BSc in Nautical Science

Τελικό Πρόγραμμα Μαθημάτων

A/A	Course Type	Course Name	Course Code	Periods per week	Period duration	Number of weeks/ Academic semester	Total periods/ Academic semester	Number of ECTS
A' Semester (Year 1)								
1	Compulsory	Mathematics I	MANS-101	4	50 MIN.	13	52	6
2	Compulsory	Physics I	MANS-102	3	50 MIN.	13	39	5
3	Compulsory	Maritime English	MANS-105	3	50 MIN.	13	39	4
4	Compulsory	Navigation Fundamentals	MANS-111	4	50 MIN.	13	52	5
5	Compulsory	COLREGS - Safety of Watch	MANS-112	4	50 MIN.	13	52	5
6	Compulsory	Basic Safety and Security	MANS-106	3	50 MIN.	13	39	5
							Semester ECTS	**30**
B' Semester (Year 1)								
7	Compulsory	Mathematics II	MANS-103	2	50 MIN.	13	26	3
8	Compulsory	Physics II	MANS-104	3	50 MIN.	13	39	4
9	Compulsory	Celestial Navigation	MANS-114	4	50 MIN.	13	52	5
10	Compulsory	Maritime Law	MANS-115	6	50 MIN.	13	78	6
11	Compulsory	Safety on Board	MANS-131	2	50 MIN.	13	26	3
12	Compulsory	Deck Seamanship	MANS-132	5	50 MIN.	13	65	5
13	Compulsory	Naval Architecture - Design	MANS-133	3	50 MIN.	13	39	4
							Semester ECTS	**30**

A/A	Course Type	Course Name	Course Code	Periods per week	Period duration	Number of weeks/ Academic semester	Total periods/ Academic semester	Number of ECTS
C' Semester (Year 2)								
14	Compulsory	Applied Navigation	MANS-211	6	50 MIN.	13	78	8
15	Compulsory	Marine Meteorology	MANS-212	4	50 MIN.	13	52	6
16	Compulsory	Nautical Electronic Instruments	MANS-213	4	50 MIN.	13	52	6
17	Compulsory	Ship Chartering	MANS-214	2	50 MIN.	13	30	3
18	Compulsory	Marine Engines	MANS-215	2	50 MIN.	13	30	4
19	Compulsory	Marine Insurance	MANS-216	2	50 MIN.	13	30	3
							Semester ECTS	**30**
D' Semester (Year 2)								
20	Compulsory	Practical Training on Board	MANS-290	6 months				30
							Semester ECTS	**30**

A/A	Course Type	Course Name	Course Code	Periods per week	Period duration	Number of weeks/ Academic semester	Total periods/ Academic semester	Number of ECTS
E' Semester (Year 3)								
21	Compulsory	GMDSS	MANS-311	6	50 MIN.	13	104	8
22	Compulsory	Safety and Risk Management	MANS-312	2	50 MIN.	13	26	3
23	Compulsory	Marine Legal Issues	MANS-331	4	50 MIN.	13	52	4
24	Compulsory	Human Resource Management	MANS-332	2	50 MIN.	13	26	2
25	Compulsory	Leadership and Administration	MANS-333	2	50 MIN.	13	26	2
26	Compulsory	Crisis-Management - Risk Assessment	MANS-334	2	50 MIN.	13	26	3
27	Compulsory	Advanced Safety and Security	MANS-335	5	50 MIN.	13	65	5
28	Compulsory	Information Technology	MANS-391	3	50 MIN.	13	39	3
							Semester ECTS	**30**
F' Semester (Year 3)								
29	Compulsory	Ship Management	MANS-320	2	50 MIN.	13	26	3
30	Compulsory	Ship Stability & Strength	MANS-321	6	50 MIN.	13	78	7
31	Compulsory	Cargo Transport	MANS-322	6	50 MIN.	13	78	7
32	Compulsory	MARPOL - Ballast Water Management	MANS-335	2	50 MIN.	13	26	3
33	Compulsory	Emergencies and SAR	MANS-336	2	50 MIN.	13	26	3
34	Compulsory	Ship's Inspections	MANS-337	2	50 MIN.	13	26	3
35	Compulsory	Ship Steering Control Systems	MANS-323	2	50 MIN.	13	26	**4**
								26
	Electives							
		Sea-going Concentration						
35	Elective	Ship Steering Control Systems	MANS-323	2	50 MIN.	13	26	**4**
		Shore-based Concentration						
35	Elective	Research Methodology	MANS-324	2	50 MIN.	13	26	**4**
							Semester ECTS	**30**

A/A	Course Type	Course Name	Course Code	Periods per week	Period duration	Number of weeks/ Academic semester	Total periods/ Academic semester	Number of ECTS
G' Semester (Year 4)								
36	Compulsory	Practical Training on Board	MANS-290C	6 months				30
							Semester ECTS	**30**
H' Semester (Year 4)								
37	Compulsory	ECDIS	MANS-430	3	50 MIN.	13	39	6
38	Compulsory	ARPA & RADAR - Watch Keeping	MANS-431	3	50 MIN.	13	39	6
39	Compulsory	ISPS - SSO	MANS-432	2	50 MIN.	13	26	4
40	Compulsory	Simulation – BTM – BRM – BMS	MANS-433	3	50 MIN.	13	39	6
								22
	Electives							
		Sea-going Concentration						
41	Electives	Shipbroking & Chartering Practices	MANS-435	2	50 MIN.	13	26	4
42	Electives	Port & Terminal Management	MANS-436	2	50 MIN.	13	26	4
								8
		Shore-based Concentration						
41	Electives	Liner Operations	MANS-434	2	50 MIN.	13	26	3
42	Electives	Bachelor Thesis	MANS-490	-	-	13	-	5
								8
							Semester ECTS	**30**

BSc in Nautical Science

Analytical Course Syllabus

Year 1

Semester A

<table>
<tr><td>Course Title</td><td colspan="6">Mathematics I</td></tr>
<tr><td>Course Code</td><td colspan="6">MANS-101</td></tr>
<tr><td>Course Type</td><td colspan="6">Required</td></tr>
<tr><td>Level</td><td colspan="6">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="6">1st Year, Fall Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="6"></td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">6</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td><td>Seminar</td></tr>
<tr><td>4</td><td>-----</td><td>-----</td><td>-----</td><td>----</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="6">The main objectives of the course are
• basic arithmetical operations;
• arithmetical expressions;
• basic algebra
• linear and quadratics equations and methods of solution
• basic statistical methods</td></tr>
<tr><td>Learning Outcomes</td><td colspan="6">After completion of the course students are expected to be able to:
• be proficient in calculations involving the basic arithmetical operations and algebra essentials;
• deal with arithmetical expressions involving the use of brackets;
• construct graphs of linear and polynomial expressions
• solve problems in algebra.
• perform basic interpolation of functions</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="3">MANS -102,</td></tr>
<tr><td>Course Content</td><td colspan="6">1. ALGEBRA
• sums, differences, products and quotients of simple algebraic expressions, including simple fractions
• expansion of the square and the cube, the difference of squares and cubes, the summation of cubes
• extraction of common factors, simplification of expressions and collection of common terms
• solution of problems leading to linear equations, solution of systems of two equations in two unknowns
• quadratic equations
• 'absolute error' and 'relative error'
• percentage errors in areas and volumes

2. GRAPHS</td></tr>
</table>

	• draws and labels axes • defines 'origin', 'abscissa', 'ordinate', and describes how a point is identified by its Cartesian co-ordinates • determines suitable scales from given data • plots points, given their Cartesian co-ordinates • draws a smooth curve through plotted points • given the abscissa, reads the value of the ordinate and vice versa • extracts values from graphs of ship's data • draws graphs of given functions • solves simultaneous equations graphically **3. PROPORTION , VARIATION AND INTERPOLATION** • defines the ratio of two quantities, and uses the notation a : b = a/b • uses the notation a:b :: c:d and states that it is equivalent to a/b = c/d • given any three quantities of a proportional equation, calculates the fourth • explains that map and drawing scales are expressed as ratios • solves problems involving scales • states that two quantities which vary so as to maintain a constant ratio are said to vary directly • states that a quantity is said to vary inversely as another when it varies directly as the reciprocal of the other • states that a quantity is said to vary jointly as a number of others when it varies directly as their product • solves problems on direct, inverse and joint variation explains what is meant by linear interpolation • shows how linear interpolation is an application of proportion • uses linear interpolation to find intermediate values in tables such as ullage tables and deadweight scales • given intermediate values, performs inverse interpolation to find the value of the argument • uses differences in inverse interpolation • describes the arrangement and use of critical tables • interpolates in tables with two arguments • given the value of one argument, uses inverse interpolation to find the value of the other argument • performs linear extrapolation • explains, with the aid of a diagram, how the linear assumption may lead to error in the interpolated value • states that the intervals of arguments used in navigational tables are sufficiently small that linear interpolation produces negligible errors
Teaching Methodology	Lectures and Assignments

<table>
<tr><td>Bibliography</td><td>Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>Library Access</th></tr>
<tr><td>M. Sullivan and M. Sullivan III</td><td>Precalculus</td><td>Pearson</td><td>2017
7th Edition</td><td>Print copy at library</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>Library Access</th></tr>
<tr><td>M. Bittinger, J. Beecher, D. Ellenbogen, J. Penna</td><td>Precalculus: Graphs and Models</td><td>Pearson</td><td>2017
6th Editio n</td><td>Print copy at library</td></tr>
</table>
</td></tr>
<tr><td>Assessment</td><td>Midterm Exam, Final Exam, Assignments</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

Course Title	**Physics I**

<table>
<tr><td>Course Code</td><td colspan="5">MANS-102</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">1st Year, Fall Semester</td></tr>
<tr><td>Teacher's Name</td><td colspan="5">Mrs. Panayiota Argyrou</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">5</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>3</td><td>---</td><td>---</td><td>-----</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are:

• to introduce students to the basic concepts of mechanics.
• to assist in the development of strong problem-solving skills
• to help cultivate critical thinking in the approach to learning</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to:

• Assign the correct units of measurement to physical quantities and convert from one unit of measurement to another.
• Analyze the motion of a particle in one and two dimensions using the quantities of velocity, acceleration and displacement.
• Apply Newton's Laws of motion to solve problems.
• Analyze the equilibrium of extended objects based on the acting forces and moments
• Apply the principles of conservation of energy, linear momentum and angular momentum to solve problems.
• Analyze situations involving fluids in equilibrium and fluids in motion employing Bernoulli's equation</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">1. Fundamental Units and Measurement, conversions
2. Vectors
3. Motion in one and two dimensions (displacement, velocity, acceleration)
4. Force and Newton's Laws of Motion, Friction, Drag force
5. Work and Kinetic Energy Theorem, Potential Energy, Mechanical Energy, Conservation of Mechanical Energy
6. Motion of a System of particles, Center of Mass & Linear Momentum Conservation
7. Moments and Equilibrium
8. Rotational motion and angular momentum</td></tr>
</table>

<table>
<tr><td></td><td>9. Simple Machines, mechanical advantage, efficiency and speed ratio
10. Fluids at equilibrium: Hydrostatic Pressure, Pascal's Principle Buoyancy
11. Fluids in motion, continuity equation, Bernoulli's equation</td></tr>
<tr><td>Teaching Methodology</td><td>Lectures, Tutorials</td></tr>
<tr><td>Bibliography</td><td>Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>Library Access</th></tr>
<tr><td>D. Giancoli</td><td>Physics, Principles with applications</td><td>Pearson</td><td>7th Edition</td><td>Print copy at library</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>Library Access</th></tr>
<tr><td>Ben Crowell</td><td>Conceptual Physics</td><td>http://www.lightandmatter.com/</td><td></td><td>Free to download</td></tr>
</table></td></tr>
<tr><td>Assessment</td><td>Midterm Exam, Final Exam, Homework Assignments</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

<table>
<tr><td>Course Title</td><td colspan="5">Maritime English</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-105</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">1st Year, Fall Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Mrs. Chrysanthi Papaioannou</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">4</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>3</td><td>-----</td><td>---</td><td>---</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:

• integrate adequate control of the English language
• cover the use of language requirements set by STCW 2010
• promote the adequate understanding of the contents of nautical charts and publications
• introduce of the IMO SMCP
• evaluate the operation and safety related messages
• demonstrate team work as part of a multilingual crew</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:

• interpret weather reports
• comprehend the title, notes and signs used in nautical charts
• demonstrate safe ship – shore and ship to ship communication
• demonstrate safe communication between bridge team members
• fill in forms and write reports
• brief others on navigational aids information and electronic equipment status
• compose emergency messages involving armed attack and / or piracy
• discuss about fire protection and fire fighting
• conduct communication related to environmental protection
• guide passengers in emergency situations
• elaborate on trim and stability issues</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">• Standard bridge and engine orders
• Simulation of VHF communication</td></tr>
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Description of meteorological conditions
Report of incidents at sea
Application of the phonetic alphabet
Request of medical assistance
Performance of Distress communications
Standard wheel orders
Communication with pilot on bridge
Bridge electronic equipment status, warnings, alarms
Sources providing navigational aids information
Safety messages (transmission, reception)
Fire drills, related orders, fire fighting, incident reports, relevant communications
Procedures and communications (internal and external), following an environmental incident
Directions to passengers in routing and emergency situations

Communications related to trim and stability details in emergency situations
</td></tr>
<tr><td>Teaching Methodology</td><td>Lectures, in-class assignments, sound and video equipment, computer, projector</td></tr>
<tr><td>Bibliography</td><td>
Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Blakey, T.N.</td><td>English for maritime studies</td><td>Prentice Hall</td><td>1988</td><td>798-0132813792</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Weeks, F., Glover, A., Jonson, E., Strevens, P.</td><td>Seaspeak Training Manual</td><td>Plymouth</td><td>1992</td><td>0-08-031555-0</td></tr>
<tr><td>IMO</td><td>Standard Marine Communication Phrases</td><td>IMO</td><td>2002</td><td>978-92-801-51374</td></tr>
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</td></tr>
<tr><td>Assessment</td><td>Homework, in-class assignments, projects, exams, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
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<table>
<tr><td>Course Title</td><td colspan="5">Navigation Fundamentals</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-111</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">1st Year, Fall Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Mr. Panayiotis Tafanides</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">5</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>3</td><td>1</td><td>---</td><td>----</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:

