Terrestrial Navigation Part 2

Basic Course Specification		
Course Title	**Course Code**	**Program on which the course is given**
Terrestrial Navigation Part 2	BS 234	Bachelor
Academic Year	**Specialization** (units of study)	**Pre-Requisites**
2020-2021	Theoretical (2 hrs/week) Application (2 hrs/week) Credit 3 Cr	BS 132

Overall Course Objectives

On completion of this course Student should be highly competent to carry out the Navigational tasks related to the Mathematical Methods of Sailing, the different tide calculations, the use of various Admiralty Publications and identify the concept of Electronic Chart Display and Information System (ECDIS); as per the requirement of the STCW 78 convention as amended and its Code - chapter II and Table A-II/1in addition to section B-I/12 and in the light of IMO model courses 7.03 and 1.27.

Course Learning Outcomes. By successful completion of the course each student will be able to:

Topic	Linking to PLOs	Midterm Assessment	12th Week Assessment	Class Activities	Final Exam
1. Understand the types and mathematical calculation of sailing.	a	✓			✓
2. Identify the tide phenomena and its effect on the vessel's safety.	a	✓			
3. Recognize the different nautical publications and their contents.	a			✓	✓
4. Understand the advantage and limitations of the electronic chart display and information system (ECDIS).	a			✓	✓
5. Apply the mathematical theories on planning a voyage for proper calculations of a future position	a, d		✓		✓
6. Calculate the tidal levels during approaching ports considering the critical cases (passing over shoal – passing under bridge - Grounding and time to re-float)	a, d		✓	✓	✓
7. Extract all data needed from publication when planning a voyage.	d, f		✓		✓
8. Demonstrate the ECDIS functions and usage.	d, f			✓	

Course Content				
Lec./ Week #	**Topic**	**Hrs. #**	**Theoretical**	**Application**
1	Introduction to Sailing. Parallel sailing & Sailing along a meridian.	4	2	2

Course Content				
Lec./ Week #	**Topic**	**Hrs. #**	**Theoretical**	**Application**
2	Plane Sailing	4	2	2
3	Mercator Sailing	4	2	2
4	Introduction to Tide & Tidal Stream. Calculations of the Height and time of tide at standard ports.	4	2	2
5	Tide applications Actual Depth & Actual height of light house Passing over shoal	4	2	2
6	Tide applications Passing Under Bridge & Grounding	4	2	2
7	**7th Week Exam**	4	2	2
8	Calculations of the Height & time of tide at secondary ports	4	2	2
9	Tidal applications at secondary ports	4	2	2
10	Nautical Publications	4	2	2
11	Nautical Publications Nautical Publications corrections and Notice to mariner	4	2	2
12	Practices on extracting information from nautical publication.**&12th Week Exam**	4	2	2
13	Electronic Chart Display and Information System	4	2	2
14	Electronic Chart Display and Information System	4	2	2
15	Electronic Chart Display and Information System	4	2	2
16	**Final Assessment**			
Total Hours		**60**	**30**	**30**

Teaching & Learning Methods	**Facilities Required for Teaching & Learning Methods**
Explaining and demonstrating the lesson contents – Delivery of experience - discussing and asking questions to interact with students – solving examples – Allaying Simulator scenarios.	• White Board & Data Show

Students Assessment Methods	
Assessment Schedule	
Assessment#1	Week 7
Assessment#2	Week 12
Assessment#3	Week 16

Grading Method		
Midterm Assessment	Written exam	**30%**

Course Content				
Lec./ Week #	**Topic**	**Hrs. #**	**Theoretical**	**Application**
12th week Assessment	Written exam		**20%**	
Class Activities	Participation - Quiz		**10%**	
Final Exam	Written exam		**40%**	
	Total		**100 %**	

Assessment criteria shall meet the standards of the STCW 78 convention "as amended"; and in the light of the related IMO model courses.

Staff Requirements

Master FG/ Ph.D.

Course Notes	Essential Books
Lecturer sheets.	Admiralty Manual of Navigation, Volume 1
Recommended Books	**Periodicals and Publications**
• Command of the Defense Council, (2008) Admiralty Manual of Navigation: The Principles of Navigation, Nautical Institute. • Bowditch, Nathaniel, (1984) American Practical Navigator: An Epitome of Navigation, Defense Mapping Agency Hydrographic/Topographic Center. • IMO, (2012) Operational Use of Electronic Chart Display and Information Systems (ECDIS): Model Course 1.27, IMO. • Transas ECDIS, (2014) Transas ECDIS Manual, TRANSAS. • Gale, Harry (2013), From Paper Charts to ECDIS: A Practical Voyage Plan, Nautical Institute.	Admiralty Publications International Convention on Standards of Training, Certification and Watch keeping for Seafarers (STCW), as amended. International Convention for the Safety of Life at Sea (SOLAS)1974, (IMO Sales No. IE110E) SOLAS - Consolidated Edition, 2020 IMO Model Course 1.27, The Operational Use of ECDIS, 2000 1974 SOLAS Convention, Regulations V/19, V/20 and V/27, as amended 2009, IMO Res. MSC 282(86) Revised ECDIS Performance Standards, MSC.232(82), IMO, 12/2006 ECDIS Performance Standards, IMO Resolution A.817(19) as adopted 11/1995, including Appendices 1 – 5, Appendix 6 as adopted 11/1996 Res. MSC.64(67), and Appendix 7 as adopted 12/1998 Res. MSC.86(70)

Others (websites, e-books…etc)

None

Accreditation Bodies
*Egyptian Authority for Maritime Safety (EAMS)
*European Commission (EC)
ISO (9001 – 2015) DNV-GL

*Central Evaluation and Accreditation Agency Hanover, Germany (ZEVA)
*Ministry of Education (KSA)
Ministry of Higher Education (Greece)*
*Ministry of Higher Education (Oman)
*Commission for Academic Accreditation (CAA), Ministry of higher Education (UAE)
*University of Plymouth, United Kingdom (dual degree)

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