

Course Description Form

Basic Course Specifications				
Course Title	: Naval Architecture & Ship Construction II			
Course Code	: MM342			
Program on which the course is given	<input checked="" type="checkbox"/> Bachelor	<input type="checkbox"/> Diploma	<input type="checkbox"/> Master	<input type="checkbox"/> Pre- PhD
Academic year	:			
Specialization (units of study)	: Theoretical 28 (hrs.) Simulator (hrs.)		Practical 17 (hrs.)	
Pre-Requisites	: MM241T (Naval Architecture & Ship Construction)			
Overall Course Objectives				
<p>This syllabus covers the requirements of the STCW 78 convention Chapter III section A III/1. This functional element provides the detailed knowledge to support the training outcomes related to Naval architecture and Ship construction at the operational level.</p>				
Knowledge and Understanding				
<p>At the end of the course, students should be able to:</p> <ul style="list-style-type: none"> a.1 Understand the meaning and the role of IACS (International association of classification society). a.2 Know and understand ship dimensions. a.3 Know construction parts of different types of ships. a.4 Understand types of Stresses acts on ship's hull and construction members, which resist these stresses. a.5 Understand the Naval following tasks (Archimedes principle, Relative density calculations. a.6 Understand Displacement, displacement curve, VCB calculation by Morrishes approximate formula and TPC definition and calculations. a.7 Coefficients of form (definition and calculations). a.8 Stability Of Ships (Equilibrium, Stable and Unstable...Etc.). a.9 Centre of gravity (KG, LCG) calculations. a.10 Shift in Centre of Gravity Due to addition of mass Calculations. a.11 Propellers (apparent and real slip, wake and thrust). 				
Intellectual Skills				
<p>At the end of the course, students should be:</p> <ul style="list-style-type: none"> b.1 In trust of themselves and act positively during any emergency situation. b.2 Express loyalty for his/her affiliation to the collage of maritime transport and technology and the AASTMT whenever the situation necessitate. b.3 Recognize value of student and scientific support received from his/her academic adviser 				
Professional and Practical skills				
<p>At the end of the course, students should be able to:</p> <ul style="list-style-type: none"> c.1 Deal with class surveyor during annual survey. c.2 Write damage report if accident happened to ship's hull during his service. c.3 Write name of damage construction parts in preparing of dry dock job list. c.4 Student will be able to calculate and understand the basics of ship stability. 				
General and Transferable skills				
<p>At the end of the course, students should be able to:</p> <ul style="list-style-type: none"> d.1 Understanding of jobs carried out during dry-docking. d.2 Act effectively in supervision of workers during dry-docking. 				

Course content					
Lect. #	Topic	Hrs.	Theoretical	Practical	Simulator
1	<ul style="list-style-type: none"> Familiarization (Introduction to ship construction, Importance of studying ship construction, Engineering drawings, ship building steels, ship building steel sections. IACS (International Association of Classification societies). 	2	2		
2	<ul style="list-style-type: none"> Ship dimensions 	1	1		
3	<ul style="list-style-type: none"> Vessel structure 	2	2		
4	<ul style="list-style-type: none"> Types of ships, cross section of General cargo, cross-section of bulk carrier. Cross-section of container ship, cross section of Ro-Ro ship. Cross-section of Oil Tanker ship, cross section of Refrigeration ship. 	4	4		
5	<ul style="list-style-type: none"> Framing system, bulwarks, pillars onboard training ship. 	3		3	
6	<ul style="list-style-type: none"> Fore end construction, stern construction, chain locker, thrusters. 	5	2	3	
7	<ul style="list-style-type: none"> Stresses acting on ship structure, General structure stresses. Stresses acting on ship structure, Local stresses. 	2	2		
8	<ul style="list-style-type: none"> Rudders. Bulkheads. 	3	2	1	
9	<ul style="list-style-type: none"> Archimedes principal, Relative density calculations. 	1	1		
10	<ul style="list-style-type: none"> Displacement, displacement curve, VCB calculation by Morrishes approximate formula and TPC definition and calculations. 	2	2		
11	<ul style="list-style-type: none"> Coefficients of form (definition and calculations). 	2	2		
12	<ul style="list-style-type: none"> Stability Of Ships (Equilibrium, Stable, Unstable...Etc.) 	2	2		
13	<ul style="list-style-type: none"> Centre of gravity (KG, LCG) calculations. 	2	2		
14	<ul style="list-style-type: none"> Shift in Centre of Gravity Due to addition of mass Calculations. 	2	2		
15	<ul style="list-style-type: none"> Propellers (apparent and real slip, wake and thrust). 	2	2		
16	<ul style="list-style-type: none"> 2 days visit to a floating dock. 	10		10	
17	<ul style="list-style-type: none"> Final exam 				