• exhibit the planning of a safe passage considering all the related parameters
• demonstrate safe practices that ensure a proper and accurate course keeping
• display the ways the ship’s position is defined
• describe the magnetic compass’s working principles and its errors
• present the basic modern navigational instruments</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:

• execute the passage plan under all prevailing conditions
• navigate in narrow waters and in areas covered by VTS schemes
• plot the ship’s fixed position with all the available means on board
• employ surface observations to fix the ship’s position
• compute the magnetic compass’s error
• extract navigational data from the bridge’s electronic means of navigation</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">• Earth and coordinate systems
• Direction, speed, distance and depth calculations
• Visual and acoustic aids to navigation
• Electronic navigational equipment
• Nautical publications
• Chart projections
• Navigation following the passage plan
• Position lines of different types
• Fixing the ship’s position
• Entering, navigating through and exiting a VTS scheme
• Zone time, nautical chronometers</td></tr>
</table>

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<tr><td></td><td>

Magnetic compasses description
Magnetic compass’s error

</td></tr>
<tr><td>Teaching Methodology</td><td>Lectures, in-class assignments, sound and video equipment, computer, projector, simulation or other equivalent exercise environment</td></tr>
<tr><td>Bibliography</td><td>
Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Nautical Institute</td><td>Admiralty Manual of Navigation</td><td>Nautical Institute</td><td>2011</td><td>9781870077651</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Wootenunder Edge</td><td>An introduction to coastal navigation</td><td>Morgan’s technical books</td><td>1985</td><td>0-948254-02-5</td></tr>
<tr><td>Frost, A.</td><td>The Principles and Practice of Navigation</td><td>Glasgow, Brown, Son & Ferguson</td><td>1988</td><td>0-85174-444-3</td></tr>
</table>
</td></tr>
<tr><td>Assessment</td><td>Homework, in-class assignments, projects, exams, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
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<table>
<tr><td>Course Title</td><td colspan="5">COLREGS – Safety of Watch</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-112</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">1st Year, Fall Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Captain, Dr. Andreas Frangos</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">5</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>4</td><td>---</td><td>---</td><td>-----</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• familiarize the trainees with the lights, shapes and sounds of Collisions avoidance Regulations
• explain the context of the COLREGS
• underline the importance of proper application of the COLREGS code
• introduce the relevant to the Safety of Watch provisions of the STCW
• present the standards for safe Watch keeping</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:
• identify the lights, shapes and sounds of the COLREGS as amended
• implement without hesitation the COLREGS code
• apply the rules in complicated situations
• value the meaning of the relevant to the Safety of Watch provisions of the STCW
• appreciate the Safety of Watch standards</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">• Analysis of the rules 1-41 and its 6 sections of the COLREGS 1972
• Lights and Shapes that are exhibited according to the COLREGS code
• Lights and Shapes of vessels of different length and type
• Lights and Shapes of vessels according to the operation they are engaged with
• Sounds in different visibility conditions
• Sounds, Lights and Shapes at port
• Demonstrate an understand of rules / Study Cases
• Contents of STCW as amended
• Watch keeping at sea and at port
• Guidance regarding the fitness for duty
• Guidance regarding watch keeping arrangements and principles to be observed
• Demonstrate and understand rules / Case Studies</td></tr>
</table>

<table>
<tr><td>Teaching Methodology</td><td>Lectures, in-class assignments, sound and video equipment, computer, projector</td></tr>
<tr><td>Bibliography</td><td>
Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Wright, C.H.</td><td>The Collision Regulations</td><td>Glasgow, Brown, Son & Ferguson</td><td>1989</td><td>978-0851745664</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>IMO</td><td>COLREG 1972</td><td>IMO</td><td>2003</td><td>978-92-801-41672</td></tr>
<tr><td>IMO</td><td>STCW as amended</td><td>IMO</td><td>2011</td><td>978-92-801-15284</td></tr>
</table>
</td></tr>
<tr><td>Assessment</td><td>Homework, in-class assignments, projects, exams, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

<table>
<tr><td>Course Title</td><td colspan="5">Basic Safety Training & Security Awareness</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-106</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">1st Year, Fall Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">BSM – MTC (Mr. Tafanides Panayiotis as Supervisor)</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">5</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>2</td><td>1</td><td>---</td><td>----</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• Acquire basic knowledge and experience of personal survival principles and techniques
• Understand life-saving appliances and control plans onboard
• Apply personal survival principles and techniques to maximize chances of survival in the event of marine casualty
• Acquire knowledge to enable personnel without designated securities duties in connection with a ship security plan to enhance ship security</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:

• Understand the meaning and consequential requirements of the different security levels
• Have knowledge of emergency procedures and contingency plans
• Recognize and detect weapons, dangerous substances and devices
• Recognize, on a non-discriminatory basis, of characteristics and behavioral patterns of persons who are likely to threaten security
• Have knowledge of techniques used to circumvent security measures
• Demonstrate the ability to assist passengers en route to muster and embarkation stations
• Understand mustering procedures</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">1. Maritime Security Policy

2. Security Responsibilities

3. Threat Identification, Recognition and Response

4. Ship Security Actions

5. Emergency Preparedness, Drills and Exercises</td></tr>
</table>

<table>
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6. Personal Survival Techniques

7. Fire Fighting and Fire Prevention

8. Elementary First Aid

9. Personal Safety and Social Responsibility

</td></tr>
<tr><td>Teaching Methodology</td><td>Lectures, in-class assignments, sound and video equipment, computer, projector, practical training</td></tr>
<tr><td>Bibliography</td><td>

Required Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
IMO	Guide to Maritime Security & The ISPS Code, 2021 Edition	IMO	2021	978-9280117400
IMO	International Life-Saving Appliance (LSA) Code	IMO	2017	9789280131505

Recommended Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
J. Kraska and R. Pedrozo	International Maritime Security Law XXVI	Martinus Nijhoff Publishers	2013	978-9004233560

</td></tr>
<tr><td>Assessment</td><td>In-class assignments, practical assessment, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

Year 1

Semester B

<table>
<tr><td>Course Title</td><td colspan="6">Mathematics II</td></tr>
<tr><td>Course Code</td><td colspan="6">MANS-103</td></tr>
<tr><td>Course Type</td><td colspan="6">Required</td></tr>
<tr><td>Level</td><td colspan="6">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="6">1st Year, Spring Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="6">Mrs. Panayiota Argyrou</td></tr>
<tr><td>ECTS</td><td rowspan="2">3</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td><td>Seminar</td></tr>
<tr><td>2</td><td>-----</td><td>-----</td><td>---------</td><td>----</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="6">The main objectives of the course are to:
Present data using basic statistics
To perform trigonometric functions and operations;
To understand and apply basic geometry</td></tr>
<tr><td>Learning Outcomes</td><td colspan="6">After completion of the course students are expected to be able to:
Extract information with the use of statistics
Be proficient in calculations involving the basic arithmetical operations and algebra essentials;
Deal with arithmetical expressions involving the use of brackets;
Construct graphs of linear and polynomial expressions
Solve problems in algebra.
Perform basic interpolation of functions</td></tr>
<tr><td>Prerequisites</td><td colspan="2">MANS-101</td><td>Required</td><td colspan="3">None</td></tr>
<tr><td>Course Content</td><td colspan="6">1. TRIGONOMETRY
Describes the measurement of angle in degrees, minutes and seconds of arc
Describes the measurement of angle in circular measure and defines the radian
States that 1 radian is approximately equivalent to 57.3°
Defines sine, cosine and tangent as ratios of the sides of a right-angled triangle
Defines the reciprocal ratios cosecant, secant and cotangent
States the complementary pairs of ratios
Solves problems reducible to right-angled triangles
States the values of trigonometrical functions for angles 0°, 30°,45 °, 60°, 90° (using scientific calculators)
Determines the trigonometrical functions for angles of any size</td></tr>
</table>

- Draws graphs of the trigonometrical functions over the range -360^{o} to 360^{o}
- States the period of the functions sine, cosine and tangent
- Uses trigonometrical formula sin2a + cos2a = 1 and sina/cosa = tana in solving simple identities
- Solves problems involving the application of objectives on right angled triangle /oblique plane triangles using the cosine and sine formulae
- Explains the ambiguous case when using the sine formula

2. MENSURATION

- Revises calculations for the perimeters and areas of:
  - a square
  - a rectangle
  - a parallelogram
  - a trapezium
  - a rhombus
  - a triangle
  - a circle
- Calculates the areas of sectors and segments of a circle
- Calculates the surface areas and volumes of:
  - a cube
  - a rectangular and a triangular prism
  - a cylinder
  - a right circular cone
  - a sphere
- Length and Angle;
- Use of instruments to construct simple figures;
- Calculate the perimeter, area and volume of rectangular figures;
- Angles of triangle and angles formed by the intersection of lines; basic algebra and solution of linear and quadratics equations

3. GEOMETRY

- Distinguishes equilateral, isosceles, right-angled and scalene triangles
- Defines acute, obtuse and reflex angles
- States the sum of the angles of a plane triangle
- Proves the property of exterior angles
- Explains what is meant by congruent triangles
- Solves problems involving the application of objectives
- Describes the properties of similar triangles
- Constructs triangles from given data
- Explains the ambiguous case, given two sides and a non-included angle
- States Pythagoras's theorem, without proof, and uses it to calculate one side of a right-angled triangle, given the other two
- States the relationships between angles formed by a transversal to two parallel straight lines
- Defines an arc, a sector, a chord and a segment of a circle

	• Determines arc length, given radius and angle of sector • States that angles subtended by a chord in the same segment of a circle are equal • States that the angle subtended by a chord at the center of a circle is twice the angle subtended at the circumference • States that the angle subtended at the circumference by a diameter is a right angle • Defines a quadrilateral, a parallelogram, a trapezium and a rhombus • Calculates areas of sectors and segments of a circle • Explains and applies Simpson's first, second and five-eighth rule for their use in the computation of areas, volumes and centroids (no derivations required) • Constructs: - a perpendicular to a line from a given point - a perpendicular to a line at a given point on the line - a tangent to a circle - the perpendicular bisector of a line - the bisector of an angle • Divides a line into a given number of equal parts • Determines: - the circumcentre of a triangle - the in-center of a triangle • Defines a median of a triangle • Defines the centroid of a triangle and determines centroids by construction • Given three points and the angles subtended by pairs of those points at a position, determines the position by plotting **4. SPHERICAL TRIANGLES** • Defines a great circle, small circle, pole and a small circle • Defines a spherical triangle as a figure on the surface of a sphere bounded by arcs of three great circles • Defines the angle between two great circles as the angle between the planes in which they lie • Describes how the length of a side is measured as an angle • States that the sum of the angles of a spherical triangle exceeds 180^o but is less than 540^o • States that no side exceeds 180^o • Explain right-angled spherical triangles and their properties • Explain Napier's rule for right angled spherical triangles and quadrantal spherical triangles • Explain polar triangles and their application in the solution of spherical triangles

- Given two parts of a right-angled spherical triangle, uses Napier's rules to solve for any other part
- States what is meant by a quadrantal triangle 6
- Given two parts of a quadrantal triangle, uses Napier's rules to solve for any other part solves problems involving oblique spherical triangles by use of the cosine and sine formulae
- Uses the haversine formula to solve right-angled spherical triangle and explains its advantage over the sine and cosine formulae

solves problems on spherical triangles by dropping a perpendicular and solving the resulting right-angled triangle

5. BASIC STATISTICS

- Basic concept of statistics
- Collection, processing, presentation and data analysis
- Finding and interpreting of central tendency and variance
- Probability theory – classical and empirical probability
- Probability distribution and discrete random variables

Teaching Methodology

Lectures, tutorials and assignments

Bibliography

Required Textbooks/Reading:

Authors	**Title**	**Publisher**	**Year**	**Library Access**
M. Sullivan and M. Sullivan III	Precalculus	Pearson	2017 7th Edition	Print copy at library

Authors	**Title**	**Publisher**	**Year**	**Library Access**
H. Anton, I. Bivens, S. Davis III	Calculus	Wiley	2012 10th Edition	Print copy at library

Recommended Textbooks/Reading:

Authors	**Title**	**Publisher**	**Year**	**Library Access**
M. Bittinger, J. Beecher, D. Ellenbogen, J. Penna	Precalculus: Graphs and Models	Pearson	2017 6th Editio n	Print copy at library

Assessment

Midterm Exam, Final Exam, Assignments

Language	English
Assessment	Midterm Exam, Final Exam, Assignments
Language	English

<table>
<tr><td>Course Title</td><td colspan="5">Physics II</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-104</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">1st Year, Spring Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Mrs. Panayiota Argyrou</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">4</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>3</td><td>----</td><td>---</td><td>----</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:

• introduce students to the basic concepts of thermal physics and waves
• to assist in the development of strong problem-solving skills
• to help cultivate critical thinking in the approach to learning
• consolidate the basic principles discussed in the theoretical section of the course with laboratory experiments</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to:

1. Describe simple harmonic motion, calculate the variables in simple harmonic motion, analyze the period of oscillations with regard to mass and spring stiffness in mass-spring systems.
2. Understand forced oscillations and the importance of resonance in nature and engineering applications.
3. Be able to mathematically express a traveling wave and a standing wave as a result of interference.
4. Understand the principles of electricity and magnetism</td></tr>
<tr><td>Prerequisites</td><td colspan="2">MANS-102</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">1. Simple harmonic motion and Resonance
2. Transverse and longitudinal waves, wave characteristics, interference and standing waves
3. Sound waves, speed of sound, standing waves, Doppler effect
4. Electricity
5. Magnetism

