

**Salahaddin University - Erbil**  
**College of engineering - Civil Department**

|                                    |  |  |                        |  |
|------------------------------------|--|--|------------------------|--|
| Module Name                        | Steel Design   |  | Code                   | 1136   |
| Course Status                      | Elective   | Duration:  | 15 week – one semester | Credit point<br>5                            |
| Pre-requisites                     | Mechanics of materials   | Total Work Load  | 135 hr                 | Class Attendance 60 hr<br>Self Studies 75 hr |
| Course Description                 | Introduction, design of steel tension members, columns, beams, beam-columns, plate girders, supports, welded and bolted connections using the AISC specifications based on the theory of steel design of buildings using the Load Resistance and Factor Design (LRFD) method (SI Units).   |  |                        |  |
| Course Objectives                  | <p>To acquaint the student with the theory of steel design of buildings using the Load Resistance and Factor Design (LRFD) method .</p> <p>Upon completion of the course, the student should be able to:</p> <ol style="list-style-type: none"> <li>1. Design steel tension members, columns, beams, beam-columns, plate girders , supports and welded and bolted connections using the AISC specifications.</li> <li>2. Answer structural steel design problems in the exams; and</li> <li>3. Prepare students for lifetime learning as structural steel design evolves, and to form a foundation for possible post graduate studies in the subject.</li> </ol>               |  |                        |  |
| Learning Outcome                   | This course teaches the engineering thought process through the design of steel structures. The course uses fundamentals of statics, mechanics of materials, and structural analysis and applies them to the design of structural members. Students will gain a broad understanding of structural engineering for steel buildings. With the successful completion of the course, the student should be able to analyze and design tension members, concentrically and eccentrically loaded compression members ,column base plates, welded and bolted connections, laterally braced and unbraced beams and Plate girders, beam-columns and finally Learn the art of detailing. |  |                        |  |
| Literature & text Books            | 1. AISC (American Institute of Steel Construction) Manual. Manual of Steel Construction LRFD Volume I & II (Metric conversion of the second edition). 2. William T. Segui " Steel Design ".  |  |                        |  |
| Type of Teaching                   | Theory Lectures  | Tutorial   | Practical              |  |
|                                    | 3 hr   | 1 hr   | 0 hr                   |  |
| Evaluation Profile                 | Students are required to do first midterm exam on 8 week, class room activities, quizzes, home works and final exam on week 15th. So that the final grade will be based upon the following criteria:   |  |                        |  |
|                                    | Course period efforts (out of 40%)   | Midterm Exam (90 min written exam at week 8)   |                        | 20 %   |
|                                    |  | Short exams (Quiz) at least 2 during the course period (one of them must befor week 8) |                        | 10 %   |
|                                    |  | assignments and home works at least 2 during the course period                         |                        | 6 %  |
|                                    |  | Class Room Activities, Reports and Seminars  |                        | 4 %  |
|                                    |  | -----  |                        | ----   |
| Course period efforts (out of 60%) | Written exam (120 min written exam week 15)  |  | 60 %                   |  |
|                                    | -----  |  | ----                   |  |