

**ANNEX B OF CMO NO. 20, SERIES OF 2015
BACHELOR OF SCIENCE IN MARINE TRANSPORTATION
COURSE SPECIFICATIONS**

Course Code	:	Nav 2
Course Descriptive Title	:	Terrestrial and Coastal Navigation 1
Course Credits	:	5 units
Lecture Contact Hours per Week	:	5 hours
Laboratory Contact Hours per Week	:	0 hours
Prerequisite	:	Nav 1
Reference/s	:	<ol style="list-style-type: none"> 1. Table A-II/1 of the 1978 STCW Code as amended Function: Navigation at the operational level 2. IMO Model Course 7.03 3. Annex A of CMO No. 20, Series of 2015 (Curriculum Mapping for BSMT)

COMPETENCE	KNOWLEDGE, UNDERSTANDING AND PROFICIENCY	TOPICS	APPROX HOURS
Plan and conduct a passage and determine position	<i>Terrestrial and Coastal Navigation</i> Ability to determine the ship's position by use of: 1) Landmarks 2) aids to navigation, including	<ol style="list-style-type: none"> 1. Definition – Earth <ul style="list-style-type: none"> – Defines 'great circle', 'small circle', 'spherical angle', 'spherical triangle', 'poles of a great circle' – Defines 'earth's poles', 'equator' and 'meridians' – Defines 'latitude' and 'parallels of latitude', 'prime meridian' and 'longitude' 	7

COMPETENCE	KNOWLEDGE, UNDERSTANDING AND PROFICIENCY	TOPICS	APPROX HOURS
	lighthouses, beacons and buoys 3) dead reckoning, taking into account winds, tides, currents and estimated speed	<ul style="list-style-type: none"> – Defines 'difference of latitude' and 'difference of longitude' – Describes the earth as an ellipsoid – Defines 'compression', and states its value – Defines 'international nautical mile', 'cable' and 'knot' 	
		2. Charts <ul style="list-style-type: none"> – Demonstrates basic knowledge of chart projections – Defines 'natural scale' of a chart – Describes the requirements of a chart appropriate for marine navigation – Identifies the Mercator chart as a mathematical projection and understands the principles of its construction. – Describes the properties of the chart and the degree to which it meets navigational requirements and also its limitations – Demonstrates the use of a chart catalogue – Demonstrates the correcting of charts according to Notices to Mariners 	12
		3. Electronic Charts <ul style="list-style-type: none"> – Demonstrates knowledge of electronic charts – Describes the differences between Vector and Raster electronic charts – Explains the major characteristics of ECDIS and ECS data such as data term and definition; data contents; data structure; attribute; data quality and it accuracy – Describes the terms and definitions used in the 	4

COMPETENCE	KNOWLEDGE, UNDERSTANDING AND PROFICIENCY	TOPICS	APPROX HOURS
		context of ECDIS and ECS <ul style="list-style-type: none"> – Describes ECDIS and ECS display characteristics – Explains the scope and selection of chart data display categories 	
		4. Datums <ul style="list-style-type: none"> – Explains the rotation of the earth about its axis – Defines describes the directions on the earth's surface – Describes the direction of the ship's head on a gyro-compass (gyro course) – Describes the direction of the ship's head on a magnetic compass (compass course) 	2
		5. Distances <ul style="list-style-type: none"> – Describes the approximate polar and equatorial circumferences of the earth – Demonstrates how to measure the distance between two positions on a Mercator chart based on the latitude of the two positions 	3
		6. Information from Charts, Lists of Lights, and other Publications <ul style="list-style-type: none"> – Recognises and demonstrates the use of the symbols and abbreviations on a chart, especially lighthouses, buoys, beacons, radio beacons and other navigational marks – Identifies the characteristics and range of lights – Calculates the distances of sighting lights and dipping distances 	44

COMPETENCE	KNOWLEDGE, UNDERSTANDING AND PROFICIENCY	TOPICS	APPROX HOURS
		<ul style="list-style-type: none"> – Identifies the symbols for chart depths and nature of the bottom and explains the use of soundings – Recognises coastlines, coast and radar-responsive targets – Interprets coastline contours, bottom topography, depths and nature of bottom – Uses the tidal information given on a chart – Recognises traffic lanes and separation zones – Explains the danger of placing implicit reliance upon floating navigational aids – Explains the danger of approaching navigational aids too closely – Obtains and appraises information from navigational publications including sailing directions, notices to mariners, radio navigational warnings and ship's routeing information – Demonstrates simple passage planning and execution including use of sailing directions, tide tables, radio navigational warning and ship's routeing information within parameters established by the Master – Explains the use of clearing marks and horizontal and vertical danger angles – Recognises suitable passages, approaches and anchorages in clear weather and thick weather, using radar-responsive targets demonstrate planning of a passage between two ports from berth to berth using the procedures for passage planning as per the Guidelines for Voyage Planning provided by IMO in Resolution A.893(21) 	

COMPETENCE	KNOWLEDGE, UNDERSTANDING AND PROFICIENCY	TOPICS	APPROX HOURS
		7. IALA Buoyage System <ul style="list-style-type: none"> – Explains the principles and rules of the International Association of Lighthouse Authorities (IALA) Maritime Buoyage System, Systems "A" and "B" – Recognises the lights and shapes displayed on lateral and cardinal marks – Recognises the lights and shapes displayed on other types of buoys in the system 	2
TOTAL			74