<u>Experiments</u>
Simple Harmonic Motion</td></tr>
</table>

<table>
<tr><td></td><td>Standing waves in string
Speed of sound and resonance tube
Electric Circuits
Magnetic devices</td></tr>
<tr><td>Teaching Methodology</td><td>Lectures, Tutorials, Laboratory Work</td></tr>
<tr><td>Bibliography</td><td>Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>Library Access</th></tr>
<tr><td>D. Giancoli</td><td>Physics, Principles with applications</td><td>Pearson</td><td>7th Edition</td><td>Copy</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>Library Access</th></tr>
<tr><td>Ben Crowell</td><td>Conceptual</td><td>http://www.lightandmatter.com/</td><td>Ben Crowell</td><td>Free to download</td></tr>
</table></td></tr>
<tr><td>Assessment</td><td>Midterm Exam, Final Exam, Homework Assignments, Lab reports</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

<table>
<tr><td>Course Title</td><td colspan="5">Celestial Navigation</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-114</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">1st Year, Spring Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Mr. Tafanides Panayiotis</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">5</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>4</td><td>---</td><td>---</td><td>---</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">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</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">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</td></tr>
<tr><td>Prerequisites</td><td colspan="2">MANS-111</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">• 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</td></tr>
</table>

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Position fixing with celestial observations
Compass error with celestial observations

</td></tr>
<tr><td>Teaching Methodology</td><td>Lectures, in-class assignments, sound and video equipment, computer, projector</td></tr>
<tr><td>Bibliography</td><td>
Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Nautical Institute</td><td>Admiralty Manual of Navigation</td><td>Nautical Institute</td><td>2011</td><td>9781870077651</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<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>
</table>
</td></tr>
<tr><td>Assessment</td><td>Homework, in-class assignments, projects, exams, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
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<table>
<tr><td>Course Title</td><td colspan="5">Maritime Law</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-115</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">1st Year, Spring Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Mrs. Maria Athanasiou</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">6</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>6</td><td>---</td><td>---</td><td>---</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• introduce the basics on the Law of the seas
• elaborate on the basic provisions of the IMO conventions related to the safety of human life at sea
• exhibit the international certificates issued according to the above conventions
• demonstrate the ISM system and the General standards in maritime industry
• present the Vessel Traffic Separation Schemes organization and operation principles</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:
• employ the basic provisions of the law of the seas
• apply the provisions of the relevant IMO conventions to the operational practices on board
• identify the international certificates issued under the above conventions
• utilize the ISM code on board
• apply all the general international standards regarding the legal operation of the ship
• recognize the VTS organization and operation principles</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">• Law of the sea
• International organization
• SOLAS as amended
• International Load Line convention
• International Telecommunications convention
• STCW as amended
• Health legislation
• Maritime labor convention
• International maritime standards.
• Quality management standards (ISO 9001)
• Environmental management standards (ISO 14001)
• Occupational health and safety management systems (BSI OHSAS 18001)</td></tr>
</table>

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International maritime policies
Vessel’s maritime documents of legal interest
Pilotage (legal status, responsibilities)
Customs (legal status, responsibilities)
Legal status of vessels in foreign ports
VTS (legal status, responsibilities)

International Safety Management System (detailed presentation)
</td></tr>
<tr><td>Teaching Methodology</td><td>Lectures, in-class assignments, sound and video equipment, computer, projector</td></tr>
<tr><td>Bibliography</td><td>
Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Hill, C.</td><td>Maritime law</td><td>Limited Lloyd’s of London Press</td><td>2003</td><td>1-84311-255-8</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>IMO</td><td>ISM with guidelines for its implementation</td><td>IMO</td><td>2014</td><td>978-92-801-15901</td></tr>
<tr><td>IMO</td><td>Ships’ routing</td><td>IMO</td><td>2013</td><td>978-92-801-15543</td></tr>
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<tr><td>Assessment</td><td>Homework, in-class assignments, projects, exams, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

<table>
<tr><td>Course Title</td><td colspan="5">Safety on Board</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-131</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">1st Year, Spring Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Mr. Tafanides Panayiotis</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">3</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>1</td><td>1</td><td>---</td><td>---</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• discuss general safety issues and the prevention of accidents on board
• demonstrate the proper rowing and sailing practices
• explain the details concerning the safe use of ropes and wire ropes, lifting equipment systems, derricks and cranes, mooring operations, hatch covers, anchors, anchor capstans and chain cable stowage, safety of cargo handling operations
• introduce the personnel safety protocols
• describe the basic safety issues while executing mooring and anchoring maneuvers under any wind, current or tide conditions</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:
• comprehend the importance of the general safety issues and implement the best practices to avoid accidents on board
• apply in all weather conditions the proper rowing and sailing practices
• realize the most important details concerning the safe use of ropes and wire ropes, lifting equipment systems, derricks and cranes, mooring operations, hatch covers, anchors, anchor capstans, chain cable stowage
• enhance the safety of cargo handling operations
• exercise all the applicable personnel safety best practices
• execute the basic mooring and anchoring maneuvers under any wind, current or tide conditions</td></tr>
<tr><td>Prerequisites</td><td colspan="2">MANS-103</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">• Safety and accident prevention
• Cargo related safety – dry and liquid cargo
• Personnel safety – crew safety on board
• Safety and dry & liquid cargo handling
• Safe operation of deck machinery and equipment in different types of vessels
• Safety during mooring and anchoring procedures
• Entry in enclosed spaces
• Work while hanging high</td></tr>
</table>

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Safety during maintenance operations
Filling of safety related forms
Safety signs on board

</td></tr>
<tr><td>Teaching Methodology</td><td>Lectures, in-class assignments, sound and video equipment, computer, projector</td></tr>
<tr><td>Bibliography</td><td>
Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>ILO</td><td>Accident Prevention on Board Ship at Sea and in Port</td><td>ILO</td><td>1996</td><td>92-2-109450-2</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Wankhede, A., Kantharia, R.</td><td>The ultimate guide to personal safety on ships</td><td>Marine Insight</td><td>2012</td><td></td></tr>
<tr><td>Wankhede, A., Kantharia, R.</td><td>The ultimate guide to safety signs on ships</td><td>Marine Insight</td><td>2012</td><td></td></tr>
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</td></tr>
<tr><td>Assessment</td><td>Homework, in-class assignments, projects, exams, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
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<table>
<tr><td>Course Title</td><td colspan="5">Deck Seamanship</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-132</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">1st Year, Spring Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Mr. Tafanides Panayiotis</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">5</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>5</td><td>---</td><td>---</td><td>----</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• exhibit the various types of vessels
• present the vessels typical dimensions
• display the function of the various parts and spaces of a vessel
• describe the purpose of deck machinery and equipment
introduce the basic knots</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:
• distinguish the various types of vessels
• locate the ship’s dimensions from the vessel’s blueprints
• name the different parts of the ship and realize their operational contribution
• comprehend the proper way to handle the deck machinery and equipment
• properly stow, maintain and utilize ropes and wires</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">• Vessel description
• Compartments – Spaces and its supranational contribution
• Handle the deck machinery and equipment
• Hatch covers
• Boats
• Maintenance of Life Saving floating devices
• Ropes and wire ropes description
• Ropes and wires proper stowage, maintenance and safe utilization
• Weight lifting systems
• Derricks and cranes
• Mooring procedures
• Vessel’s mooring and anchoring maneuvers
• Utilization of anchors, chain and cable stowage
• Knots & Splicing</td></tr>
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<tr><td>Teaching Methodology</td><td>Lectures, in-class assignments, sound and video equipment, computer, projector</td></tr>
<tr><td>Bibliography</td><td>Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Danton, G.</td><td>The Theory and Practice of Seamanship</td><td>London, Routledge</td><td>1996</td><td>0-415-14200-8</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Witherby</td><td>21st Century Seamanship</td><td>Witherby</td><td>2015</td><td>978-1-85609-632-4</td></tr>
<tr><td>NP 100</td><td>The Mariner’s Handbook</td><td>Hydrographer of the Navy</td><td>1989</td><td></td></tr>
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<tr><td>Assessment</td><td>Homework, in-class assignments, projects, exams, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
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<table>
<tr><td>Course Title</td><td colspan="5">Naval Architecture - Design</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-133</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">1st Year, Spring Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Mr. Konstantinidis Dimitris</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">4</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>2</td><td>1</td><td>---</td><td>---</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• introduce all the major structural parts and elements of the vessel
• explain the most important watertight subdivision issues
• demonstrate the ship’s blueprints
• present the terminology of the various types of rudders and screws
• present the basic drawing tools and materials
• display the typical ways that an object can be represented on paper
exhibit the basics on mechanical and architectural design</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:
• name all the major structural parts and elements of the vessel
• comprehend the basic details of any vessel’s watertight subdivision, drawing information out of the ship’s plans and manuals
• locate any structural point on the blueprints and vice versa
• name the major parts of the various types of rudders and screws
• handle all basic drawing tools and materials
represent simple objects and components on paper exercising the basic principles of mechanical and architectural design</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">• Vessel reinforcement systems
• Double bottoms, purpose and construction
• Structural solution to the problem of pounding
• Structural reinforcement to confront the head on stresses
• Upper deck constructions
• Stern construction
• Upper deck construction
• Section plans
• Piping networks
• Corrosion and similar problems</td></tr>
</table>

<table>
<tr><td></td><td>

Underwater hull pollution prevention
General description of rudders
General description of screws
Generalities about design
Axonometric presentation
Drawing with orthographic projections
Vess Lectures, in-class assignments, sound and video equipment, computer, projector el’s blueprints

</td></tr>
<tr><td>Teaching Methodology</td><td>Lectures, in-class assignments, sound and video equipment, computer, projector</td></tr>
<tr><td>Bibliography</td><td>
Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Eyres, D., J.</td><td>Ship construction</td><td>Butterworth - Heinemann</td><td>2001</td><td>0 7506 4887 2</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Dr D. A. Taylor
Dr Alan ST Tang</td><td>Merchant Ship Naval Architecture</td><td>IMAREST</td><td>2006</td><td>1-902536-56-8</td></tr>
<tr><td>Dr D. A. Taylor</td><td>Merchant Ship Construction 4th</td><td>IMAREST</td><td>2000</td><td>1-9022536-00-2</td></tr>
</table>
</td></tr>
<tr><td>Assessment</td><td>Homework, in-class assignments, projects, exams, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

Year 2

Semester C

<table>
<tr><td>Course Title</td><td colspan="5">Applied Navigation</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-211</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">2nd Year, Fall Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Mr. Tafanides Panayiotis</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">8</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>4</td><td>2</td><td>---</td><td>------</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">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</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">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</td></tr>
<tr><td>Prerequisites</td><td colspan="2">MANS-114</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">• 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</td></tr>
</table>

<table>
<tr><td></td><td>

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

</td></tr>
<tr><td>Teaching Methodology</td><td>Lectures, in-class assignments, sound and video equipment, computer, projector, relevant software, Bridge simulator</td></tr>
<tr><td>Bibliography</td><td>
Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Bowditch, N.</td><td>The American Practical Navigator</td><td>Paradise Cay Publications</td><td>2004</td><td>0939837544</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Sybramaniam, H.</td><td>Practical Navigation</td><td>Vijaya Publications</td><td>1978</td><td></td></tr>
<tr><td>Cutler, T.,J.</td><td>Dutton’s nautical navigation</td><td>US Naval Institute</td><td>2003</td><td>9781557502483</td></tr>
</table>
</td></tr>
<tr><td>Assessment</td><td>Homework, in-class assignments, projects, exams, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

<table>
<tr><td>Course Title</td><td colspan="5">Marine Meteorology</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-212</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">2nd Year, Fall Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Mr. Peristianis Vasileiou/Capt. Nicholas Makris</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">6</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>4</td><td>---</td><td>---</td><td>-----</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• present the meteorological instruments on board
• introduce the characteristics of the various weather systems
• analyze the weather reporting procedures
• explain the symbols used in the synoptic chart and in the pilot charts
• elaborate on the area weather prognosis given the prevailing weather conditions and other relevant information
• display the characteristics of the revolving tropical storms and the best practices to avoid the dangerous semicircle
• represent the structure of the depressions
• exhibit the operation and the targets of the World Meteorological Organization
• describe the meteorological codes
• illustrate the weather prognosis procedures
• demonstrate the ocean currents systems basics
• exhibit the ice basics</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:
• name and utilize the meteorological instruments on board and evaluate their readings
• identify the major weather systems
• fill a weather report following the proper procedure
• receive analytic and forecasting charts, weather bulletins, NAVTEX weather reports, satellite photos
• read in detail a synoptic and a pilot chart
• make a local weather prognosis given the prevailing weather conditions and other relevant information
• recognize the characteristics of revolving tropical storms and employ the best practices to avoid the dangerous semicircle
• realize the importance of the services WMO is offering
• code and decode meteorological data
• apply weather prognosis practices to ensure a safe passage</td></tr>
</table>

