

Faculty of Engineering & Technology

Steel Structures for Architects

Information :

Course Code : SCM 418

Level : Undergraduate

Course Hours : 2.00- Hours

Department : Department of Architectural Engineering

Instructor Information :

| Title | Name | Office hours |
|--------------------|--|--------------|
| Lecturer | Ahmed Amr Kadry Ahmed Shaheen | 10 |
| Assistant Lecturer | MOHAMMED TAHER ABDELHAMID MOHAMMED YOUSSEF | |

Area Of Study :

Upon successful completion of the course, the student should be able to:

- ✓ Know the theory of transferring loads in skeleton buildings.
- ✓ Know the main types of steel structure system elements.
- ✓ Knowing how to approximately sizing of each steel member.
- ✓ Fulfill the typical connections and details of steel structures

Description :

Design principles of steel structures, Structural systems, Design loads, Design of members subjected to axial forces, flexure, or shear, Design of bolted and welded connections, Structural details for trusses and frames, Details of connections, Steel structures.

Course outcomes :

a. Knowledge and Understanding: :

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| 1 - | Choose the main connections and suitable arrangement of bolts |
| 2 - | List the main elements of each type of steel structures |
| 3 - | Define steel characteristics and how they affect the different types of steel structures. |
| 4 - | Recognize the scientific background (theories and history) of design of steel as structural material. |

b. Intellectual Skills: :

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| 1 - | Decide the best structural system and the optimum section size. |
| 2 - | Create structural design of steel elements and connections. |
| 3 - | Develop the design of two dimensional structural elements. |
| 4 - | Analyze design problems. |

c. Professional and Practical Skills: :

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| 1 - | Submit professional neat drawings. |
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d. General and Transferable Skills: :

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| 1 - | Work within constraints of time |
| 2 - | Communicate effectively. |

Course Topic And Contents :

| Topic | No. of hours | Lecture | Tutorial / Practical |
|---|---------------------|----------------|-----------------------------|
| Preparation of General Layout | 12 | 6 | 6 |
| Calculation of loads and analysis preparation | 4 | 2 | 2 |
| Design of Tension Members | 4 | 2 | 2 |
| Design compression members | 8 | 4 | 4 |
| Design of beams | 4 | 2 | 2 |
| Design of connections and detailing | 12 | 6 | 6 |
| Design of beam-columns | 8 | 4 | 4 |

Teaching And Learning Methodologies :

Lecture

Class Work

Course Assessment :

| Methods of assessment | Relative weight % | Week No | Assess What |
|------------------------------|--------------------------|----------------|--------------------|
| Assignments/Studio work | 10.00 | | |
| Final exam | 40.00 | | |
| In Class Quizzes | 40.00 | | |
| Participation | 10.00 | | |

Course Notes :

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Recommended books :

1. The Egyptian Code of Practice of Design and Constructions of Steel Structures.

Periodicals :

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Web Sites :

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