



**The Hashemite University**  
**Faculty of Engineering**  
**Civil Engineering Program**  
**Course Syllabus**



<b>Course Title:</b>	Computer Application in Structural Engineering	Course Number: 110401513
<b>Designation:</b>	Elective	<b>Prerequisite(s):</b> 110401315
<b>Instructor:</b>	Dr. Hasan Katkhuda	<b>Instructor's e-mail:</b> hasan@hu.edu.jo
<b>Office Hours:</b>	11:00 – 12:00: Sun., Tue. & Thurs., 8:30 – 9:30: Mon. & Wed.	

**Course Description (catalog):** 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) and/or Other Supplementary Materials:**

None

**References:**

None

**Major Topics Covered:**

Topics	No. of Weeks	Contact hours*
Review of stiffness method	1	3
Beams with uniform and concentrated loads	1	3
Frames and trusses	2	6
Non-prismatic members	1	3
Frames on footings	1	3
3D Frames	3	9
One and two way loadings on slabs	2	6
Finite element-slabs	2	6
Finite element-footings and tanks	2	6
<b>Total</b>	<b>15</b>	<b>45</b>

\*Contact hours include lectures, quizzes and exams

**Specific Outcomes of Instruction (Course Learning Outcomes):**

**After completing the course, the student will be able to:**

1. Model any type of structures such as Beams, Frames, Trusses, Buildings, and Tanks. (a, e, k)
2. Analyze any type of two and three dimensional structures (a, e, k)

**Student Outcomes (SO) Addressed by the Course:**

#	Outcome Description	Contribution
<b>General Engineering Student Outcomes</b>		
(a)	an ability to apply knowledge of mathematics, science, and engineering	L (10)
(b)	an ability to design and conduct experiments, as well as to analyze and interpret data	
(c)	an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability	
(d)	an ability to function on multidisciplinary teams	
(e)	an ability to identify, formulate, and solve engineering problems	H(45)
(f)	an understanding of professional and ethical responsibility	
(g)	an ability to communicate effectively	
(h)	the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context	
(i)	a recognition of the need for, and an ability to engage in life-long learning	
(j)	a knowledge of contemporary issues	



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(k)	an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.	H(45)
<b>H=High, M= Medium, L=Low</b>		

**Grading Plan:**

1st Exam	30 Points	<b>4/3/2018</b> [ class time]
2nd Exam	30 Points	<b>1/4/2018</b> [ class time]
Final exam	40 Points	<b>29/4/218</b> [ class time]

**General Notes:** Beware of Plagiarism: copying and handing in for credit someone else's work  
Any plagiarism case will result in an automatic 'F' for the course

**Prepared by:** Dr. Hasan Katkhuda **Date:** 28<sup>th</sup> Jan. 2018