<table>
<tr><td></td><td colspan="3">• comprehend the basics on the ocean currents systems
• appreciate the development and distribution of sea ice</td></tr>
<tr><td>Prerequisites</td><td>None</td><td>Required</td><td>None</td></tr>
<tr><td>Course Content</td><td colspan="3">• Atmosphere, its elements and its natural properties
• Atmospheric pressure
• Winds and waves
• Clouds and precipitation
• Visibility
• General circulation of atmosphere
• Regional wind systems
• Air masses and fronts
• Barometric Lows and Highs
• Tropical revolving storms
• Meteorological support for mariners
• Meteorological observations on board
• Weather forecasting
• Ocean currents
• Ice</td></tr>
<tr><td>Teaching Methodology</td><td colspan="3">Lectures, in-class assignments, sound and video equipment, computer, projector, internet</td></tr>
<tr><td>Bibliography</td><td colspan="3">
Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Meteorological office</td><td>Meteorology for Mariners</td><td>London HMSO</td><td>1996</td><td>0-114-00367X</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Cornish, M., Ives. E.</td><td>Reeds Maritime Meteorology</td><td>Adlard Coles</td><td>2010</td><td>978-1408112069</td></tr>
<tr><td>Meteorological office</td><td>Marine Observer’s Handbook</td><td>London HMSO</td><td>1995</td><td>0-11-400297-5</td></tr>
</table>
</td></tr>
<tr><td>Assessment</td><td colspan="3">Homework, in-class assignments, projects, exams, final exam.</td></tr>
<tr><td>Language</td><td colspan="3">English</td></tr>
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<table>
<tr><td>Course Title</td><td colspan="5">Nautical Electronic Instruments</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-213</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">2nd Year, Fall Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Captain Hatzis Ioannis</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">6</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>3</td><td>---</td><td>1</td><td>---</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• present the marine compasses (other than magnetic)
• present the marine steering gear systems
• present the marine speed logs
• present the marine echo sounders
• present the electronic docking systems
• present the Long Range Identification and Tracking receiver
• present the Bridge Navigational Watch Alarm System
• present the satellite navigation systems
• present the Automatic Identification System
• present the course recorder
• present the Voyage Data Recorder - SVDR
• present the hyperbolic navigation systems</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:
• comprehend the working principles of the above equipment
• follow the proper operational procedures for each instrument
• take into consideration the standard and variable errors of the equipment
• cope with the most common malfunctions
• meet the necessary maintenance requirements
• recognize the capabilities and limitations of the equipment
• enhance the navigational development of the information provided</td></tr>
<tr><td>Prerequisites</td><td colspan="2">MANS-104</td><td>Required</td><td colspan="2">MANS-214</td></tr>
<tr><td>Course Content</td><td colspan="5">• Marine compasses of all types (other than magnetic)
• Automatic steering gear systems
• Speed logs
• Echo sounders
• Docking systems</td></tr>
</table>

<table>
<tr><td></td><td>

LRIT
BNWAS
Satellite navigation principles
Global Positioning System - Galileo
AIS
Data recorder
VDR - SVDR
Hyperbolic navigation systems
e - LORAN

</td></tr>
<tr><td>Teaching Methodology</td><td>Lectures, in-class assignments, sound and video equipment, computer, projector, the above electronic instruments or Bridge simulator or other equivalent method</td></tr>
<tr><td>Bibliography</td><td>
Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Tetley, L., Calcutt, D.</td><td>Electronic navigation systems, 3rd Edition</td><td>Elsevier, London</td><td>2001</td><td>0750651385</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Stephen, F. Appleyard</td><td>Marine Electronic Navigation, 2nd Edition</td><td>Taylor & Francis</td><td>2006</td><td>9781134963096</td></tr>
<tr><td>IMO</td><td>Performance standards for ship borne radio communications and navigational equipment</td><td>IMO</td><td>2011</td><td>978-92-801-15239</td></tr>
</table>
</td></tr>
<tr><td>Assessment</td><td>Homework, in-class assignments, projects, exams, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

<table>
<tr><td>Course Title</td><td colspan="5">Marine Engines</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-215</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">2nd Year, Fall Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Chief Engineer Robert Dunn</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">3</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>2</td><td>---</td><td>---</td><td>---</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:

• present the operational and constructional principles of the marine main engines and the auxiliary machinery
• provide the terminology of marine mechanology
• offer details on remote controls, automation and engine room operational observation
• explain the basics on fuels and lubricants</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:

• comprehend the basic working principles of a modern engine room
• name all the major machinery parts, components and networks in the engine room
• recognize the automated way a modern engine room is run
• identify the major characteristics of the fuels and lubricants used in marine engines</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">• Operational description of the vessel’s propulsion system
• Main engine systems
• Auxiliary machinery and installations
• Engine room safety plans
• Remote control systems, automations, engine room operation’s observation systems
• Distance, speed, consumption
• Deck machinery
• Pumps, pumping net
• Steering system
• Systems failures</td></tr>
</table>

<table>
<tr><td>Teaching Methodology</td><td>Lectures, in-class assignments, sound and video equipment, computer, projector, simulation software</td></tr>
<tr><td>Bibliography</td><td>Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>McGeorge, H., D.</td><td>General engineering knowledge</td><td>Routledge</td><td>2011</td><td>9780750600064</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Embleton, W.</td><td>Instruments & control systems for deck officers</td><td>Reeds</td><td>2002</td><td>9780901281159</td></tr>
<tr><td>Taylor, D., A.</td><td>Introduction to marine engineering</td><td>Butterworth-Heinemann</td><td>1996</td><td>9780750625302</td></tr>
</table></td></tr>
<tr><td>Assessment</td><td>Homework, in-class assignments, projects, exams, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

<table>
<tr><td>Course Title</td><td colspan="5">Ship Chartering</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-214</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">2nd Year, Fall Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Captain. Dr. Andreas Frangos</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">3</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>2</td><td>---</td><td>---</td><td>----</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• Introduce the basic principles of international conventions referring to the procedures related to the transport of goods by sea
• Elaborate on charter parties and bills of lading
• Analyze the definitions and major clauses of the legal agreements</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:
• Recognize the basic international conventions related to the transport of goods by sea
• Appreciate the context of the charter parties and bills of lading
• Comprehend the definitions and major clauses used in the above legal agreements</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">• Introduction to chartering and definitions
• Vessel types and cargoes
• Demand & Supply for seaborne transportation
• Freight Indices and fixing
• The chartering process of a vessel and the primary and secondary chartering forms
• Parties involved in the chartering process
• Positions & Orders - Offers & Counter Offers</td></tr>
</table>

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<tr><td></td><td>

Voyage Estimation & Laytime Calculation
Freight Agreement Analysis - Introductory Concepts
Analysis of Chartering Strategies
Analysis of the relation between Freights & Vessels' values – Vessel Valuation
Sale & Purchase

</td></tr>
<tr><td>Teaching Methodology</td><td>Lectures, in-class assignments, sound and video equipment, computer, projector</td></tr>
<tr><td>Bibliography</td><td>
Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Institute of Chartered Shipbrokers</td><td>Dry cargo chartering</td><td>Institute of Chartered Shipbrokers</td><td>2017</td><td>978-1-911328-03-2</td></tr>
<tr><td>Institute of Chartered Shipbrokers</td><td>Tanker chartering</td><td>Institute of Chartered Shipbrokers</td><td>2021</td><td>978-1-911328-16-2</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Sparka, F.</td><td>Jurisdiction and arbitration clauses in maritime transport documents</td><td>Springer</td><td>2009</td><td>978-3-642-10221-9</td></tr>
</table>
</td></tr>
<tr><td>Assessment</td><td>Homework, in-class assignments, projects, exams, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
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<table>
<tr><td>Course Title</td><td colspan="5">Marine Insurance</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-216</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">2nd Year, Fall Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Captain. Dr. Andreas Frangos</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">3</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>2</td><td>---</td><td>---</td><td>----</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• Understand the economic and legal framework of International Marine Insurance
• Become familiar with the necessity of marine insurance and the important part marine insurance plays in shipping
• Acquire general knowledge of individual covers and the terminology used</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:

• Identify the insurance needs of the owners and charterers
• Identify relevant covers and the markets available for placing the covers
• Handle simple insurance claims
• Comprehend the definitions and major clauses used in the above legal agreements
• Evaluate the assistance the P&I clubs can offer in adverse situations</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">1. Classification Societies
History of Marine Insurance and Marine Insurance Markets
London Market, Lloyds and ILU

2. The Law of Marine Insurance – National and International laws and conventions

3. Definitions and terminology
Rights and duties when entering into an insurance contract or renew such
Contracts and policies
Institute time clauses and conditions

4. Marine Insurance Covers
Owners and charterers insurable interest
Mortgage and privileges</td></tr>
</table>

<table>
<tr><td></td><td>

5. Hull and Machinery insurance

6. Builders Risk Insurance

7. War risk

8. P & I clubs
P&I insurance
Contribution and advantages
Importance of sea worthiness

</td></tr>
<tr><td>Teaching Methodology</td><td>Lectures, in-class assignments, sound and video equipment, computer, projector</td></tr>
<tr><td>Bibliography</td><td>

Required Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
Institute of Chartered Shipbrokers	Marine Insurance, 2017 Edition	Institute of Chartered Shipbrokers	2017	978-1-911328-04-9

Recommended Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
Sparka, F.	Jurisdiction and arbitration clauses in maritime transport documents	Springer	2009	978-3-642-10221-9

</td></tr>
<tr><td>Assessment</td><td>Homework, in-class assignments, projects, exams, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

Year 2

Semester D

<table>
<tr><td>Course Title</td><td colspan="6">Practical Training on Board</td></tr>
<tr><td>Course Code</td><td colspan="6">MANS-290</td></tr>
<tr><td>Course Type</td><td colspan="6">Required</td></tr>
<tr><td>Level</td><td colspan="6">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="6">1st Year, Summer, 2nd Year Fall Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="6">Captain. Dr. Frangos Andreas</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">30</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td><td>Seminar</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="6">The main objectives of the practical training are to :
Provide the students with real life practical training
Give students an insight into working life on board a ship
Undertake everyday duties on board a ship
Undertake Project work</td></tr>
<tr><td>Learning Outcomes</td><td colspan="6">After completion of the course students are expected to be familiar with :
Safety procedures and shipboard familiarisation
Particulars of Ships
International regulations for preventing collisions at sea.
Navigation at operational Level
Steering Training
Cargo handling and stowage at operational level
Cargo handling and stowage tasks for Tankers if applicable
Controlling the operation of the ship and care for persons on board at operational Level</td></tr>
<tr><td>Prerequisites</td><td colspan="2">To have successfully completed all modules in semester 1 and 2</td><td>Required</td><td colspan="3">All year 1 courses</td></tr>
<tr><td>Assessment</td><td colspan="6">ISF on board training record book completion by supervisor on board and by the student evidencing progress made and tasks achieved</td></tr>
<tr><td>Language</td><td colspan="6">English</td></tr>
</table>

Year 3

Semester E

<table>
<tr><td>Course Title</td><td colspan="5">GMDSS</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-311</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">3rd Year, Fall Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">BSM – MTC (Mr. Tafanides Panayiotis as Supervisor)</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">8</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>3</td><td>---</td><td>3</td><td>---</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• Implement the importance of following the proper communications practices
• Provide a theoretical and practical background for the effective use of GMDSS
• Display in detail the emergency procedures
• Discuss all the consequences of a false alarm
• Present the actions that must be made in such a case
• Introduce the basic maintenance principles</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:
• Follow the required procedures in all stages of GMDSS communications
• Operate the system efficiently in all emergency condition
• Execute successfully all the safety and distress procedures even under stress
• Comprehend the consequences of a false alarm
• Follow all the necessary steps to avoid a false alarm
• Perform all the crucial actions in case of a false alarm
• Monitor the working condition of the GMDSS installation carrying out the all the required checking and restoring minor problems</td></tr>
<tr><td>Prerequisites</td><td colspan="2">MANS-113</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">• Morse alphabet and numbers
• Methods of signaling (Flag & signals)
• General transmission instructions, Typical message parts
• One and two letters signs, Combinations of letter and number
• Transmission and reception of the distress signal using light
• Means of local signal transmission
• Mobile nautical service communication types
• SOLAS convention and GMDSS
• Radio-communication rules by the ITU</td></tr>
</table>

<table>
<tr><td></td><td>

- Description of typical GMDSS station
- Antennas
- GMDSS satellite communications
- Safety – security and distress messages transmission, reception, relay
- False alarms – precautions - consequences
- Actions to be taken in case of false alarm
- Conventional means - maintenance
- Non GMDSS systems
- GMDSS check lists and log book
- Equipment maintenance
- System failures

</td></tr>
<tr><td>Teaching Methodology</td><td>GMDSS simulation and theory at BSM Maritime Training Centre</td></tr>
<tr><td>Bibliography</td><td>

Required Textbooks/Reading:

Authors	**Title**	**Publisher**	**Year**	**ISBN**
NP 285	Global Maritime Distress and Safety System	UK Hydrographic Office	2002	
IMO	International Code of Signals	IMO	2005	978-92-801-41986

Recommended Textbooks/Reading:

Authors	**Title**	**Publisher**	**Year**	**ISBN**
IMO	GMDSS manual	IMO	2013	978-92-801-15758
IMO	Performance standards for ship borne radio communications and navigational equipment	IMO	2011	9789280115239

</td></tr>
<tr><td>Assessment</td><td>Examination on GMDSS simulator and provision of Certificate by approved and certified training center – BSM Maritime Training Centre</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

<table>
<tr><td>Course Title</td><td colspan="5">Marine Legal Issues</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-331</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">3rd Year, Fall Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Mrs. Athanasiou Maria</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">4</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>6</td><td>---</td><td>---</td><td>---</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• present the basic law principles in general
• define legally the term “ship”
• register the ship’s maritime documents
• discuss marine labor provisions and collective labor agreements
• introduce the basics of the Statute merchant marine disciplinary law
• address the most relevant provisions of code of Private Maritime Law</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:
• comprehend the basic law principles in general
• have a accurate understanding of the term “ship”
• record the ship’s maritime documents
• perceive the basic marine labor provisions and collective labor agreements
• acknowledge the most important parts of the merchant marine disciplinary law
• be acquainted with the most relevant provisions of code of Private Maritime Law</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">• Concepts and characteristics of law
• Division of law
• Ship’s documents
• Labor regulations
• Collective labor agreements
• Seaman’s enlistment contract
• Seaman’s obligations and rights arising from the enlistment contract
• Marine labor disputes
• Merchant marine disciplinary law
• Marine labor accident and regulations to prevent it
• Seaman’s social protections
• Issues of international public marine law</td></tr>
</table>

<table>
<tr><td></td><td>Flag State’s Private Marine Law and international practice</td></tr>
<tr><td>Teaching Methodology</td><td>Lectures, in-class assignments, sound and video equipment, computer, projector</td></tr>
<tr><td>Bibliography</td><td>Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Mandaraka, A.</td><td>Modern maritime law volume II</td><td>Routledge</td><td>2013</td><td>978–0–415–83906–8</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Cartner, J., Fiske, R., Leiter, T.</td><td>International law of the shipmaster</td><td>Routledge</td><td>2009</td><td>978-1-84311-807-7</td></tr>
<tr><td>Baughen, S.</td><td>Shipping law</td><td>Routledge</td><td>2015</td><td>978-0-415-71219-4</td></tr>
</table></td></tr>
<tr><td>Assessment</td><td>Homework, in-class assignments, projects, exams, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

