



**The University of Jordan
School of Engineering
Course Syllabus**

Course Title:	Computer Applications Engineering	Course Number:	0901303
Department:	Civil Engineering	Designation:	Elective
Prerequisite(s):	Reinforced Concrete II	Instructor's Office:	
Instructor:	Dr. Nasim Shatarat	Instructor's Office:	
Instructor's e-mail:	n.shatarat@ju.edu.jo	Class Room:	Comp. Lab
Office Hours:	M, W (8:30-9:30) (12:30-2:00)		
Time:	M, W (9:30-11:00)		
Course description:	This course reviews the fundamentals of the stiffness and finite elements methods, introduces the analysis and design of different elements in different types of structures using available computer package(s).		
Textbook(s):	Non		
Other required material:	Non		
Course objectives:	The objective of the course is to provide an overlook over the available structural analysis packages. The course will demonstrates the steps followed to produce the structural analysis and design of different types of structures; steel and concrete buildings, bridges, water tanks and trusses.		
Topics covered:	<ul style="list-style-type: none">- Analysis of prismatic and non-prismatic continuous beams (General Loading, Temperature loading, ...).- Analysis of prismatic and non-prismatic plane frames.- Analysis of prismatic and non-prismatic 3D frames.- Staged construction (frames under construction, cable stayed bridge,...etc)..- Analysis of slabs.- Analysis of bridges (influence line,..).- Analysis of arches and domes .- Hydrostatic pressure (Water Tanks).- Introduction of concrete and steel design		
Class/laboratory schedule:	2 class sessions each week; 75 minutes each		
Grading Plan:	First Exam (20 Points)	Mon. 13 - March- 2017	Class time
	Second Exam (20 Points)	Mon. 17 - April- 2017	Class time
	Final Exam (50 Points)	Will be announced by the registrar	
	Others (10 Points)	Project	
General Notes:	Attendance is required. Students will be administratively dropped from the course for more than 15% unexcused absences. All students are expected to arrive to class on time and prepared to work. Students absent from lectures will be responsible for all material covered during the sessions. Students are expected to do their own work individually. Students are expected not to share their homeworks or projects with others.		

Course contribution:

Professional Component	Course Contribution
General Education	None
Basic Science and Mathematics	None
Engineering Science	Students will demonstrate the ability to apply concepts of engineering mechanics and structural analysis
Engineering Design	Students will demonstrate the ability to size structural steel and concrete components for applicable strength and serviceability limit states according to the current codes

Relationship to program outcomes:

ABE T a-k		CE Program Outcomes
a	√	An ability to apply knowledge and principles of mathematics, science, and engineering to solve engineering problems
b		An ability to design and conduct experiments, as well as to analyze and interpret data.
c	5%	An ability to design a system, component or process to meet desired needs.
d		An ability to function on multi-disciplinary teams
e	50%	An ability to identify, formulate, and solve engineering problems.
f		An understanding of professional and ethical responsibility
g		An ability to communicate effectively developed through report writing and in class presentations.
h		The broad education necessary to understand the impact of engineering solutions in a regional and local context
i		A recognition of the need for, and ability to engage in life-long learning
k	45%	An ability to use the techniques, skills, and, modern engineering tools necessary for engineering practice.

ABET Program Criteria for Civil Engineering Achieved:**CIVIL ENGINEERING PROGRAM CRITERIA**

	Programs must demonstrate that graduates have:
	A. proficiency in mathematics through differential equations, probability and statistics, calculus-based physics, and general chemistry;
√	B. proficiency in a minimum of four (4) recognized major civil engineering areas;
	C. the ability to conduct laboratory experiments and to critically analyze and interpret data in more than one of the recognized major civil engineering areas;
√	D. the ability to perform civil engineering design by means of design experiences integrated throughout the professional component of the curriculum; and
√	E. an understanding of professional practice issues.

Prepared by: Dr. Nasim Shatarat

Date: 29/1/2017