



47 Course Specification of Harbors Engineering

I. Course Identification and General Information:					
1	Course Title:	<i>Harbors Engineering</i>			
2	Course Code & Number:	CE 306			
3	Credit hours:	C.H			Credit Hours
		Th.	Tu.	Pr.	
		2			
4	Study level/ semester at which this course is offered:	4 th grade/ 1 st semester			
5	Pre –requisite (if any):	Hydraulic and fluid Mechanics			
6	Co –requisite (if any):	No			
8	Program (s) in which the course is offered:	Civil Engineering			
9	Language of teaching the course:	English+ Arabic			
10	Location of teaching the course:	Lecture hall No.8			
11	Prepared By:	Prof. Abdulla Noaman			
12	Date of Approval				

II. Course Description:

This course provides the basic skills to carry out the sea waves analyses and designs that are often encountered in engineering practice. **Students are exposed to the basic facts concerning waves to use them to**, avoid hazardous conditions, and operate with a minimum of danger if such conditions can-not be avoided. Related branches and applications include hydraulic ad fluid mechanics.

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III. Course Intended learning outcomes (CILOs) of the course		Referenced PILOs
a.1	Demonstrate the coastal engineering practice natural phenomenon of the tides and the capacity of the Yemeni ports.	A1
a.2	Describe the principles of design waves breakers and waves theory	A3
b.1	Identify the wave theory and causes of the wave breakers failures	B.1
b.2	Carryout the risk analysis and stability analyses of the wave's breakers	B2
c.1	Design the waves breakers and harbor components.	C.2
c.2	Apply the mathematical model to identify the waves parameters and type of wave breakers	C3
d.1	write a report on efficiency of the harbors in Yemen.	D1

(A) Alignment Course Intended Learning Outcomes of Knowledge and Understanding to Teaching Strategies and Assessment Strategies:		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
a.1- Demonstrate the coastal engineering practice,	Lecture, Multimedia Presentation, Tutorials, Self-directed learning	Written exam assignment
a.2. Describe the types of materials used in marine structures and design techniques	Lecture, Multimedia Presentation, Tutorials, Self-directed learning	Written exam, Quiz Assignment

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(B) Alignment Course Intended Learning Outcomes of Intellectual Skills to Teaching Strategies and Assessment Strategies:		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
b.1- Identify the wave theory and causes of the wave breakers failures	Lecture, Multimedia Presentation, Tutorials, Self-directed learning	Examinations, tests, coursework assignments, group and individual reports.
b.2- Carryout the risk analysis and stability analyses of the wave's breakers	Lecture, Multimedia Presentation, Tutorials, Self-directed learning	Examinations, tests, coursework assignments, group and individual reports.

© Alignment Course Intended Learning Outcomes of Professional and Practical Skills to Teaching Strategies and Assessment Strategies:		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
c.1- Design the waves breakers and harbor components	Lecture, Multimedia Presentation, Tutorials, Self-directed learning	Examinations, tests, coursework assignments, group and individual reports.
c.2- Apply the mathematical model to identify the waves reflection and refraction	Lecture, Multimedia Presentation, Tutorials, Self-directed learning	Examinations, tests, coursework assignments, group and individual reports.

(D) Alignment Course Intended Learning Outcomes of Professional and Practical Skills to Teaching Strategies and Assessment Strategies:		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
d.1- Write a report on efficiency of the harbors in Yemen.	Graduation projects, Group projects	Examinations

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2	Wave Theories, Selection of Design Waves, Waves breakers	b1,b2,c2,c2	9	2.5
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VII. Schedule of Assessment Tasks for Students During the Semester:

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment %	Aligned Course Learning Outcomes
1	Written assignment	3 ,9	5	5	a.2,b1, b2, c1,c2
2	Quizzes.	4	5	5	a.1,a2, ,b2 ,c1
3	Mid-term exam.	7 th	20	20	a.1,a2, b1,b2 ,c1
4	Final-exam.	10	70	70	a.1,a2, b1,b2 ,c2 a.2
Sum			100	100%	

VIII. Learning Resources:

- Written in the following order: (Author - Year of publication – Title – Edition – Place of publication – Publisher).

1- Required Textbook(s) (maximum two).

هندسة الموانئ والمنشآت البحرية للدكتور ابراهيم عبيدو دار الراتب الجامعية 2000
Hydraulics in Civil and Environmental Engineering 4th edition (Coastal engineering)
A. Chadwick et al.
Hardback: ISBN 978-041-530608-9
Paperback: ISBN 978-041-530609-6

2- Essential References.

3- Electronic Materials and Web Sites etc.

http://www.khuisf.ac.ir/Dorsapax/Data/Sub_118/File/Hydraulic%20Structures_4th%20edition_.pdf

IX. Course Policies:

1	Class Attendance:
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	The students should have more than 75 % of attendance according to rules and regulations of the faculty.
2	Tardy: The students should respect the timing of attending the lectures. They should attend within 10 minutes from starting of the lecture.
3	Exam Attendance/Punctuality: The student should attend the exam on time. The punctuality should be implemented according to rules and regulations of the faculty for midterm exam and final exam.
4	Assignments & Projects: The assignment is given to the students after each chapter, the student has to submit all the assignments for checking on time.
5	Cheating: If any cheating occurred during the examination, the student is not allowed to continue and he has to face the examination committee for enquiries .
6	Plagiarism: The student will be terminated from the Faculty, if one student attends the exam on another behalf according to the policy, rules and regulations of the university.
7	Other policies: - All the teaching materials should be kept out the examination hall. - The mobile phone is not allowed. - There should be a respect between the student and his teacher.