<table>
<tr><td>Course Title</td><td colspan="5">Advanced Safety Training</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-335</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">1st Year, Fall Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">BSM – MTC (Mr. Panagiotis Tafanides as Supervisor)</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">5</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>5</td><td>---</td><td>---</td><td>----</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• Apply immediate first aid to an injured casualty and a person suffering illness on board
• Understand and apply firefighting procedures at sea and in port with emphasis on organization, tactics and effective command, including liaison with shore-based fire fighters
• Use proper actions involved in taking command of, launching, and handling of a survival craft during an emergency evacuation/abandonment</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:

• Apply immediate first aid to an injured casualty and to a person suffering illness on board
• Understand the principals involved in controlling firefighting operations on board a vessel
• Control the firefighting operations on board ship
• Organize and train fire parties
• Inspect and service fire detection and extinguishing systems and equipment
• Investigate and compile reports on incidents involving fire, and
• Know how to carry out firefighting operations on board tankers (oil, chemical, liquefied gas</td></tr>
<tr><td>Prerequisites</td><td colspan="2">MANS-106</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">Medical First Aid
1. Basic life support
2. Managing incidents
3. Casualty monitoring
4. Management of chest pain
5. Management of shock, bleeding, burns and injuries
6. Management of musculo-skeletal injuries, including sprains, dislocation and fractures</td></tr>
</table>

	7. Management of the effects of the environment, such as hypothermia and heatstroke 8. Management of medical conditions **Advance Fire Fighting** 1. Fire prevention 2. Fire on board 3. Causes of fire 4. On board safety 5. Theory of combustion 6. Extinguishing Methods 7. Classification of Fuels 8. Initial Response 9. Team Organization and Equipment 10. Techniques 11. Liaison with Shore Based Fire-fighters 12. Dangerous Goods 13. Management & Control of Injured Persons 14. Fire Detection and Alarm 15. Containment 16. Ventilation of Shipboard Fires 17. Fixed Fire Extinguishing Systems 18. Fire Investigation and Reporting **Survival Craft and Rescue Boat** 1. Safety and Survival 2. Emergency situations 3. Evacuation 4. Survival craft and rescue boats 5. Personal life-saving appliances 6. Survival at sea 7. Emergency radio equipment 8. Handling survival craft and rescue boats in rough weather 9. Actions to take when aboard a survival craft 10. Methods of helicopter rescue 11. Hypothermia 12. Radio equipment 13. First aid 14. Drills in launching and recovering boats 15. Drills in launching life rafts 16. Drills in launching and recovering rescue boats 17. Practical exercises
Teaching Methodology	Lectures, sound and video equipment, computer, projector, practical training

<table>
<tr><td>Bibliography</td><td>

Required Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
IMO	Model Course 2.03 Advanced Fire Fighting	IMO	2000	9789280150872
IMO	Model Course 1.14 Medical First Aid	IMO	2000	978-9280161182
IMO	Model Course 1.23 Proficiency in Survival Craft and Rescue Boats	IMO	2000	978-9280161151

Recommended Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
IMO	Fire Safety Systems (FSS) Code, 2015 Edition	IMO	2015	978928016014
IMO	Life-Saving Appliances inc LSA Code, 2017 Edition	IMO	2017	9789280131505

</td></tr>
<tr><td>Assessment</td><td>In-class assignments, practical assessment, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

<table>
<tr><td>Course Title</td><td colspan="5">Human Resource Management</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-332</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">3rd Year, Fall Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Fani Papamichael</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">2</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>2</td><td>----</td><td>----</td><td>----</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• Exhibit the basics on human relations
• present the principles of communication in the vessel’s working environment
• introduce the human recourse management functions
• elaborate on the contribution of the human factor in the effective operation of organizations
• describe the development of methods and tools that contribute to the satisfaction of the ship’s personnel
• explain the ability to adjust the theoretical tools according to the demands of the marine environment
• analyze the importance of training in the above subjects</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:
• comprehend the basic issues of the human relations
• apply the major principles of communication in the ship’s society
• exercise the human resource management functions in ship’s real life
• realize the importance of the human factor in the effective operation of the ship
• employ the most suitable methods and tools in order to achieve the crew’s satisfaction
• adjust accordingly the theoretical tools in order to meet the ship’s distinctive demands
• organize the most suitable training activities to assist the building of team spirit</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">• Introduction to Management Principles
• Five Management Principles (Planning, Organizing, Staffing, Leading and Controlling)
• General human relations issues
• Human relations in the ship’s society
• Communication aboard</td></tr>
</table>

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<tr><td></td><td>

Social and working environment
Concept and content of the human resource management
Organization and manning of the HRM department
Manning the vessel
Motivation – evaluation
Organizational culture
HR management on the international environment and in Greek maritime industry

The importance of training
</td></tr>
<tr><td>Teaching Methodology</td><td>Lectures, in-class assignments, sound and video equipment, computer, projector</td></tr>
<tr><td>Bibliography</td><td>
Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Banfield, P., Kay, R.</td><td>Introduction to human resource management</td><td>Oxford university press</td><td>2008</td><td></td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Knights, D., Willmott, H.</td><td>Introducing organizations and management</td><td>Thompson Learning</td><td>2008</td><td></td></tr>
<tr><td>Reedman & Wilkinson</td><td>Contemporary human resource management – text and cases</td><td>Prentice hall</td><td>2006</td><td></td></tr>
</table>
</td></tr>
<tr><td>Assessment</td><td>Homework, in-class assignments, projects, exams, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

<table>
<tr><td>Course Title</td><td colspan="5">Leadership and Administration</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-333</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">3rd Year, Fall Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Fani Papamichael</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">2</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>2</td><td>----</td><td>----</td><td>----</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• present the basic theories of Leadership and Administration
• exhibit the adjustment of the above theories to the ship environment
• explain the importance of the leader’s decisions in crisis periods
• introduce work load and duties management techniques
• discuss the relation between the above theories and real life experience</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:
• comprehend the basic theories of Leadership and Administration
• modify the above theories to the ship environment
• efficiently operate under pressure during an unexpected crisis
• effectively implement duties and work load management on board
• take advantage of the accumulated managing and training experience on board</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">• Leadership – Administration: introduction - definitions
• Leadership and teamwork
• Practical knowledge of managing and training on board
• Duties and work load management
• Effective resource management
• Efficient communication practices among crew members
• Leadership and administration in the ship’s environment
• Leadership’s and administration’s legal frame
• Practice, self-assessment and dialogue</td></tr>
<tr><td>Teaching Methodology</td><td colspan="5">Lectures, in-class assignments, sound and video equipment, computer, projector</td></tr>
<tr><td>Bibliography</td><td colspan="5">Required Textbooks/Reading:</td></tr>
</table>

<table>
<tr><td></td><td>
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Theotokas, I., Harlaftis, T.</td><td>Leadership in world shipping</td><td>Macmillan</td><td>2009</td><td>9780230576421</td></tr>
</table>

Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Bryman, A.</td><td>Leadership and organizations</td><td>Routledge</td><td>1986</td><td>978-0-415-65793-8</td></tr>
<tr><td>Northouse, P.</td><td>Leadership theory and practice</td><td>Sage publications</td><td>2012</td><td>1452203407</td></tr>
</table>
</td></tr>
<tr><td>Assessment</td><td>Homework, in-class assignments, projects, exams, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
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<table>
<tr><td>Course Title</td><td colspan="5">Crisis Management – Risk Assessment</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-334</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">3rd Year, Fall Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Captain Hatzis Ioannis</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">3</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>2</td><td>---</td><td>---</td><td>----</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• present the basic techniques to manage critical situations
• examine the human role in the progression of a crisis
• introduce crisis management procedures and the applicable codes
• explain the need to consider risk assessment procedures on board
• display the risk assessment procedures and relevant practices on board</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:
• apply the basic crisis management techniques on board
• comprehend the importance of the human factor in the progression of a crisis
• employ the crisis management procedures and the applicable codes in real life situations on board
• realize the reasons why risk assessment procedures should be implemented as standard working practices on board
• utilize the approved risk assessment procedures according to the company accident prevention policies.</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">• Organization of emergency procedures on board
• Maximization of the contribution of all emergency means
• Organization of realistic drills
• Reaction control in emergency situations
• Evaluation and effective response to emergency situations
• Leadership abilities
• Leading a response team and guiding a group of passengers during an emergency
• Evaluation of possible panic problems and response techniques
• Establishment and maintenance of effective communications</td></tr>
</table>

<table>
<tr><td></td><td>

Crowd characteristics
Vessel’s structural damage control
Definition of formal safety assessment context
Identification of hazards –ranking of accident scenarios
Risk analysis – ranking of factors
Risk control options
Cost – benefit assessment
Incident report – near miss – operational failure
Objectivity of the assessment
Human reliability analysis
Forms used on board

</td></tr>
<tr><td>Teaching Methodology</td><td>Lectures, in-class assignments, sound and video equipment, computer, projector</td></tr>
<tr><td>Bibliography</td><td>
Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Regester, M., Larkin, J.</td><td>Risk issues and crisis management</td><td>London and Sterling, VA</td><td>2005</td><td>0–7494–4382–0</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Booth, S., A.</td><td>Crisis management strategy</td><td>Routledge</td><td>2015</td><td>9781317292715</td></tr>
<tr><td>Det Norske Veritas</td><td>Marine risk assessment</td><td>Det Norske Veritas</td><td>2002</td><td>0-7176-2231-2</td></tr>
</table>
</td></tr>
<tr><td>Assessment</td><td>Homework, in-class assignments, projects, exams, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
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<table>
<tr><td>Course Title</td><td colspan="5">Safety and Risk Management</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-312</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">3rd Year, Fall Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Captain. Dr. Andreas Frangos</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">3</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>2</td><td>---</td><td>---</td><td>---</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• Ensure a thorough knowledge and understanding of the rules, regulations and recommended practices for safety management in maritime transport
• Understand the basic concepts, principles and terms of risk assessment and safety management;
• Ensure understanding of the IMO’s Formal Safety Assessment process.
• Provide knowledge of the basic issues relating to the improvement of safety in the maritime industry.</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:
• Explain the history of safety development in maritime transport in reactive and proactive safety improvement approaches.
• Organize and apply basic principles, concepts and terms of risk assessment and safety management within the maritime transport context.
• Classify and select theories and methods for accident analysis and risk analysis as approaches to safety improvement in the maritime industry.
• Compose and perform accident analysis from accident documentation to analytical explanation of possible causation processes, and document into an accident report.
• Evaluate given accident reports as basis for risk comprehension.
• Classify traffic based risk assessment models, and perform traffic based risk assessment analysis of a set of fairway situations.
• Classify and perform basic estimation of material damage consequences after contact accidents.
• Organize and perform a risk analysis process according to IMO’s Formal Safety Assessment process, including choice and use of appropriate theories and methods for hazard identification, risk assessment, risk control measure, and cost benefit assessment.</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">The risk concept. Risk picture. What is an accident? Accident statistics. Preventive and ameliorating measures.</td></tr>
</table>

<table>
<tr><td></td><td>Risk objectives, data and risk acceptance criteria.
Maritime traffic models; probability of grounding and collision. Consequence estimation. Risk analysis methods: Hazard analysis, FTA, ETA, FMECA, HazOp.
Human reliability; error mechanisms and modelling approaches.
Risk control measures and options. Cost-benefit analysis of risk control measures.
Formal safety assessment (FSA) and risk based ship design.
Accident analysis; analysis and modelling of ship casualties. Analysis and modelling of ship accidents. Catastrophe behaviour, evacuation and rescue.
Regulation and official control of maritime safety. National and international control authorities. The ISM Code – the International Safety Management Code.

