



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

Course Title:	Bridge Engineering	Course Number:	0901555
Department:	Civil Engineering	Designation:	Elective
Prerequisite(s):	Reinforced Concrete II and Steel Structures		
Instructor:	Dr. Nasim Shatarat	Instructor's Office:	
Instructor's e-mail:	n.shatarat@ju.edu.jo		
Office Hours:	S, Tu, Th (10:00-11:00), M, W(11:00-12:00)		
Time:	M, W (8:00-9:30)	Class Room:	CE104
Course description:	This is an introductory course to design of Highway Bridges in accordance with AASHTO LRFD Bridge design specifications. Topics covered include classification of bridges, structural components, Bridge loading, analysis and design of the different Bridge components.		
Textbook(s):	R.M. Barker and J.A. Puckett, Design of Highway Bridges, John Wiley and Sons, Inc., New York, 2013.		
Other required material:	AASHTO LRFD Bridge Design Specifications, 7th Edition, 2014 Washington State Department of Transportation Bridge Design Manual Caltrans Bridge Manuals PCI Bridge Design Manual, 3rd Edition, 2014 Manual of Steel Construction, 14 th Edition, American Institute of Steel Construction		
Course objectives:	<ol style="list-style-type: none">1. Students will gain a basic understanding of the planning for a highway bridge.2. Students will learn the types of loads on highway bridges, how to determine these loads and their combinations.3. Students will learn how to analyze and design bridge components including deck superstructure, deck girders, piers, abutments and bearings.4. Students will learn how to utilize commercial software in the analysis of highway bridges		
Topics covered:	<ol style="list-style-type: none">1. Introduction to Highway Bridges : Planning and types of Bridges2. Specifications, Loads and Load Combinations3. Deck Superstructures Analysis and Design4. Piers5. Abutments6. Bearings		
Class/laboratory schedule:	2 class sessions each week; 75 minutes each		

Grading Plan:	Short Exam	(20 Points)	Wednesday .16- March.-2016
	Mid-term Exam	(30 Points)	Wednesday .20- April.-2016
	Final Exam	(50 Points)	Will be announced by the registrar
	Others	(10 Points)	Homework and Attendance
		Bonus	

General Notes: Attendance is required. Students will be administratively dropped from the course for more than 15% unexcused absences. Homework is to be done neatly. Late homework will not be accepted and a grade of zero will be assigned. Students must answer all questions. Marks will be deducted for not answering all questions. Homework must be placed on the instructor's table on the due date. Students are expected to do their own work individually. Students are expected not to share their homeworks with others.

Course contribution:

Professional Component	Course Contribution
General Education	None
Basic Science and Mathematics	Students will use the methods of solving differential equation in deriving the critical buckling load in columns.
Engineering Science	Students will demonstrate the ability to apply concepts of engineering mechanics, including basic principles of elastic beam theory, and column buckling.
Engineering Design	Students will demonstrate the ability to size structural steel components for applicable strength and serviceability limit states according to the current AISC LRFD Specifications.

Prepared by: Dr. Nasim Shatarat

Date: 26/12/2017