Course Number and Name	CE214-3 Materials of construction
Credits hours	3 Credits hours
Contact hours	5 Contact hours; 2 for lecture, 1 for tutorial and 2 for practical
Instructor/s name/s	Dr. Abdullah Zeyad
Textbook	M. L. Wilson (Author), S. H. "Kosmatka, "Design and Control of Concrete Mixtures", 15th Edition, (Hardcover, 2016).
Other supplemental materials	1. Edward Allen and Joseph Iano, "Fundamentals of Building Construction: Materials and Methods", (Hardcover - Dec 10, 2018). 2. Mamlouk, Michael S. and Zaniewski John P. M, "Materials for Civil and Construction Engineers", 2nd edition, Pearson and Printice Hall, USA, 2016. 3. Lecture notes. 4. Laboratory Manual.
Specific course information	
a. Catalog description	This course provides to students the basics of the knowledge to general properties of construction materials. In addition to providing the students with the important basics to learn about the characteristics and components the ferrous metals (steel rebar), cement, aggregates, additives (admixtures) and concrete, as well as concrete mix design, in addition to mixing, casting and curing in hot weather. Additional to providing the student with the necessary skills to conduct tests the steel bar, aggregates, and fresh and hardened concrete. Teaching aids such as lectures, presentation and discussion are used to teaching the course. The students are assessed through exams, assignments and laboratory reporting.
b. Prerequisite	CE311-3: Strength of Materials
c. Required / Elective	Required
Specific goals for the course	
Course Learning Outcomes (CLOs)	By the end of this course, the student will be able to: 1. Inspect the concrete properties using fresh and hardened concrete standardized tests. 2.Discuss the characteristics and components of reinforced concrete materials. 3.Design concrete mixtures according to the American concrete institute (ACI). 4.Outline the steps of concrete production.
Student outcomes that addressed by the course	The following student outcomes are addressed by the course: SO1: An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics. SO2: An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors

	SO3: An ability to communicate effectively with a range of audiences. SO4: an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts SO6: An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

Topics to be covered

Topic	Number of weeks
Principal Properties of Construction Materials	1
Reinforcement bars (rebar)	2
Portland Cement	1
Aggregate of Concrete	1
Admixtures for Concrete	1
Concrete Mix Design	1
Concrete Production	1
Fresh Concrete	1
Concreting in hot weather	1
Hardened Concrete	1
Hardened Concrete Tests on site	1

Schedule of Assessment Tasks for Students During the Semester

Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week due	Proportion of Total Assessment
Homework	2^{ed} to 14th	5%
Quizzes	3th & 9th	5%
Midterm-exam I	7th	15%
Midterm-exam II	12th	15%
Reports of Lab	2^{ed} to 14th	10%
Term Project	15th	20%
Final Exam	16th	30%

CLO-SO Map							
	S01	**S02**	**S03**	**S04**	**S05**	**S06**	**S07**
CLO 1	√	√	√			√	

CLO 2				√			
CLO 3							
CLO 4							
CLO 5							
CLO 6		√	√			√	
CLO 7							
CLO 8							
CLO 9							