ICM2313 GRAPHICAL DESIGN

Credits and contact hours: 10 UC credits/ 10 hours (3 hours in lectures and 7 individual work hours per week)

Instructor's name: Daniel Olivares Q.

Course coordinator's name To be defined

Textbook: Luzzadder, W. J. & Duff, J.M. Fundamentos de dibujo en ingeniería. México, Prentice Hall Hispanoamericana, 1994.

Course Catalog Description: This course provides students the tools needed to design a 3D parts, using a clear and unambiguous graphical expression, and to achieve a faster spatial analysis capacity. This course will cover topics related to techical drawing in engineering, and the student will use CAD software as a drawing tool.

Prerequisite Courses: None

Co-requisite Courses: None

Status in the Curriculum: Required

Course Learning Outcomes:
1. To represent 3D objects, according to Chilean an international standards of drawing in engineering
2. To model parts and pieces using CAD software.
3. To produce mechanical blueprints of a machine.

Relation of Course to ABET Criteria:
a. Knowledge of mathematics, science and engineering
b. Design and conduct experiments: analyze and interpret data
c. Design a system, component, or process
e. Identify, formulate, and solve engineering problems
f. Professional and ethical responsibility
g. Effective communication
j. Knowledge of contemporary issues
k. Techniques, skills, and modern tools for engineering practice.

Topics covered:

1. Foundations of projection systems.
   1.1 System of projection planes and orthographic projection.
   1.2 Deducting orthographic view over: point, line y limited surface.
   1.3 Basic solids and general pieces.
   1.4 Sizing, projection plane transformation y auxiliary views.
   1.5 Entity intersection.
   1.6 Flat sections.
   1.7 Loss of material.
   1.8 Section views.
   1.9 Lateral surfaces development.
   1.10 Rotation and folding.
   1.11 Prismatic and cylindrical ducts.
   1.12 Prismatic and conical hopper.
   1.13 Metallic transition pieces.
2. Technical drawing in mechanics.
   2.1. Taper and tilt.
   2.2. Flanges.
   2.3. Superficial finish.
   2.4. Thread representation.
   2.5. Full assembled and exploded view drawings.
3. CAD drawing
   3.1. CAD software usage as a drawing tool, developing sheets and 3D models
4. Development of manufacturing blueprints of a project.

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