Auditing, Marine Insurance; risk analysis and risk management.</td></tr>
<tr><td>Teaching Methodology</td><td>Lectures, Directed and Background Reading, Case Study Analysis and Discussion, Academic Paper Discussion In-class Exercises, Student-led Presentations</td></tr>
<tr><td>Bibliography</td><td>Required Textbooks
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Rausand, M</td><td>Risk Assessment - Theory, Methods and Applications</td><td>John Wiley & Sons, Inc</td><td>2011</td><td></td></tr>
</table>
Recommended Textbooks/Reading
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Chengi Kuo</td><td>Managing Ship Safety</td><td>LLP</td><td>1998</td><td></td></tr>
<tr><td>Kristiansen S.</td><td>Maritime Transportation: Safety Management and Risk Analysis</td><td>Routledge</td><td>2004</td><td></td></tr>
</table></td></tr>
<tr><td>Assessment</td><td>Coursework, Case studies & Projects, Mid-Term Exam, Final Exam</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

<table>
<tr><td>Course Title</td><td colspan="5">Information Technology</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-391</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">2nd Year, Fall Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Mr. Adamides Constantinos</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">3</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>1</td><td>3</td><td>---</td><td>---</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• demonstrate the structure of computers and of operating systems
• display the office suites
• explain the utilization of internet
• introduce the major applications used on board ships
• exhibit the characteristics of hardware and software
• familiarize the students with the transmission and reception of email and the various types of documents</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:
• comprehend the structure of computers and the role of the operating system
• compose documents in word, excel, power point, access and convert a document to PDF form
• carry out ship’s business using the most common relevant applications
• identify the internet operational parameters
• make the best use of the hardware and software available on board, evaluating efficiently its characteristics
• send, receive and forward emails with attached documents</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">• Computer’s general structure
• Distinction between hardware and software
• Windows operation system
• File systems
• Data storage
• Office suite (word, excel, access, power point)
• PDF conversions
• Software applications commonly used on board
• Internet basics
• Emails, attachments</td></tr>
</table>

<table>
<tr><td></td><td>

- Computer networks

</td></tr>
<tr><td>Teaching Methodology</td><td>Lectures, in-class assignments, sound and video equipment, computer lab, projector</td></tr>
<tr><td>Bibliography</td><td>

Required Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
Satish, J.	Basic Computer Course	BPB	2011	8183334598

Recommended Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
Weverka, P.	Office 2016 for dummies	For dummies	2016	1119083125
Sharma, S.	Computer Networks	S. K. Kataria & Sons	2016	978-93-80027-00-5

</td></tr>
<tr><td>Assessment</td><td>Homework, in-class assignments, projects, exams, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

Year 3

Semester F

<table>
<tr><td>Course Title</td><td colspan="5">Ship Management</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-320</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">3rd Year, Spring Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Captain Dr. Frangos Andreas</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">3</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>2</td><td>---</td><td>---</td><td>---</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• Provide information on how the modern era of ship management has developed over the past forty years, where the industry stands today and where this sector of international shipping is heading.
• Analyse the world fleet from the standpoint of the resources needed to manage the fleet today and into the future in the face of worsening shortages of manpower and increasing regulation.
• Provide a practitioner's view and offers an in-depth understanding of ship management.
• Provide an in-depth understanding of all aspects of ship management at the strategic and operational level from the standpoint of the third party provider of ship management services.</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:
• Understand the tasks related to management of ships in the 21st century and the inter-relationship of various departments in a ship management company.
• Appreciate the competitiveness of the ship management industry and the importance of offering quality services to the clients.
• Show in depth understanding of the responsibility and liability of a ship manager towards its client and the flag.
• Comprehend the importance of a successful manning policy and training in the shipping industry.
• Apply basic budgetary control applicable in the context of a ship management company.
• Understand the concept of a financial project appraisal in relation to operations, safety, environmental and political factors.</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">• Ship Types. Bulk Carriers, Container Ships, Multipurpose Ships, Oil and Chemical Tankers. Technical and Operational aspects, including the application</td></tr>
</table>

<table>
<tr><td></td><td>of international regulations (including IMO, EU, regional and national). Safety aspects.
• The development of ship management companies in Cyprus & abroad in recent years.
• Detailed analysis of the various functions of ship management, the inter-relationship of the departments in a ship management company and the most important competences of a ship management company.
• The importance of recruitment and retention as the two basic building blocks for a successful manning policy and various aspects of training, mandatory as well as discretionary.
• Challenges and prospects that the shipping industry face in terms of human resources (manning) in Europe and in the world.
• The basic budgeting methods to calculate net profit from the operation of the vessel.
• The importance of safety, security and environmental restrictions in the management of a vessel as part of total quality management overview.</td></tr>
<tr><td>Teaching Methodology</td><td>Lectures, Directed and Background Reading, Case Study Analysis and Discussion, Academic Paper Discussion, In-class Exercises, Student-led Presentations</td></tr>
<tr><td>Bibliography</td><td>Required Textbooks/Reading
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Willingdale M.</td><td>Ship Management</td><td>LLP</td><td>2005</td><td>978-1859788356</td></tr>
</table>
Recommended Textbooks/Reading
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Branch A.</td><td>Elements of Shipping</td><td>Chapman & Hall</td><td>2007</td><td></td></tr>
<tr><td>Panayides P.</td><td>Professional Ship Management</td><td>Institute of Chartered Shipbrokers</td><td>2001</td><td></td></tr>
<tr><td>Spruyt J.</td><td>Ship Management</td><td>LLP</td><td>1994</td><td>1-85044-532</td></tr>
</table></td></tr>
<tr><td>Assessment</td><td>Lectures, Directed and Background Reading, Case Study Analysis and Discussion, Academic Paper Discussion, In-class Exercises, Student-led Presentations</td></tr>
<tr><td>Language</td><td>English</td></tr>
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<table>
<tr><td>Course Title</td><td colspan="5">Ship Stability and Strength</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-321</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">3rd Year, Spring Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Dr. Elias Yfantis</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">7</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>4</td><td>2</td><td>---</td><td>----</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• introduce the theories and factors that influence the ship’s trim and stability
• display the measures required to maintain the trim and stability
• exhibit the stability tables and diagrams used on board
• demonstrate the equipment and software to calculate the ship’s trim and stability
• explain the actions to be taken in the event of partial loss of ship’s integrity
• analyze the ship’s structural strength at sea and in port</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:
• comprehend the theories and factors that influence the ship’s trim and stability
• take all the necessary measures to maintain ship’s trim and stability
• employ the stability tables and diagrams existing on board to perform trim and stability calculations
• utilize the equipment and software available on board to obtain results on trim and stability questions
• implement the proper corrective measures in the event of partial loss of the ship’s integrity
• calculate the vessel’s stresses</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">• Determination of various centers (gravity, buoyancy, etc.)
• Displacement, density, specific gravity
• Trim and stability tables and diagrams
• Transverse stability
• Free surface inertia moments effect
• Large angles stability
• Dynamic stability
• Longitudinal stability</td></tr>
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<tr><td></td><td>

Various stability issues
Vessel’s stresses
Bending - torsional moments
Shearing forces
Use of relevant software
Damage stability
Relevant check lists and forms

</td></tr>
<tr><td>Teaching Methodology</td><td>Lectures, in-class assignments, sound and video equipment, computer, projector, relevant software, cargo handling simulator</td></tr>
<tr><td>Bibliography</td><td>
Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Barrass, B., Derrett, D.R.</td><td>Ship stability for masters and mates</td><td>Elsevier</td><td>2006</td><td>987-0-7506-6784-5</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>IMO</td><td>International code on intact stability</td><td>IMO</td><td>2009</td><td>978-92-801-15062</td></tr>
<tr><td>Clark, I. C.</td><td>The management of merchant ship stability, trim and strength</td><td>The nautical institute</td><td>2002</td><td>1-87-0077-59-8</td></tr>
</table>
</td></tr>
<tr><td>Assessment</td><td>Homework, in-class assignments, projects, exams, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
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<table>
<tr><td>Course Title</td><td colspan="5">Cargo Transport</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-322</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">3rd Year, Spring Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Dr Andreas Frangos</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">7</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>4</td><td>2</td><td>----</td><td>----</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• introduce the safe loading, securing, transporting and discharging of all the major types of cargo
• examine the basic issues of RO-RO Pax cargo operation
• offer detailed information on the handling of dangerous cargo
• elaborate on the effect of cargo in the ship’s seaworthiness and stability
• discuss about the effect of cargo in vessel’s and crew’s safety
• describe the securing and the maintenance of communications procedures throughout cargo operations</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:
• safely load, secure, transport and discharge all the major types of cargo
• control all the major problems arising during a RO-RO Pax cargo operation
• deal with all types of dangerous cargo that might be transported with a vessel
• comprehend in detail the effect of cargo in the ship’s seaworthiness and stability
• realize the effect of the cargo to the vessel’s and crew’s safety
• properly secure and maintain the communications throughout the cargo operations</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">• Safe cargo transport
• Dry cargoes and cargo declaration
• Liquid cagoes & MSDS
• Cargo spaces preparation, separation, inspection
• Ventilation and control of transpiration
• Organization of cargo stowing
• Defining vessel sizes
• Load lines and draft
• Dangerous cargo
• IMDG code and IMSB</td></tr>
</table>

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<tr><td></td><td>

Bulk cargo other than grain
RO –RO Pax vessels
Containerized cargo
Crude oil and product transport
Tanker ships
Transport of liquid cargoes
Refrigerated cargo transport
Timber transport
Coal, Bauxite and metal ore transport
Steel and steel product transport
Grain transport
Cargo in ballast tanks
Unitized cargo
Cargo securing. Calculations. Vehicle securing
Crossing seasonal zones. Cargo and draft calculations
Calculations related to the hold tanks cargo

</td></tr>
<tr><td>Teaching Methodology</td><td>Lectures, in-class assignments, sound and video equipment, computer, projector, relevant software, cargo handling simulator</td></tr>
<tr><td>Bibliography</td><td>
Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Cpt Thomas, R.E., rewritten by Rankin, K.S.</td><td>The properties and stowage of cargoes</td><td>Glasgow, Brown, Son & Ferguson</td><td>2008</td><td>978-0-85714-798-8</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Taylor, L.G.</td><td>Cargowork</td><td>Glasgow, Brown, Son & Ferguson</td><td>1992</td><td>978-0-85174-605-5</td></tr>
<tr><td>IMO</td><td>Code for safe practice for cargo stowage and securing</td><td>IMO</td><td>2003</td><td>978-92-801-51459</td></tr>
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</td></tr>
<tr><td>Assessment</td><td>Homework, in-class assignments, projects, exams, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
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<table>
<tr><td>Course Title</td><td colspan="5">MARPOL – Ballast Water Management</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-335</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">3rd Year, Spring Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Captain. Dr. Frangos Andreas</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">3</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>2</td><td>----</td><td>---</td><td>----</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• present the basic provisions of MARPOL 73/78
• demonstrate the proper filling in of the Oil Record Book, the Garbage book and the Cargo book
• display the international certificates required by MARPOL
• introduce the basic provisions of the major conventions, relevant to the protection of the marine environment
• explain the reasons that force the implementation of the Ballast Water Management
• discuss about the pollution agents
• exhibit the most effective means of prevention
• present the best practices for managing the ballast water
• elaborate on the Green maritime industry</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:
• comprehend the basic provisions of MARPOL 73/78
• fill in as required the Oil Record book, the Garbage book and the Cargo book
• identify all the international certificates required by MARPOL
• implement basic provisions of the major conventions, relevant to the protection of the marine environment
• recognize the necessity to implement Ballast Water Management procedures
• realize the effect of the pollution agents carried by the ballast water
• analyze the most effective means of prevention
• value the different ways of managing the ballast water
• perceive the basic characteristics of the Green maritime industry</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">• MARPOL convention and the 1978 protocol
• Annex I. Prevention of marine pollution by oil
• Annex II. Prevention of marine pollution by hazardous liquid substances</td></tr>
</table>

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Annex III. Prevention of marine pollution be liquid substances carried containerized by sea
Annex IV. Prevention of marine pollution by ship sewage
Annex V. Prevention of marine pollution by ship garbage
Annex VI. Prevention of air pollution by ships
Other international conventions for the protection of the marine environment
Compensations
Ballast Water Management
BWM terms
BWM explanations
BWM check lists
Different ways to perform BWM
Environmental awareness
Environmental effect of pollution
Economic impact of pollution
Personal responsibility to protect the marine environment

</td></tr>
<tr><td>Teaching Methodology</td><td>Lectures, in-class assignments, sound and video equipment, computer, projector</td></tr>
<tr><td>Bibliography</td><td>
Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>IMO</td><td>BWM convention and the guidelines for its implementation</td><td>IMO</td><td>2009</td><td>97892-801-15031</td></tr>
<tr><td>IMO</td><td>MARPOL, how to do it</td><td>IMO</td><td>2002</td><td>978-92-801-41528</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Khee-Jin Tan, A.</td><td>Vessel – source marine pollution</td><td>Cambridge university press</td><td>2005</td><td>0-521-85342-7</td></tr>
</table>
</td></tr>
<tr><td>Assessment</td><td>Homework, in-class assignments, projects, exams, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
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<table>
<tr><td>Course Title</td><td colspan="5">Emergencies and SAR</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-336</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">3rd Year, Spring Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Mr. Mavris Kyriacos</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">3</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>2</td><td>---</td><td>---</td><td>---</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• display the contents of IAMSAR manual
• exhibit the basics on the vessels reporting systems
• demonstrate the various ship’s procedures to be followed in case of emergency
• present the emergency drills and the frequency with which they must be executed</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:
• implement the provisions of the International Aeronautical and Marine Search and Rescue Manual
• comprehend the vessel reporting systems common procedures
• perform the appropriate procedures in case of emergency
• realize the importance of emergency drills</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">• Vessel reporting systems
• Importance of participation in VRS
• IAMSAR manual
• Search And Rescue procedures under adverse conditions
• Best SAR practices on board
• Emergency procedures (grounding, leaking, collision, fire, ways of evacuation, etc)
• Examples of actions or omissions leading to emergency situations
• Emergency drills on board</td></tr>
<tr><td>Teaching Methodology</td><td colspan="5">Lectures, in-class assignments, sound and video equipment, computer, projector</td></tr>
</table>

<table>
<tr><td>Bibliography</td><td>
Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Macelrevey, D.H.</td><td>Shiphandling for the Mariner</td><td>Cornell Maritime Press</td><td>2004</td><td>978-0870335587</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>IMO</td><td>IAMSAR manual</td><td>IMO</td><td>2013</td><td>978-92-801-14881</td></tr>
<tr><td>IMO</td><td>Ships’ routing</td><td>IMO</td><td>2013</td><td>978-92-801-15543</td></tr>
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<tr><td>Assessment</td><td>Homework, in-class assignments, projects, exams, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
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<table>
<tr><td>Course Title</td><td colspan="5">Ship’s Inspections</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-337</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">3rd Year, Spring Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Mr. Tafanides Panayiotis</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">3</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>2</td><td>---</td><td>---</td><td>---</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• introduce the appropriate inspection procedures
• explain the damage restoration process
• contribute in the location of deficiencies in parts of the vessel that are crucial to its integrity
• introduce vital vetting procedures with the involvement of navigation, communications and safety officers
• describe the various Port State Control procedures according to MOU</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:
• apply the proper inspection procedures to all parts of the vessel
• follow the approved damage repair procedures
• locate the existing deficiencies in all the critical parts of the vessel
• determine the parts of the vessel that are directly related to the safety
• comply with the fundamental vetting requirements
• recognize the various Port State Control requirements</td></tr>
<tr><td>Prerequisites</td><td colspan="2">MANS-132</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">• Location of areas sensitive to damages
• Establishment of a rotation system that ensures the inspection of all the vital parts of the vessel
• Specific structural parts of vital importance to the safety of the vessel
• Inspection procedures
• Possible damage repairs on board
• Advanced inspection program
• Relevant IMO requirements
• Vetting inspections
• Items to be checked by the navigation, communication and safety officers
• IMO “Procedures for Port State Control”
• Dangerous cargo</td></tr>
</table>

