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| **Identification** | **Subject** | Fundamentals of Steel design (3 Credits) | | |
| **Department** | Civil Engineering | | |
| **Program** | Undergraduate | | |
| **Term** | Fall 2017 | | |
| **Instructor** | Ali Atefi | | |
| **E-mail:** | aatefi@khazar.org | | |
| **Phone:** | 050 658 9536 | | |
| **Classroom/hours** |  | | |
|  | **Office hours** |  | | |
| **Prerequisites** | Strength of Materials - Structural Analysis | | | |
| **Language** | English | | | |
| **Compulsory/Elective** | Compulsory | | | |
| **Description** | This course deals with the design of steel parts and connections used to build structures. This is an important field in civil engineering and applicable for many purposes. | | | |
| **Required textbooks and course materials** | *“Structural Steel design” by Jack C. McCormac and Stephen F. Csernak, Fifth edition, Prentice hall press (2011).* | | | |
| **Course website** |  | | | |
| **Course outline** | General principals, Definition of the types of steel and international standards, design conditions and load combinations, design of axial members, shear and flexure in parts, torsion, columns, Base plates, seismic design are the most important subjects in steel design | | | |
| **Course objectives** | The objective of this course is that the student acquires the basis of the Strength of Materials and Structural analysis. In this way, the student will be able to design different types of elements for construction procedure for buildings with steel structures. For this purpose, many practical and applicable examples will be analyzed. | | | |
| **Learning outcomes** | * Understand the basic concepts of steel types and design considerations. * Perform design of beams, columns, axial elements subjected to gravity and lateral loads using AISC code, * Understand the analyze and design procedure of a regular building. | | | |
| **Teaching methods** | **Lecture** | | | x |
| **Experiential exercise** | | | x |
| **Assisted work** | | | x |
| **Assisted lab work** | | | x |
| **Others** | | |  |
| **Evaluation** | **Methods** | | **Date/deadlines** | **Percentage (%)** |
| **Midterm Exam** | |  | 30 |
| **Class Participation and Attendance** | |  | 15 |
| **Quizzes** | |  | 15 |
| **Lab Exercises** | |  | - |
| **Project (3 phases)** | |  | - |
| **Final Exam** | |  | 40 |
| **Total** | |  | 100 |
| **Policy** | • NO CELL PHONES are allowed during lecture and lab sessions. PLEASE turn them off before lecture! (Not silent or vibrating mode)  • No late assignments will be accepted without prior arrangement with the instructor for acceptable excuses. Medical and family emergency will be considered on case-by-case basis.  • No late homework will be accepted. Homework is to be completed on an individual basis. Students may discuss homework with classmates, but students are responsible for your own work. If students have consulted classmates, please note the individuals name on the top of students’ assignment.  • Quizzes may be given unannounced throughout the term and will count as one homework. There will be no make-up quizzes.  • No make-up exams. If students miss an exam, a zero score will be assigned to the missed exam.  • If students should miss class due to personal emergency or medical reasons, please notify the instructor by email immediately. A doctor’s note will be required for make-up work.  • Students are responsible for completing the reading assigned from the textbook related to the covered topics and for checking email regularly for important information and announcements related to the course.  • University policy on academic honesty concerning exams and individual work will be strictly enforced.  • BE ON TIME! | | | |

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| Tentative Schedule | | | |
| Week | **Date/Day** (Tentative) | Topics | Textbook/Assignments |
| 1 |  | Introduction and General Principles | Chapter 1 |
| 2 |  | Loads and Methods of steel design | Chapter 2 |
| 3 |  | Design for Tension | Chapter 3 |
| 4 |  | Design for Tension | Chapter 3 |
| 5 |  | Design for compression | Chapter 4 |
| 6 |  | Design for compression | Chapter 4 |
| 7 |  | Design for compression | Chapter 4 |
| 8 |  | Midterm Exam, | - |
| 9 |  | Design of Base Plates | Chapter 5 |
| 10 |  | Design of beams | Chapter 6 |
| 11 |  | Design of Beams | Chapter 6 |
| 12 |  | Design of connections (Hinged) | Chapter 7 |
| 13 |  | Design of connections (Fixed) | Chapter 7 |
| 14 |  | Design of connections (Bolted) | Chapter 7 |
| 15 |  | Design of connections (Special) | Chapter 7 |
|  |  | Final Exam |  |

This syllabus is a guide for the course and any modifications to it will be announced in advance.