Teaching & learning methods				
Explanation of the lesson contents – discussing and asking questions to interact with students – audio-visual presentation – practical work-problem solving.				
Facilities required for Teaching & learning methods				
<input type="checkbox"/> Projector	<input type="checkbox"/> Overhead Slide	<input type="checkbox"/> Books & Guided sea training book	<input type="checkbox"/> Video	<input type="checkbox"/> white board
Students Assessment Methods				
Assessment submission Schedule				
Assessment#1(Written)		2 nd trip summary submit by end of 2 nd trip		
Assessment#2(Written)		4 th trip summary submit by began of 5 th trip		
Assessment#3(Written)		Course summary submit by two weeks after final exam date		

Grading Method		
Attendance	<input type="checkbox"/>	10 Marks
Mid Term Examination	<input type="checkbox"/>	30 Marks
Presentations		None
Assignments	<input type="checkbox"/>	20 Marks
Projects		None
Participation		None
Oral Examination		None
Final Examination	<input type="checkbox"/>	40 Marks
		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

List of References		
Course Notes		
Description	:	Guided sea training book & Lecturer notes
Essential Books		
Description	:	<ul style="list-style-type: none"> • Ship construction by Dr. Abdel Halim Bassiony • Ship construction by D.J.Eyres • REED'S marine engineering Series volume 4 Naval Architecture for Marine Engineers.
Recommended Books		
Description	:	<ul style="list-style-type: none"> • REED'S marine engineering Series volume 4 Naval Architecture for Marine Engineers.
Periodicals and publications		
Description	:	<ul style="list-style-type: none"> • Service manuals of training ship
IMO Reference		
Description	:	<ul style="list-style-type: none"> • International Convention on Standards of Training, Certification and Watch Keeping for Seafarers (STCW78) as amended

Matrix of knowledge and skills of the Educational Course

University/ Academy	:	AASTMT	Course name: Naval Architecture & Ship Construction II
College/ Institute	:	Sea Training Institute	Course code: MM342
Department	:	Engineering Guided Sea Training Department.	

Week	Course Contents	Knowledge	Intellectual Skills	Professional Skills	General Skills
1	Familiarization (Introduction to ship construction, Importance of studying ship construction, Engineering drawings, ship building steels, ship building steel sections. IACS (International Association of Classification societies).	a.1	b.3	c.1	
2	Ship dimensions	a.2			
3	Vessel structure	a.3		c.1-c.2-c.3	
4	Types of ships, cross section of General cargo, cross-section of bulk carrier. Cross-section of container ship, cross section of Ro-Ro ship. Cross-section of Oil Tanker ship, cross section of Refrigeration ship.	a.3		c.2	
5	Framing system, bulwarks, pillars onboard training ship.	a.3		c.2	
6	Fore end construction, stern construction, chain locker, thrusters.	a.3		c.2	
7	Stresses acting on ship structure, General structure stresses. Stresses acting on ship structure, Local stresses.	a.4			
8	Rudders. Bulkheads.	a.3			
9	Archimedes principal, Relative density calculations.	a.4		c.4	
10	Displacement, displacement curve, VCB calculation by Morrishes approximate formula and TPC definition and calculations.	a.6		c.4	
11	Coefficients of form (definition and calculations).	a.7	b.3	c.4	
12	Stability Of Ships (Equilibrium, Stable, Unstable... Etc.)	a.8		c.4	
13	Centre of gravity (KG, LCG) calculations.	a.9		c.4	
14	Shift in Centre of Gravity Due to addition of mass Calculations.	a.10		c.4	
15	Propellers (apparent and real slip, wake and thrust).	a.11		c.4	
16	2 days visit to a floating dock.	a.3-a.11		c.1-c.2	d.1-d.2

Instructors

Dean

Eng. Mohamed Elbawab.

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