<table>
<tr><td>Teaching Methodology</td><td>Lectures, in-class assignments, sound and video equipment, computer, projector</td></tr>
<tr><td>Bibliography</td><td>Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Caridis, P.</td><td>Inspection repair and maintenance of ship structures</td><td>Witherby</td><td>2009</td><td>9781905331376</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>IMO</td><td>Guidelines on the enhanced program of inspections during survey of bulk carriers and oil tankers</td><td>IMO</td><td>2008</td><td>978-92801-14966</td></tr>
<tr><td>OCIMF</td><td>Ship inspection report program</td><td>OCIMF</td><td>2015</td><td></td></tr>
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<tr><td>Assessment</td><td>Homework, in-class assignments, projects, exams, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
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<table>
<tr><td>Course Title</td><td colspan="5">Ship Steering Control Systems</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-323</td></tr>
<tr><td>Course Type</td><td colspan="5">Elective</td></tr>
<tr><td>Level</td><td colspan="5"></td></tr>
<tr><td>Year / Semester</td><td colspan="5">3rd Year, Fall Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Captain. Dr. Andreas Frangos</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">4</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>2</td><td>---</td><td>---</td><td>----</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• Understand the principle and operation of the ship magnetic compasses and the ship gyrocompass
• Ensure knowledge of the proper use of such compasses and understand the main advantages and disadvantages.
• Understand the principle and operation of the different types of automatic steering control systems on a ship.
• Be able to use safely such systems with all its components
• Ensure a thorough knowledge of the IMO regulations that govern such systems</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:

• Thoroughly understand the principle of operation and characteristics of ship magnetic compasses with all advantages and disadvantages associated with them.
• Thoroughly understand the principle of operation and characteristics of ship gyrocompasses with all advantages and disadvantages associated with them.
• Be able to make necessary corrections and adjustments as required.
• Understand the different types of steering control systems available on a ship
• Thoroughly understand the principle of operation such ship control systems with all its parts and components
• Be able to use competently both manual and automatic steering control systems.
• Show an in depth understanding of the relevant IMO Regulations governing such systems.</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">Magnetic compasses
• Parts, characteristics, principle of operation
• Errors and adjustments
• The use with the ship steering control system.</td></tr>
</table>

	• Advantages and disadvantages • Potential and Limitations **Gyrocompasses** • Types of Gyrocompasses • Installation, Parts, characteristics, principle of operation • Errors and adjustments • The Gyro Recorder • The use with the ship steering control system. • Advantages and disadvantages • Potential and limitations **Steering Control Systems** **Characteristics** • Types and characteristics of steering control systems • Manual and automatic systems • Installation and main part description • Steering engine control linkage • Rudder Plate and Rudder angle transmitter • Feedback control unit **Operation** • Follow-up (FU) and Non-Follow-Up–(NFU) • Autopilot system • Control consideration and alarm signals – Permanent Helm – Rudder Control – Rudder Counter – Rudder Alarm Limit – Rudder Angle Adjustment – Weather Adjustment or Steering Control. – Wheel Dead Band – Steering Gear Pumps – Off Course Alarm – Manual Mode – Traffic Density – Speed – Potentials and important limitations **IMO Regulations** – Annex 18 - Steering Gear, Heading and Track Control Systems
Teaching Methodology	Lectures, in-class assignments, sound and video equipment, computer, projector, field training

<table>
<tr><td>Bibliography</td><td>
Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Stefani, Alex</td><td>An Introduction to Ship Automation and Control Systems</td><td>Witherby Seamanship International</td><td>2022</td><td>9781914992384</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>W. Burger</td><td>Marine Gyro-Compasses and Automatic Pilots: A Handbook for Merchant Navy Officers</td><td>Pergamon</td><td>2014</td><td>978-1483122823</td></tr>
</table>
</td></tr>
<tr><td>Assessment</td><td>Homework, in-class assignments, projects, midterm, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

<table>
<tr><td>Course Title</td><td colspan="5">Research Methodology</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-324</td></tr>
<tr><td>Course Type</td><td colspan="5">Elective</td></tr>
<tr><td>Level</td><td colspan="5"></td></tr>
<tr><td>Year / Semester</td><td colspan="5">3rd Year, Spring Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5"></td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">4</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>2</td><td>---</td><td>---</td><td>----</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• To investigate current research methods
• To propose a topic of specialization
• To frame a research question and propose a research methodology
• To perform literature review in a selected field and summarize findings and conclusions
• To support the development of a thesis topic through exercises of self-reflection, critical awareness and analysis
• To present the results of a critical evaluation and analysis of a body of knowledge, or an original contribution to knowledge, in the subject area of the scheme of study
• To explain the understanding and interpretation of the research outcomes in relation to the research objectives.</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:
• To extract information from selected case studies and derive a research interest
• To suggest a system of inquiry/paradigm for a thesis topic
• To suggest a set of strategy/method and tactic for a thesis topic
• To suggest a research methodology for a thesis topic
• To set the standards of a thesis topic research quality
• To produce work of a presentable quality that can then educate and inform other students</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">1. Introduction: general course information, detailed course outline and course assessment guide, create a general course forum, provide general information regarding the course textbook

2. Research Interests, and Cross-cutting Methodological Issues</td></tr>
</table>

<table>
<tr><td></td><td>
3. Philosophical approach vs Conceptual approach
4. Research quality standards
5. Systems of Inquiry
6. Historical-interpretive method
7. Qualitative method
8. Correlational method
9. Experimental method
10. Simulation method
11. Logical argumentation method
12. Case Studies presentation
</td></tr>
<tr><td>Teaching Methodology</td><td>Lectures, in-class assignments, sound and video equipment, computer, projector</td></tr>
<tr><td>Bibliography</td><td>
Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>John W. Creswell</td><td>Research Design: Qualitative, Quantitative and Mixed Methods Approaches 4th Edition</td><td>SAGE Publications, Inc</td><td>2014</td><td>978-1452226101</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Sharan B. Merriam, Elizabeth J. Tisdell</td><td>Qualitative Research: A Guide to Design and Implementation 4th Edition</td><td>John Wiley & Sons</td><td>2015</td><td>978-1119003618</td></tr>
</table>
</td></tr>
<tr><td>Assessment</td><td>Formative assessment, assignments, individual research, presentations, feedback, discussions, final examination</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

Year 4

Semester G

<table>
<tr><td>Course Title</td><td colspan="6">Practical Training on Board</td></tr>
<tr><td>Course Code</td><td colspan="6">MANS-290C</td></tr>
<tr><td>Course Type</td><td colspan="6">Required</td></tr>
<tr><td>Level</td><td colspan="6">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="6">4th Year Fall Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="6">Captain. Dr. Frangos Andreas</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">30</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td><td>Seminar</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="6">The main objectives of the practical training are to :
Provide the students with real life practical training
Give students an insight into working life on board a ship
Undertake everyday duties on board a ship
Undertake Project work</td></tr>
<tr><td>Learning Outcomes</td><td colspan="6">After completion of the course students are expected to be familiar with :
Safety procedures and shipboard familiarisation
Particulars of Ships
International regulations for preventing collisions at sea.
Navigation at operational Level
Steering Training
Cargo handling and stowage at operational level
Cargo handling and stowage tasks for Tankers if applicable
Controlling the operation of the ship and care for persons on board at operational Level</td></tr>
<tr><td>Prerequisites</td><td colspan="2">To have successfully completed Practical Training on Board during 1st Year summer placement and 2nd Year 4th Semester placement</td><td>Required</td><td colspan="3">All 1st, 2nd and 3rd Year courses</td></tr>
<tr><td>Assessment</td><td colspan="6">ISF on board training record book completion by supervisor on board and by the student evidencing progress made and tasks achieved</td></tr>
<tr><td>Language</td><td colspan="6">English</td></tr>
</table>

Year 4

Semester H

<table>
<tr><td>Course Title</td><td colspan="5">ISPS - SSO</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-432</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">4th Year, Spring Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Captain Hatzis Ioannis</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">4</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>2</td><td>---</td><td>---</td><td>---</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• clarify the need for the ISPS code implementation
• review the relevant SOLAS parts
• introduce the basics on the ISPS code
• present the SSO provisions</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:
• realize the necessity for the implementation of the code
• recognize the context of the relevant SOLAS parts
• apply the basic provisions of the ISPS on board
• establish the appropriate methods for deck area surveillance. Do the same for the surrounding area when at port
• implement the SSO provisions on board
• execute the code provisions at port</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">• Synoptic report on the relevant SOLAS parts
• Why ISPS code was introduced
• Security terms and definitions
• Vessel security plan. Maintenance and implementation supervision
• Assessment of risk, threats, danger and security vulnerability
• Vessel regular inspections in order to reassure that the proper security measures are implemented
• Reassurance that the security equipment and the security systems are used controlled and tuned properly
• Encouragement for the security information updating vigilance
• Control methods of the boarding and disembarking of various persons on board</td></tr>
</table>

<table>
<tr><td>Teaching Methodology</td><td>Lectures, in-class assignments, sound and video equipment, computer, projector</td></tr>
<tr><td>Bibliography</td><td>Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>IMO</td><td>Guide to maritime security and the ISPS code</td><td>IMO</td><td>2012</td><td>978-72-801-15444</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>IMO</td><td>Actions to prevent acts of piracy and armed robbery</td><td>IMO</td><td>2011</td><td>9789280115277</td></tr>
<tr><td>Cristopher, K.</td><td>Port security management</td><td>CRC Press</td><td>2015</td><td>978-1-4665-9164-6</td></tr>
</table></td></tr>
<tr><td>Assessment</td><td>Homework, in-class assignments, projects, exams, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

<table>
<tr><td>Course Title</td><td colspan="5">ARPA & RADAR– Watch Keeping</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-431</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">4th Year, Spring Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Captain. Dr. Andreas Frangos (Supervisor)</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">6</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>1</td><td>---</td><td>2</td><td>---</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• introduce the Regulations for avoiding collisions at sea
• describe the COLREGs field of application
• display the use of RADAR / ARPA in collision avoidance
• demonstrate the target plotting procedure
• discuss about the use of RADAR / ARPA in accordance with the COLREGs provisions
• present the navigation procedures in Vessel Traffic Separation Schemes</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:

• recognize the lights, shapes, sounds and the related COLREGS procedures
• realize the rules’ field of application
• comprehend the role of RADAR / ARPA in collision avoidance
• execute in detail the target plotting procedure
• implement the appropriate use of RADAR /ARPA according to the COLREGs provisions
• apply the required procedures when navigating close or in a Vessel Traffic Separation Scheme</td></tr>
<tr><td>Prerequisites</td><td colspan="2">MANS-214</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">• Description of ARPA devices
• IMO standards
• Target acquisition (auto and manual)
• Warning alarms (operational and system’s)
• Trial maneuver
• Factors affecting the system’s accuracy
• Errors, limitation precautions
• ARPA initiation procedure
• ARPA overreliance dangers
• Watch keeping</td></tr>
</table>

<table>
<tr><td></td><td>

Definition, explanation, and application of the COLREGs rules
Detailed explanation and application of VTS procedures
Distress signals
Marine accident case studies
The failure to comply with the COLREGs rules as a cause for accidents

</td></tr>
<tr><td>Teaching Methodology</td><td>ARPA simulation and theory at BSM Maritime Training Centre</td></tr>
<tr><td>Bibliography</td><td>
Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Bole, A., Wall, A., Norris, A.</td><td>RADAR and ARPA manual</td><td>Elsevier</td><td>2014</td><td>978-0-08-097752-2</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Cahill, R.A.</td><td>Collisions and their causes</td><td>Nautical institute</td><td>2002</td><td>1-87077-60-1</td></tr>
<tr><td>IMO</td><td>Ships’ routing</td><td>IMO</td><td>2013</td><td>978-92-801-15543</td></tr>
</table>
</td></tr>
<tr><td>Assessment</td><td>Examination on ARPA simulator and provision of Certificate by approved and certified training center – BSM Maritime Training Centre</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

<table>
<tr><td>Course Title</td><td colspan="5">Simulation BTM – BRM – BMS</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-433</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">4th Year, Spring Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Captain. Dr. Andreas Frangos (supervisor)</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">6</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>1</td><td>---</td><td>2</td><td>----</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• Simulate real life conditions in order to familiarize the students with adverse bridge situations
• Introduce the basic Bridge Team Management (BTM) and Bridge Management System (BMS) principles
• Demonstrate the basic Bridge Recourse Management (BRM) principles
• Apply all the navigational issues presented so far in real life scenarios</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:
• Implement the basic BTM and BMS principles
• Apply the basic BRM principles
• Respond to unpredicted bridge situations according to the BTM – BRM – BMS principles</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">• Differences and similarities among the bridge team
• Cultural awareness
• Briefing – debriefing procedures
• Interaction between pilot and the bridge team, communication techniques
• Exchange of information between all persons involved
• Challenge of the person in conn. Response of the team members
• Confidence and authority
• Importance of workload and stress
• Allocation of duties
• Basic watch keeping principles as referred to in STCW 2010 reg VIII/2
• Bridge electronic equipment
• Electronic equipment information evaluation
• Radar and position fixing
• ECDIS and watch keeping
• Charts and publications information evaluation</td></tr>
</table>

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<tr><td></td><td>

Wind and current inputs
Engine controls on bridge
Complicated simulation scenarios in which all major factors are included (COLREGS, wind, current, narrows, VTSS, communications, engine failures, mechanical failures, etc.)
Assessment of the scenario results
Gathering and development of information necessary for the execution of the voyage

