charts	**Academic Year:2015-2016**
Specialization:	Hydrographic Surveying	

2- Course Aim	This course aims that students will become aware of maps and charts in terms of layout, uses and design issues. Students are exposed to both topographic and nautical charts and associated measurements and information representations. Projections of maps and charts are reviewed along with cartographic symbols displayed. Finally, issues relating to the Electronic Chart Display (ECDIS) are discussed. However, this course aims at enabling students to Master fundamentals and methods of research in order to produce their thesis in accordance to the academic final degree research requirements.
3- Intended Learning Outcome:	
a- Knowledge and Understanding, students will be able to:	1. become aware of maps and charts in terms of layout, uses and design issues. 2. understand both topographic and nautical charts and associated measurements and data representations. 3. recognize different types of maps and charts projections and understand cartographic symbols displayed. familiar with Electronic Chart Display (ECDIS)
b- Intellectual Skills, students will be able to:	Identify and critically analyze issues involved in nautical charts science and other branches and applications of nautical charts
c- Professional Skills, students will be able to:	1. Design Issues for Maps and Nautical Charts such as: - Horizontal and vertical datum issues in maps - Horizontal and vertical datum in issues nautical charts 2. be familiar with Topographic Surveying for Maps such as: - Planning a topographic survey - determine Positions

	- determine Heights Topographic data processing and presentation
d- General Skills, students will be able to:	1. Tidal and current measurements 2. Hydrographic data processing and presentation 3. Azimuthal, equidistant, equivalent and conformal map projections 4. Navigation Aids and Landmarks Representation 5. The Electronic Chart Display (ECDIS).
4- Course Content	**Week (1)** Introduction to Maps and Nautical Charts: The history and developments of maps and charts The use and layout of a map Purpose of the nautical chart The map versus the nautical chart Schematic Layout of a nautical chart **Week (2)** Design Issues for Maps and Nautical Charts: Map projections and scales Considerations for map use (mapmaker & user perspectives) Considerations for nautical chart use (chartmaker & user perspectives) **Week (3)** Design Issues for Maps and Nautical Charts (continued): Horizontal and vertical datum issues in maps Horizontal and vertical datum in issues nautical charts **Week (4)** Topographic Surveying for Maps: Planning a topographic survey Position determination Height determination **Week (5)** Topographic Surveying for Maps (continued):

	Height determination Topographic data processing and presentation Hydrographic Surveying for Nautical Charts: Planning a hydrographic survey **Week (6)** Hydrographic Surveying for Nautical Charts (continued): Hydrographic positioning **Week (7)** 7th week exam Hydrographic Surveying for Nautical Charts (continued): Hydrographic depth measurement **Week (8)** Hydrographic Surveying for Nautical Charts (continued): Tidal and current measurements Hydrographic data processing and presentation **Week (9)** Map and Nautical Charts Projections: Classification and characteristics of map projections **Week (10)** Map and Nautical Charts Projections (continued): Theory of distortions in map projections (distances, angles, areas) Azimuthal, equidistant, equivalent and conformal map projections **Week (11)** Map and Nautical Charts Projections (continued): Azimuthal, equidistant, equivalent and conformal map projections Some popular map projections in use worldwide

	Week (12) 12th week exam Topographic & Hydrographic Information Displays: on Maps & Nautical Charts: Natural features in maps and charts Elevation representation of topography and sea bed reliefs Other features representation on maps and nautical chart **Week (13)** Topographic & Hydrographic Information Displays (continued): on Maps & Nautical Charts (continued): Elevation representation of topography and sea bed reliefs Other features representation on maps and nautical chart **Week (14)** Navigation Aids and Landmarks Representation on a Nautical Chart: Lights, Buoys, fog signals, day beacons, and ranges Landmarks for in coastal navigation **Week (15)** The Electronic Chart Display (ECDIS) **Week (16)** Final exam
5- Teaching and Learning Methods	A mixture of lectures, tutorials, exercises, and case studies are used to deliver the various topics in this subject, some of which are covered in a problem-based format, thereby enhancing the learning objectives by using Office hours and Additional Follow up.
6- Teaching and Learning Methods for Students with Special Needs	
7- Student Assessment:	1.Participation 2.Assignments 3.Presentations 4.Case Study 5.Quiz

	6.Written Exams 7.Workshop
a- Procedures used:	
b- Schedule:	Assessment (1) Mid Assessment (2) 12th Assessment(3) 15th.
c- Weighing of Assessment:	7th Week Examination , 12th Week Examination , Final-term Report Writing , Oral seminar exam , Practical Examination , Semester Work , Total 100%
8- List of References:	Gary C. Kessler (2015). A Short Course on Nautical Charts and Basic Plotting for the Recreational Boater. Ormond Beach, FL
a- Course Notes	
b- Required Books (Textbooks)	INTERNATIONAL HYDROGRAPHIC ORGANIZATION, (2013). REGULATIONS OF THE IHO FOR INTERNATIONAL (INT) CHARTS A CHART SPECIFICATIONS OF THE IHO. MONACO, Author
c- Recommended Books	
d- Periodicals, Web Sites, ..., etc.	

Vice Dean for Educational Affairs
Affairs Name & Signature:
Date:

College/Institute Dean
Name & Signature:
Date: