الجامعة الوطنية
National University
Science & Technology للعلوم والتكنولوجيا
كلية عمان البحرية الدولية
International Maritime College Oman

ACADEMIC YEAR 2023 – 2024

Program	Year	Semester	Paper
DEO	3	1	Midterm

MODULE NAME:	**Cargo Handling and Stowage-III**

MODULE CODE:	**DSEAM IV**	**EXAM DATE:**	**13.11.2023**
TEACHER'S NAME:	**ARIFE TUGSAN ISIACIK COLAK**	**DURATION:**	**90 Min**

Questions to be answered on:	Allowed requirements	Number of pages
Space provided on the question paper	Pen, Pencil & Calculator	(Incl. Cover Page): 5

Points of Attention:

- For each question, the maximum earned points are mentioned between brackets at the end of each question.
- Write very clearly! Answers that are not readable are not marked and do not get points!
- Make sure your answers are written to the point.
- All answers should be written **in English**.
- Write all the answers **in BLUE or BLACK pen only (NO PENCIL)**.
- Answer written in **PENCIL** will not be marked.
- Use the **pencil** only for **diagrams & graphs & drawings**.
- Show all the calculation steps in the given space.
- When finished submit the question paper, together with the answer scripts and the signed cover page to the invigilator.
- Any cheating/copying may result in an instant failing of the examination.

STUDENT NAME:	
STUDENT ID:	

FINAL MARKS

	40
	10

Number of answer scripts: ……

Invigilator: …….....

Student's signature: ……

Time of receipt: …….....

Question 1: The planning for loading and discharging of cargo is a compact unit. First of all we have to calculate the cargo, which means how much cargo can be loaded. The planning for the cargo operation is based on the cargo to be loaded. The quantity of the cargo to be loaded will be given by the charterer. After knowing how much cargo must be loaded (charterer's figures) the ship command must calculate if the cargo can be loaded on board of the vessel. Each cargo requires a different kind of stowage.

A.Regarding this information how we calculate our cargo hold capacity each (3)?

B. Explain the definition of Stowage factor aling with the unit (3).

C. After calculating the stowage factor, how we arrange and which parameters should be include in cargo plan? (3)

D. Who is responsible for cargo plan and whom signatures are needed to start cargo operation? (3).

(Total Mark: 12)

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Question 2: How the ship and her movements effect on cargo (4)? Which actions should be taken for prevention of cargo and ship damage for non-bulk cargo (4)? What is the basic principles of lashing cargo and Maximum Securing Load (4). Total: 12 Mark

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Question 3: What are procuders for draft survey and factors affecting draft survey? (Total 8)

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Question 4: In the below diagram and explanation you will find how to find correct sounding values.(8)

2. How to use

the sounding values of a certain tank is as follows:

GAUGE cm	tr=0 m3	tr=0.5 m3	tr=1 m3	tr=1.5 m3	tr=2 m3	tr=2.5 m3	tr=3 m3	tr=-0.5 m3	H1P m3	H2P m3	H1S m3	H2S m3	FILL %	L.C.G m	T.C.G m	V.C.G m	IMOM m4
0	2.54	0.49	0.23	0.16	0.13	0.11	0.09	6.45	6.2	15.3	1.0	3.2	0.3	197.82	4.62	0.01	1671.0
10	21.52	17.19	13.07	9.69	7.53	6.11	5.08	26.03	6.5	14.7	-4.4	-4.9	2.7	198.07	4.94	0.06	2200.6
20	42.35	37.59	32.96	28.50	24.24	20.54	17.68	47.23	7.8	17.1	-6.2	-10.1	5.3	198.20	5.12	0.11	2538.1
30	64.43	59.35	54.38	49.52	44.80	40.23	35.84	69.61	8.9	19.2	-7.4	-13.3	8.0	198.29	5.26	0.16	2819.7
40	87.52	82.17	76.92	71.76	66.71	61.77	56.96	92.95	9.9	21.2	-8.5	-15.6	10.9	198.36	5.38	0.22	3067.6
50	111.46	105.89	100.39	94.98	89.66	84.43	79.31	117.11	10.8	22.9	-9.5	-17.7	13.9	198.42	5.49	0.27	3295.6
60	136.16	130.38	124.67	119.04	113.49	108.02	102.63	142.01	11.7	24.6	-10.4	-19.6	17.0	198.48	5.59	0.32	3506.9
70	161.55	155.58	149.68	143.84	138.08	132.39	126.78	167.58	12.5	26.2	-11.3	-21.4	20.1	198.53	5.68	0.38	3706.6
80	187.55	181.41	175.33	169.32	163.37	157.48	151.67	193.75	13.3	27.8	-12.1	-23.0	23.4	198.57	5.76	0.43	3897.0

For example, to get the tank volume at gauge 10 with 1m trim and 1 degree heel to PS firstly, get the value with 1m trim from the table, VNET=……., then, get the Volume correction for the given heel from the table, VCORRH=……..So, the volume at gauge 10 with 1m trim and 1 degree heel to PS, VOLUME=VNET+VCORRH=…… m^3.