</td></tr>
<tr><td>Teaching Methodology</td><td>Bridge simulator and theory at BSM Maritime Training Centre</td></tr>
<tr><td>Bibliography</td><td>
Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Swift, Capt A.J</td><td>Bridge Team Management – A practical guide</td><td>The Nautical Institute</td><td>1993</td><td>1-870077-14-8</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>The Nautical Institute</td><td>Bridge Team Management</td><td>The Nautical Institute</td><td>2004</td><td>978-1-870077-66 8</td></tr>
<tr><td>Adams, M., R</td><td>Shipboard bridge resource management</td><td>Nor’easter Press</td><td>2006</td><td>978-0-9779200-0-6</td></tr>
</table>
</td></tr>
<tr><td>Assessment</td><td>Examination on Bridge simulator and provision of Certificate by approved and certified training center – BSM Maritime Training Centre</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

<table>
<tr><td>Course Title</td><td colspan="5">ECDIS</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-430</td></tr>
<tr><td>Course Type</td><td colspan="5">Required</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">4th Year, Spring Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Captain. Dr. Andreas Frangos (Supervisor)</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">6</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>1</td><td>---</td><td>1</td><td>---</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:

• present the operational principles of ECDIS
• describe the use of navigational functions
• display the evaluation of all relevant systems information
• discuss the proper respond procedures in case of malfunction
• define the reporting and identification procedures of possible data and interpretation errors
• elaborate on issues of overconfidence in the system</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:

• comprehend the basic operational principles of ECDIS
• fully recognize the use of all navigational functions
• carefully assess all the relevant systems information
• respond accordingly to any case of equipment malfunction
• take into consideration all possible data and interpretation errors following the relevant procedures
• consider the navigational information of all available sources and never rely solely to a single navigational aid</td></tr>
<tr><td>Prerequisites</td><td colspan="2">MANS-114</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">• General description of ECDIS system
• Watch keeping with ECDIS
• Planning and execution of the voyage
• Data input (Position, speed, heading, course, targets, radar, AIS etc.) from other electronic devices.
• Targets, charts and system
• Charts updating
• Effect of errors
• Dangers from malfunctions
• ECDIS standards and evaluation</td></tr>
</table>

<table>
<tr><td></td><td>• System confidence</td></tr>
<tr><td>Teaching Methodology</td><td>ECDIS simulator and theory at BSM Maritime Training Centre</td></tr>
<tr><td>Bibliography</td><td>
Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Weintrit, A.</td><td>The Electronic Chart Display and Information System</td><td>CRC Press</td><td>2009</td><td>978-0-415-48246-2</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Becker – Heins, R.</td><td>ECDIS basics</td><td>Geomares</td><td>2014</td><td>978-90-806205-9-9</td></tr>
<tr><td>Hecht, H., Berking, B., Jonas, M., Alexander, L.</td><td>The Electronic Chart</td><td>Geomares</td><td>2014</td><td></td></tr>
</table>
</td></tr>
<tr><td>Assessment</td><td>Examination on ECDIS simulator and provision of Certificate by approved and certified training center – BSM Maritime Training Centre</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

<table>
<tr><td>Course Title</td><td colspan="5">Shipbroking & Chartering Practices</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-435</td></tr>
<tr><td>Course Type</td><td colspan="5">Elective</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">4th Year, Spring Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Captain. Dr. Andreas Frangos</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">4</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>2</td><td>---</td><td>---</td><td>----</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• Understand the types of charter and the commercial, technical and financial obligations of owners and charterers
• Discuss dry and wet cargo charter party obligations and know who is responsible for what
• Know the relevance of Hague/Hague-Visby/Hamburg/Rotterdam Rules and the advantages and disadvantages of each
• Appreciate the role of port agents and their vital functions and obligations
• Understand the role of shipbrokers – for owners or charterers and the best methods of fixing ships and cargoes
• Analyze what can go wrong with wet or dry cargo chartering
• Learn practical voyage estimating, its importance and how it affects lay time calculations
• Mediation, litigation and arbitration</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:

• Explain key terms and analyze main concepts in chartering and shipbroking practice
• Compile chartering as well as sale-and-purchase documents
• Assess charter types and chartering decisions
• Discuss the rights and obligations of the various counterparties in chartering and sale-and-purchase transactions</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">1. Introduction to Shipbroking and Chartering
• Overview of the freight market and the sale-and-purchase market
• Roles of owners, managers, operators and agents
• Hague/Hague-Visby/Hamburg/Rotterdam Rules
• Shipbrokers and Chartering agents
• Shipbrokers work benefits
• Functions and types of shipbrokers</td></tr>
</table>

- Charterparties, their types and functions associated with chartering
- Time Charter, Bareboat Charter, Voyage Charter and Contract of Affreightment

2. Chartering activities
- Negotiations
- Voyage and time charters

3. Voyage and time chartering
- Differences between voyage and time charter activities
- Elements and clauses of voyage charterparties
- Elements and clauses of time charteparties

4. Voyage estimating
- Off-hire and laytime calculation
- Relevance of charterparties
- Time sheets and preparation
- Demurrage and dispatch; Time Charter Equivalent
- Calculation of voyage estimates – benefits
- Bunkers, ports and distances, load line zones
- Techniques and approaches used in voyage estimate calculations
- Applications of voyage estimates

5. Dry Cargo chartering

6. Tanker Chartering

7. Sale-and-purchase process and documents

8. Electronic documents in chartering and sale-and-purchase

Teaching Methodology

Lectures, in-class assignments, sound and video equipment, computer, projector

Bibliography

Required Textbooks/Reading:

Authors	**Title**	**Publisher**	**Year**	**ISBN**
Gordon, L., Ihre, R., Sandervarn, A. and Hillenius, P.	Shipbroking and Chartering Practice, 7th edition	LLP ltd	2009	Ebook 9781315087979

<table>
<tr><td></td><td>Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Panayides, P</td><td>Principles of Chartering, 3rd edition</td><td>CreateSpace Independent Publishing Platform</td><td>2018</td><td>978-1978375055</td></tr>
<tr><td>Plomaritou, E. and Papadopoulos</td><td>Shipbroking and Chartering Practice, 8th edition</td><td>Informa</td><td>2018</td><td>9780367871017</td></tr>
</table></td></tr>
<tr><td>Assessment</td><td>Homework, in-class assignments, projects, midterm, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

<table>
<tr><td>Course Title</td><td colspan="5">Port & Terminal Management</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-436</td></tr>
<tr><td>Course Type</td><td colspan="5">Elective</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">4th Year, Spring Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Captain. Dr. Andreas Frangos</td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">4</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>2</td><td>---</td><td>---</td><td>----</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• Understand the significance and challenges related to ports
• Understand the legal, economic, operational and commercial aspects of the Port and Terminal operations</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:

• Explain the key issues in the commercial and operational aspects of port and terminal management
• Evaluate the role, organization and operation of ports and terminals in promoting the efficiency of the maritime and logistics sector
• Apply relevant analytical frameworks to analyze the performance of ports and terminals under the effects of internal and external factors, and draw the implications for port management and stakeholders
• Evaluate the port plan of any port and constructively critisise the location of each port function in relation to the others
• Relate economic consequences to the infrastructure available for different modes of connecting transportation
• Analyze the legal legal aspects of port management (i.e port labour relations)</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">9. Introduction - levels of port, their functions and terminal development

10. Operations Management Principles

11. Basic parameters in planning and management of ports and terminals

12. Methods to estimate and assess demand for port and terminal services

13. Basic parameters of port and terminal operations

14. Container terminal planning and management</td></tr>
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15. Ships and cargoes

16. Subsystems and basic service provision procedures in container terminals

17. Moving, stacking, storing and handling equipment categories and types

18. Electronic Terminal Operating Systems

19. Trends in terminal automation - Impacts on terminal and port work

20. Port and terminal performance assessment and Key Performance Indicators (KPIs) – Port competition, cost and marketing

21. Port ownership and legal aspects of port management

</td></tr>
<tr><td>Teaching Methodology</td><td>Lectures, in-class assignments, sound and video equipment, computer, projector, field training</td></tr>
<tr><td>Bibliography</td><td>

Required Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
Valerie Stringer	Port & Terminal Management, 2020 Edition	Institute of Chartered Shipbrokers	2020	9781911328117

Recommended Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
Maria G. Burns	Port Management and Operations	CRC Press	2014	9781482206753

</td></tr>
<tr><td>Assessment</td><td>Homework, in-class assignments, projects, midterm, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
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<table>
<tr><td>Course Title</td><td colspan="5">Liner Operations</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-434</td></tr>
<tr><td>Course Type</td><td colspan="5">Elective</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">4th Year, Spring Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5"></td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">3</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>2</td><td>---</td><td>---</td><td>----</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of the course are to:
• Ensure a thorough knowledge and understanding of liner business.
• Understand the liner shipping operations, and the liner industry structure.
• Ensure knowledge of the concept of unitization and intermodalism.
• Develop an awareness and understanding of the legal aspects of liner trades.</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">After completion of the course students are expected to be able to:
• Thoroughly understand the characteristics of liner services and their difference from the tramp trades.
• Understand the Liner Trades of the world - container, Ro-Ro and residual break-bulk, their trade routes, ports and relative importance.
• Thoroughly understand the different types of container ships including cellular/non-cellular, post Panamax, hatchless, feeders, „fast ships“ and other predicted developments.
• Understand the types of ro-ro ships including passenger and freight ferries, deep-sea roro/containerships, freight ro-ro ships and ro-ro ships for specialist traffic e.g. forest products.
• Thoroughly understand the paramount importance of bills of lading in the Liner Trades, their function and their role in international trade.
• Show an in depth understanding of the implications for the tanker trades and the practical effects of environmental protection and pollution liability legislation including MARPOL, USA OPA and EU legislation.</td></tr>
<tr><td>Prerequisites</td><td colspan="2">None</td><td>Required</td><td colspan="2">None</td></tr>
<tr><td>Course Content</td><td colspan="5">1. Definition of Liner Trades
2. The Ships
3. Port Terminals and Cargo Handling
4. Containerization, Intermodal, Transport and Logistics
5. Liner industry structure
6. Bills of Lading and Other documents
7. Financial aspects of import and export business
8. Legal aspects of liner trades</td></tr>
</table>

<table>
<tr><td></td><td>9. Relevant E.U. Directives and Legislation
10. International Conventions
11. Shipping Law
12. Control of Ships by Host States and Ports
13. Security and Environment</td></tr>
<tr><td>Teaching Methodology</td><td>Lectures, in-class assignments, sound and video equipment, computer, projector, field training</td></tr>
<tr><td>Bibliography</td><td>Required Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Collins, Nick</td><td>The essential guide to chartering and the dry freight market</td><td>Clarkson Research Studies</td><td>2000</td><td>9780900291975</td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><th>Authors</th><th>Title</th><th>Publisher</th><th>Year</th><th>ISBN</th></tr>
<tr><td>Isbester Capr. Jack</td><td>Bulk carrier practice: a practical guide, 2nd edition</td><td>Nautical Insitute</td><td>2010</td><td>9781870077163</td></tr>
</table></td></tr>
<tr><td>Assessment</td><td>Homework, in-class assignments, projects, midterm, final exam.</td></tr>
<tr><td>Language</td><td>English</td></tr>
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<table>
<tr><td>Course Title</td><td colspan="5">Bachelor Thesis</td></tr>
<tr><td>Course Code</td><td colspan="5">MANS-490</td></tr>
<tr><td>Course Type</td><td colspan="5">Elective</td></tr>
<tr><td>Level</td><td colspan="5">1st Cycle</td></tr>
<tr><td>Year / Semester</td><td colspan="5">4th Year, Spring Semester</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5"></td></tr>
<tr><td rowspan="2">ECTS</td><td rowspan="2">5</td><td>Theory</td><td>Laboratory</td><td>Simulation</td><td>Tutorial</td></tr>
<tr><td>---</td><td>----</td><td>----</td><td>----</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">The main objectives of this course are to:
• Teach students important research techniques and practices
• Introduce students to practical engineering design
• Create the foundation where the students will have the opportunity to utilize theoretical knowledge and engineering tools/techniques acquired throughout the years in order to design, build, and test their idea in a laboratory environment
• Promote team work and practical experience in a multi-disciplinary environment
• Teach students how to write proper reports and how to present their work in front of their colleagues
• Ensure that students know how to properly set up appropriate measurement and troubleshooting procedures including proper use of laboratory equipment
• Promote engineering ethics and respect to the environment and society
• Teach students how to properly plan their activities in order to successfully achieve their design goals and, more importantly, how to meet their own deadlines</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">Upon completion of the course students are expected to:

• Use research skills on an engineering topic in order to reach a successful design for their project idea
• Operate specialized equipment and use computational/simulation tools
• Design and construct a working engineering application starting from a basic project idea and a set of constraints/specializations
• Write good technical reports and effective presentations
• Organize and schedule project activities in order to successfully complete an engineering project
• Test and troubleshoot their prototype
• Demonstrate team work and collaboration with others toward a successful completion of a project
• Identify important principles of ethics in engineering practices</td></tr>
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<table>
<tr><td>Prerequisites</td><td>None Senior Standing and Approval by the Department</td><td>Required</td><td>None</td></tr>
<tr><td>Course Content</td><td colspan="3">Independent-type of work involving research, design, implementation, testing, and troubleshooting</td></tr>
<tr><td>Teaching Methodology</td><td colspan="3">Lectures/seminars and project supervision</td></tr>
<tr><td>Bibliography</td><td colspan="3">Required Textbooks/Reading:
<table>
<tr><td>Authors</td><td>Title</td><td>Publisher</td><td>Year</td><td>ISBN</td></tr>
<tr><td>W. Strunk, E. B. White, R. Angell</td><td>The Elements of Style</td><td>Longman, 4th Edition</td><td>1999</td><td>978-0205313426</td></tr>
<tr><td>Frank R. Kschichang</td><td>Giving a Talk</td><td>University of Toronto</td><td>2000</td><td></td></tr>
</table>
Recommended Textbooks/Reading:
<table>
<tr><td>Authors</td><td>Title</td><td>Publisher</td><td>Year</td><td>ISBN</td></tr>
<tr><td>As needed</td><td></td><td></td><td></td><td></td></tr>
</table></td></tr>
<tr><td>Assessment</td><td colspan="3">Progress reports, presentation, final report</td></tr>
<tr><td>Language</td><td colspan="3">English</td></tr>
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