



Jordan University of Science and Technology
Faculty of Engineering
Civil Engineering Department

CE910 Advanced Analysis And Design Of Bridge - JNQF Level: 10

Second Semester 2024-2025

Course Catalog

3 Credit Hours. Analysis and design of suspension and cable-stayed bridges. Economic consideration, aesthetic consideration, and geometric consideration. Analysis and design of deck slab, determination of moments and shears. Analysis and design of cables, girders, connections, towers, foundations, and erection procedure. Term paper dealing with selected advanced related topics will be required.

Teaching Method: On Campus

Text Book

Title	Design of Highway Bridges: An LRFD Approach
Author(s)	1. Barker, R. M and Pukett, J. A.
Edition	2nd Edition
Short Name	Ref#1
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref#2	AASHTO LRFD Bridge Design Specifications	American Association of State Highway and Transportation Officials	14th Edition	

Instructor

Name	Prof. Rajai Al rousan
Office Location	C2L3
Office Hours	
Email	rzalrousan@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Mon, Wed : 11:00 - 12:30 Room: C2008

Tentative List of Topics Covered		
Weeks	Topic	References
Weeks 1, 2	Economic consideration, aesthetic consideration, and geometric consideration	From Ref#1
Weeks 3, 4, 5	Analysis and design of deck slab and determination of moments and shears	From Ref#1 , From Ref#2
Weeks 6, 7, 8, 9	Analysis and design of girders and determination of moments and shears	From Ref#1 , From Ref#2
Weeks 10, 11, 12, 13	Analysis and design of cables, connections, towers, foundations, and erection procedure	From Ref#1 , From Ref#2
Weeks 14, 15, 16	Analysis and design of suspension and cable-stayed bridges	From Ref#1 , From Ref#2

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Identify the economic consideration, aesthetic consideration, and geometric consideration [1L10K1]	10%	Mid-Exam
Identify the analysis and design of deck slab and determination of moments and shears [1L10S1, 1L10S2]	20%	Mid-Exam
Identify the analysis and design of girders and determination of moments and shears [1L10S1, 1L10S2]	20%	Mid-Exam
Identify the analysis and design of cables, connections, towers, foundations, and erection procedure [1L10C1, 1L10C2]	25%	Final Exam
Identify the analysis and design of suspension and cable-stayed bridges [1L10C3, 1L10C4, 1L10C5]	25%	Final Exam

Relationship to NQF Outcomes (Out of 100%)							
L10K1	L10S1	L10S2	L10C1	L10C2	L10C3	L10C4	L10C5
10	20	20	12.5	12.5	8.33	8.33	8.33

Evaluation	
Assessment Tool	Weight

Mid-Exam	50%
Final Exam	50%

Policy	
Plagiarism	<p>Plagiarism is a serious academic offense. Plagiarism is the use of someone else's ideas, words, projects, artwork, phrasing, sentence structure or other work without properly acknowledging the ownership (source) of the property (item). Plagiarism is dishonest because it misrepresents the work of someone else as one's own. It is intellectual theft as it robs others of credit for their work. Plagiarism takes many forms including:</p> <ol style="list-style-type: none"> 1. Using someone else's words without putting those words in quotation marks and providing full information about their source, sufficient information so that another person could easily locate the words that are being quoted, whether it is in an article, a book, or on the web. 2. Using unique, original ideas, phrases, sentences, paragraphs, or other materials, etc. from a single source or a variety of sources such as a text, journal, web page, electronic source, design, artwork, etc. in one's work without citing all sources. For a student found plagiarizing, the punishment will be a failing grade in the assignment without the right to redo the assignment up to a failing grade
Assignments	University policy is that assignments are due on the date assigned. Instructors may refuse to accept late assignments or lower the grade that would be otherwise given
Attendance	<p>University policy is that students are to attend all classes and to arrive on time. Verified emergencies may require an absence or delay, but habitual tardiness or absence affects your learning and disrupts the class. Your presence is important since student contributions are a significant part of classroom activity and absence deprives others of your contributions.</p> <p>According to current University Regulations for attendance, Student with 2 absences: receives 5% warning Student with 3 absences: receives 10% warning Student with 5 absences: receives 20% and fails the course</p>
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Mobile Phones	All mobile phones, pagers and/or other communication devices should be turned off before entering the classroom
Diversity and the Use of English	English is the common language of the JUST campus, the use of which includes everyone. It is the only language to be used in the classroom. JUST brings together students and faculty from diverse cultural and linguistic backgrounds, which is one of the strengths of the university. This diversity provides an opportunity to share our different experiences and enlarge our understanding of the world.