1. COURSE CODE AND CREDITS

STRUCTURAL STEEL DESIGN
(FICT-03343)

2. CREDITS AND CONTACT HOURS

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<th>CREDITS</th>
<th>Theory: 2</th>
<th>Practice: 2</th>
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3. RESPONSIBLE FOR SYLLABUS ELABORATION AND ELABORATION DATE

Instructor: Pedro Rojas-Cruz, C.E., M.S., PhD.

4. COURSE TEXTBOOK AND REFERENCES


REFERENCES

4. Lehigh University, (1998), "Notas de Curso Metal Structures Technology".
5. Lehigh University, (1998), "Notas de Curso Fatigue and Fracture of Steel Structures".

5. COURSE DESCRIPTION
This course pertains to behavior and design of steel structural elements. The course focuses on fundamental concepts for designing steel structural elements under axial loads, compressive loads, combined flexural and axial loads. The course also pertains to requirements and criterions for earthquake-resistant structural steel design. The course of Structural Analysis II is a pre-requisite for this course.

PREREQUISITES AND COREQUISITES.

| PRE-REQUISITES | STRUCTURAL ANALYSIS II (FICT-02550) |

TYPE OF COURSE: R

6. SPECIFIC GOALS FOR THE COURSE

At the end of the course, students will be capable to:

1) Describe the theory behind the behavior and design of structural elements under tension, compression, combined flexural and axial loads.
2) Understand various design criterions for Structural Steel Design.
3) Analyze collapse mechanisms of simple structures.
4) Determine gravitational and lateral (seismic) loads acting over a Structural System.
5) Design structural steel elements under tension, compression, combined flexural and axial loads regarding LRFD 2010 specifications (Load and Resistance Factor Design).
6) Detail structural steel elements.

RELATIONSHIP BETWEEN PROGRAM AND COURSE LEARNING OBJECTIVES.

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7. COURSE OUTLINE

- CHAPTER I: STRUCTURAL STEEL (6T/6P)
- CHAPTER II: ELEMENTS UNDER TENSION, JOINTS AND FATIGUE (10T/10P)
- CHAPTER III: ELEMENTS UNDER COMPRESSION (6T/6P)
- CHAPTER IV: ELEMENTS UNDER FLEXURAL LOADS (6T/6P)
- CHAPTER V: ELEMENTS UNDER COMBINED FLEXURAL AND AXIAL LOADS (4T/4P)