SUBJECT TEACHING GUIDE

G768 - Graphic Expression

Degree in Chemical Engineering

Academic year 2023-2024

1. IDENTIFYING DATA				
Degree	Degree in Chemical Engineering		Type and Year	Core. Year 2
Faculty	School of Industrial Engineering and Telecommunications			
Discipline	Subject Area: Graphical Expression Basic Training Module			
Course unit title and code	G768 - Graphic Expression			
Number of ECTS credits allocated	6	Term	Semester based (2)	
Web				
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. INGENIERIA GEOGRAFICA Y TECNICAS DE EXPRESION GRAFICA
Name of lecturer	FERNANDO FADON SALAZAR
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Other lecturers	MARIA ESTHER VALLEJO LOBETE LUIS ANGEL SAIZ SAIZ

3.1 LEARNING OUTCOMES
- - Analize and draw planes and implement standardized engineering drawing -Get skills for manage computer-aided drawing for: 1. solve geometric problems, 2. visualize of bodies as constituent elements of mechanisms and industrial buildings, 3. perform and interpret engineering drawings projects.

4. OBJECTIVES

- Be able to represent an object in a graphic document, by means of applying representation systems and technical drawing standards, so that it is properly defined and can be interpreted by another.
- Give clear and justified graphically, oral and written design ideas and interpretation of engineering drawings.

6. COURSE ORGANIZATION

	CONTENTS
1	1: Metric geometry and descriptive geometry. Representation systems. General knowledge representation systems metric General notions of representation. Visualization. Perspective Isometric and perspective cavalier.
2	2: Metric geometry and descriptive. Multiview orthographic projection system. (Spatial resolution of DAO exercises) Point, line and plane. Representation of objects. DAO. True magnitudes of flat shapes. DAO. Intersections. DAO. Minimum distances. DAO. Angles. DAO. Curves and surfaces. Polyhedra. DAO. The pyramid and the cone. The prism and the cylinder. DAO. Intersection and development of surfaces. DAO.
3	3: Metric geometry and descriptive geometry. System dimension drawings. Digital terrain models. Point, line and plane. Intersections. Roof. Minimum distances. True magnitudes. Topographical drawing. Representation of the terrain. Digital Terrain Models. Profiles. Explanations.MDT
4	4: Technical Drawing. Plane generation. Standard representations. Views auxiliaries. Cortes, sections and breaks Dimensioning. Scales. Representation of threaded elements. Sketchs. Generation and interpretation of planes. Getting DAO planes.
5	Representation of industrial plants: Chemical.

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Partial tests (22.5% -22.5% -45%) Recuperation in final evaluation	Written exam	No	Yes	90,00
Works and three exams along the course.	Work	No	Yes	10,00
TOTAL				100,00

Observations
Students who do not pass the continuous assessment (average of 6 in the partial tests), may make the final test, similar to the three subtests, which is completed with the qualification of class work and presentation (10%), and tests partial (30%). -   On line evaluation will be applied to these same works, practical laboratory exercises and written tests, in case it would be impossible to carry out the on site evaluation because of a new health alert by COVID-19.

Observations for part-time students
Follows the same dynamics as presential students

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC
OCW https://ocw.unican.es/course/view.php?id=75 http://ocw.unican.es/ensenanzas-tecnicas/tecnicas-de-representacion-grafica-g420 Sist. de representación: GEOMETRÍA DESCRIPTIVA. F. Izquierdo Asensi GEOMETRÍA DESCRIPTIVA. (Tomo 1 - 2) F.J. Rodriguez de Abajo. EJERCICIOS DE ... J.I.Alvaro EXPRESIÓN GRÁFICA Y DAO. EJERCICIOS. F. Fadón Dibujo técnico: Dibujo Técnico. Ediciones BACHMANN – FORBERG NORMALIZACIÓN DEL DIBUJO INDUSTRIAL. R. Villar del Fresno, R. García, J.L. Caro. MANUAL DE NORMAS UNE SOBRE DIBUJO. Ed. AENOR DIBUJO TÉCNICO. R. de Abajo y Alvarez. Ed. Donostiarra Manual of Engineering Drawing. Colin H Simmons. Dennis E Maguire. Elsevier 2004 http://personales.unican.es/saizl