



**Civil Engineering Department**  
**College of Engineering**  
**Second Semester (182)**  
**Course Syllabus**

Course code	Title	Credit Hr.
CE 310	Introduction to CE Design	1-0-1

<b>Instructor:</b>	Dr. Moruf O. Yusuf
<b>Office Number:</b>	2223, UOHB Main Campus
<b>Office Ext.:</b>	1143
<b>E-Mail:</b>	<a href="mailto:moruf@uhb.edu.sa">moruf@uhb.edu.sa</a>

**Office hours:**

Sunday	Monday	Tuesday	Wednesday	Thursday
11:00-11:50 AM	10:00-10:50 AM	09:00-09:50 A.M	10:00-10:50 AM 01-01:50 PM	01-01:50 PM

\*Or by appointment

**Designation: Required**

**1. Course Description**

A broad introduction to design in all four disciplines; design landscape and requirements related to data, information, specification and codes, methods and tools, design considerations and constraints; issues related to safety, economy and impact; professional ethics and responsibility; design drawings; project management principles, a small-scale project work to complement students understanding.

**2. Textbook**

Engineering Design: A Project-based Introduction; by Dym, C.L., Little, P., Orwin, E.J, 4<sup>th</sup> ed. Wiley.

Head First PMP by Greene, Jennifer and Stellman, Andrew, O'Reilly Media, 3<sup>rd</sup> ed. Inc.

**3. Prerequisite:**

None

**4. Course Objectives**

The overall objectives of this course are to:

- i. To understand basic concept of CE design principle
- ii. To understand quantity and specification of basic construction materials using CE drawings
- iii. To understand basic principles of project management
- iv. To understand basic contract administration and control



## 5. Course Outcomes

After successful completion of this course, students should be able to:

- i. To understand basic principle of design of engineering projects (knowledge)
- ii. To explain the roles of parties to contract administration, professional ethics and safety.
- iii. To able to take civil engineering quantities and understand material specification (knowledge/cognitive)
- iv. To understand basis of work breakdown schedule, project management and time value of money. (knowledge)

## 6. Mapping Between Course Outcomes and Student Outcomes

Student outcomes \ Course outcomes	Student outcomes										
	a	b	c	d	e	f	g	h	i	j	K
i		✓	✓	✓	✓						
ii				✓		✓	✓				
iii	✓	✓	✓		✓						
iv	✓			✓					✓		

## 7. Major Topics Covered in the Course

No.	Content	Chapter	Contact Hours
1	Introduction to Design in all four areas of CE (Water, Environmental, Transportation and Building/Structural Engineering)	1.1-1.5	1
2	Contracts and Roles of Parties to Contract	1.1-1.5	1
3	Defining a Design process, Methods and Tools	2.1-2.6	1
4	Technical Design Communication and Engineering Drawing	11	1
3	Cost Estimation (Labor, Materials and Overhead) and element of Quantity and specification in Building Project	12-13.1	3
4	Time values of Money	13.2	2
5	Professional Ethics in Design	15	1
6	Managing a Project	16	1
7	Term Project	-	1



## 8. UOHB Rules and Regulations:

### A. Attendance in the class (or Lab):

Attendance in the class will be strictly observed starting from the first day of classes. Students shall be warned after 1 and 2 unexcused absences. However, after 4 unexcused or 5 total absences (excused and unexcused absences), DN grade shall be awarded. Student shall be solely responsible for his DN grade and its accompanied repercussion or negative effects. The conditions are spelt out in the table below.

	Number of unexcused absences			Total absences (excused* + unexcused)
	Warning I	Warning II	DN	DN
15 course lectures per semester	1	2	4	5

The following should be noted

- i) Students must bring text book, notebook, calculator and pen to the class
- ii) Attendance in the classes will be taken within five minutes of the beginning of the class. **Any student who arrives class within 5 minutes from the start of class will be marked as late. If the student is marked late 3 times, then this is equivalent to 1 unexcused absence. Student who arrives after 5 minutes is considered absent with no excuse.**

#### \*Note:

Officially authorized excuse of absences must be obtained from Deanship of Student Affairs and presented to the instructor **no later than two days** following the resumption of class attendance.

**B. Waiting Time:** If the instructor is late, students are expected to wait for 15 minutes and then they are free to go

### C. Academic Dishonesty:

Academic misconduct committed either directly or indirectly by an individual or group is subject to disciplinary action. Prohibited activities include but not limited to the following practices:

- **Cheating**, including but not limited to unauthorized assistance from material, people, or devices when taking a test, quiz, or examination; writing papers or reports; solving problems; or completing academic assignments.
- **Plagiarism**, including but not limited to paraphrasing, summarizing, or directly quoting published or unpublished work of another person, including online or computerized services, without proper documentation of the original source.
- **Impersonation** or taking an exam in proxy.
- Providing others with information and/or answers regarding exams, quizzes, homework or other classroom assignments unless explicitly authorized by the instructor.

