Course Number and Name	CE215-3: Structural Analysis 1
Credits hours	3 Credits hours
Contact hours	4 Contact hours; 2 for lecture, 2 for tutorial and - for practical
Instructor/s name/s	Dr. Ali Eltom
Textbook	Hibbeler R.C.; "Structural Analysis", Tenth Edition., Prentice Hall, 2017.
Other supplemental materials	1- *AslamKassimali, Structural Analysis, 4th edition, CengageLearning, 2011* 2- *Wang, C.K, Intermediate Structural Analysis, 7th Ed., Mc Graw Hill, 2008.* 3- *Leet, K. .and Uang, C.M., "Fundamental of Structural Analysis", 2nd edition, McGraw-Hill , 2005* 4- *MegsonT.H.G. "Structural and Stress Analysis", Butterworth-Heinemann, 2000* 5- Lecture notes by the Lecturer.

Specific course information

a. Catalog description	This course aims to introduce general review on types of structures, loads, axes systems, and displacements resulting from resistance. Analysis of simply supported beams (straight, inclined and beams with intermediate hinges) as well as analysis of plane frames under different loads. Analysis of arches, calculating deflection of simple supported beams using Conjugate Beam Method. Analysis of continuous beams using three-moment equation. Drawing influence lines for determinate structures.
b. Prerequisite	*CE213-3 / 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. Students can **state** the knowledge related to determinate structure such as beams, trusses, and frames using analytical methods. 2. Students are able to **analyze** determinate structures using equilibrium equations and pre-knowledge of math and science. 3. Students are able to **outline** influence Lines diagrams for determinate beams 4. Students are able to **develop** reports, assignments, discussions and presentations individually and in team groups.
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. 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

SO5: an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

Topics to be covered

Topic	Number of weeks
Orientation, presenting course content and references, Revision of Pre-requisite topics.	1
Classification of various determinate-indeterminate structures	1
Analysis of inclined beams under different loads types.	2
Analysis of beams with internal hinges under different loads types.	2
Analysis of plane frames with different support and different load types.	2
Calculate deflection of simple supported beams using Conjugate Beam Method.	3
Analysis of Continuous Beams using Three Moment Equation	2
Drawing influence lines for determinate structures	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	weekly	10
Quizzes	weekly	10
Midterm-exam I	7	15
Midterm-exam II	13	15
Term Project	-	20
Final Exam	16	30

CLO-SO Map

	S01	S02	S03	S04	S05	S06	S07
CLO 1	√						
CLO 2	√	√					
CLO 3	√	√					
CLO 4		√	√	√	√		