Reviewed By	<u>Vice Dean for Academic Affairs and Post Graduate Studies</u> <u>Dr. Tarek A. Barakat</u> <u>Dr. Mohammad Algorafi</u>
	<u>Deputy Rector for Academic Affairs Dr. Ibrahim AlMutaa</u> <u>Dr. Ahmed mujahed</u> <u>Dr. Munaser Alsubri</u>

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Template for Course Plan (Syllabus)

I. - Information about Faculty Member Responsible for the Course:							
Name of Faculty Member	Abdulla Abdeqader Noman	Office Hours					
Location & Telephone No.	Sana'a, 777725220	SAT	SUN	MON	TUE	WED	THU
E-mail	abnoman@hotmail.com						

II. Course Identification and General Information:					
1-	Course Title:	<i>Harbors Engineering</i>			
2-	Course Number & Code:	CE 306			
3-	Credit hours:	C.H			Credit Hours
		Th.	Tu.	Pr.	
		2			2
4-	Study level/year at which this course is offered:	4 th grade/ 1 st semester			
5-	Pre –requisite (if any):	Hydraulic and Fluid Mechanics			
6-	Co –requisite (if any):	No			
7-	Program (s) in which the course is offered	Civil Engineering			
8-	Language of teaching the course:	English+ Arabic			
9-	System of Study:				
10-	Mode of delivery:				
11-	Location of teaching the course:	Lecture hall No.8			

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III. Course Description:
This course provides the basic skills to carry out the sea waves analyses and designs that are often encountered in engineering practice. **Students are exposed to the basic facts concerning waves to use them to**, avoid hazardous conditions, and operate with a minimum of danger if such conditions can-not be avoided. Related branches and applications include hydraulic ad fluid mechanics.

IV. Intended learning outcomes (ILOs) of the course:
Brief summary of the knowledge or skill the course is intended to develop:
a.1 Demonstrate the coastal engineering practice natural phenomenon of the tides and the capacity of the Yemeni ports. A1
a.2 Describe the principles of design waves breakers and waves theory A3
b.1 Identify the wave theory and causes of the wave breakers failures B.1
b.2 Carryout the risk analysis and stability analyses of the wave's breakers B2
c.1 Design the waves breakers and harbor components. C.2
c.2 Apply the mathematical model to identify the waves parameters and type of wave breakers C3
d.1 **Write** a report on efficiency of the harbors in Yemen. D1

V. Course Content:

- Distribution of Semester Weekly Plan Of course Topics/Items and Activities.

A – Theoretical Aspect:

Order	Topics List	Sub Topics List	Week Due	Contact Hours
1	Introduction	Introduction of coastal engineering practices and natural phenomenon of the tides.	1	2
2	Wave Theories	Airy wave theory Stokes, nonlinear wave theories.	2	2
3	Selection of Design Waves	Available methods, statistical probability and other data sources	3	2

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4	Tides and Surges	Tidal forcing Introduction to storm surges	4	2
5	Waves reflection and refraction	Non-braking wave Breaking waves Pressure forces affected by Breaking and Non-breaking waves	5,6	4
6	Materials used in marine structures	Describe the types of the building materials and design techniques	7	2
7	Midterm Exam		8	2
8	Wave Breakers	Vertical and rubble mound breakwaters Functional design, wave forces Diffraction. transmission Overtopping, Probabilistic approach to stability. Risk analyses Special types of breakwaters Pneumatic, Hydraulic Submerged, Floating Structural Design, Concrete armor units Stone armor, Underlayer sizing Design of crown walls, Scour	9,10	4
9	harbor planning	Planning of the various components of a harbor such: entrance channel, break water, turning basin, shelter basin, pier, wharf, quay, dry dock, wet dock and jetty.	11,12,13,14,15	10
10	Final Exam		16	32
Number of Weeks /and Units Per Semester			16	32

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VI. Teaching strategies of the course:

The course consists of twelve lectures. Lectures should be considered as interactive elements and not as a one-way process of transferring knowledge. Feedback from students will be taken into consideration in order that any lecture objectives which has been inadequately covered may be reviewed in a subsequent session.

VII. Assignments:

No	Assignments	Aligned CILOs(symbols)	Week Due	Mark
1	Characteristic and capacity one of the Yemeni Harbor	a1,a2,b2,c1,c2	3	2.5
2	Wave Theories, Selection of Design Waves, Waves breakers	b1,b2,c2,c2	9	2.5

VIII. Schedule of Assessment Tasks for Students During the Semester:

Assessment	Type of Assessment Tasks	Week Due	Mark	Proportion of Final Assessment
1	Written assignment	3 ,9	7.5	5
2	Quizzes.	4	7.5	5
3	Mid-term exam.	7 th	30	20
4	Final-exam.	10	7105	70
	Sum		100	100%

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IX. Learning Resources:
<ul style="list-style-type: none"> • Written in the following order: (Author – Year of publication – Title – Edition – Place of publication – Publisher).
1- Required Textbook(s) (maximum two).
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2- Essential References.
<p>Port Engineering: Planning, Construction, Maintenance, and Security Hardcover – February 16, 2004 by Gregory P. Tsinker (Editor) 1 customer review ISBN-13: 978-0471412748 ISBN-10: 0471412740</p>
3- Electronic Materials and Web Sites etc.
<p>http://www.khuisf.ac.ir/Dorsapax/Data/Sub_118/File/Hydraulic%20Structures_4th%20edition_.pdf</p>

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X. Course Policies:	
Unless otherwise stated, the normal course administration policies and rules of the Faculty of ----- apply. For the policy, see: -----	
1	Class Attendance: The students should have more than 75 % of attendance according to rules and regulations of the faculty.
2	Tardy: The students should respect the timing of attending the lectures. They should attend within 10 minutes from starting of the lecture.
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