### D. Penalties for Violations of Academic Integrity



Having witnessed or otherwise identified an apparent violation of the academic integrity policy, the faculty member may either impose or recommend an appropriate penalty, depending upon the seriousness of the offense.

The instructor may impose any one of the following penalties:

- a written notice of warning, with a copy placed in the student's file with the advisor;
- a reduced grade on the assignment;
- a grade of F (zero if graded numerically) for the assignment;
- a reduced grade for the course;
- a grade of F for the course.

#### E. Class/Lab Rules

- Use of **mobile phones** is **not allowed** during the class period.
- **Smoking, eating or drinking** is **not permitted** at any time.
- **Excuse** must be sought and granted before **leaving the class** for any reason.
- Lab dress code: boot, trousers and shirt

#### F. Assignments and Quizzes

- Problems or questions will be assigned regularly. Students will be required to solve these problems and submit the solutions within one week or as may be determined by the instructor.
- No assignments will be accepted after its due date.
- There will be no makeup quiz.
- Students should make every effort to meet all announced deadlines. Any constraint to meet the deadline shall be reported to the instructor for him to determine whether an extension is required or not.

#### G. Communication

The students shall constantly use the blackboard to communicate among themselves and with the instructor. Students are encouraged to check their e-mails daily to check whether there exists any special instruction or information from the instructor.

#### 9. Schedule of Classes

Week	Date	Topics	Section/Ref.	Assessments
1	09/01/19	Introduction to design in all four areas of CE	1.1-1.5	
2	16/01/19	Site feasibility studies and problems identifications	Notes	HW 1
3	23/01/19	Surveying, Engineering drawings and interpretations	Notes	Quiz 1
4	30/01/19	Defining a design process	2.1-2.6	HW 2
5	06/02/19	Understanding customers' design requirements - Objective, constraints, function and means (OCFM)	3.1-3.3	Quiz 2
6	13/02/19	Methods and tools (specification, codes and references)	Note	HW 3
		<b>Major 1 Exam: (Wednesday: 13 Feb. 2019), 6:00 PM – 8:00 PM</b>		



7	20/02/19	Contracts administration and stakeholders' involvements	Note	Quiz 3
8	27/02/19	Cost Estimation (Labor, Materials and Overhead) and element of Quantity and specification in Building Project	12	HW 4
9	06/03/19	Cost Estimation (Labor, Materials and Overhead) and element of Quantity and specification in Building Project	13.1	Quiz 4
10	13/03/19	Time values of Money and Return on Investment (ROI)	Notes	-
11	20/03/19	Project Management Principles (Project charter, Business case, WBS and Scheduling)	16	Quiz 5
		<b>Major 2 Exam (Wednesday: 20 March 2019), 06:00 – 08:00 PM</b>		
13	27/03/19	Professional Ethics in Design	17	HW 5
14	03/04/19	Review		
15	10/04/19	Term Project Presentation: Computation of materials and cost estimation of any design of CE projects	-	

#### Schedule of Exams for CE 310: Structural Materials

Examination	Major I	Major II	Final Exam
Week No.	05	11	16-17
Date	Feb. 13, 2019	March 20, 2019	See final exam schedule

#### Note:

- Make-up exam will be given only in case the affected student has an approved medical excuse authorized by the Student Affairs Unit and the University Rector
- Any potential conflicts with other exams must be reported **in advance** for adequate adjustment.

#### 11. Assessment Plan for the Course

Assessment Policy	%	Letter Grading Scale	
		Marks	Letter Grade
Quizzes	10		
Homeworks	10	95 – 100	A+
Lab reports	10	90 – less than 95	A
Term project	10	85 – less than 90	B+
First major exam	15	80 – less than 85	B
Second major exam	20	75 – less than 80	C+



Final exam	25	70 – less than 75	C
<b>Total</b>	<b>100</b>	65 – less than 70	D+
		60 – less than 65	D
		Less than 60	F

## 12. ABET Category Contents

Engineering Science	15%	(0.45 credit hours)
Engineering Design	15%	(0.45 credit hours)
Engineering Applications	70%	(2.1 credit hours)

**Prepared/Modified by:** Dr. Moruf O. Yusuf      **Signature:** \_\_\_\_\_      **Date:** 06-01-2019