SUBJECT TEACHING GUIDE

G428 - Graphic Representation Techniques

Degree in Mechanical Engineering
First Degree in Mechanical Engineering

Academic year 2023-2024

1. IDENTIFYING DATA					
Degree	Degree in Mechanical Engineering First Degree in Mechanical Engineering			Type and Year	Core. Year 1 Core. Year 1
Faculty	School of Industrial Engineering and Telecommunications				
Discipline	Subject Area: Graphical Expression Basic Training Module				
Course unit title and code	G428 - Graphic Representation Techniques				
Number of ECTS credits allocated	6	Term		Semester based (1)	
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	CRISTINA MANCHADO DEL VAL
E-mail	cristina.manchado@unican.es
Office	E.T.S. de Ingenieros Industriales y de Telecomunicación. Planta: - 2. DESPACHO (S2003)
Other lecturers	JOSE ANDRES DIAZ SEVERIANO VALENTIN GOMEZ JAUREGUI

3.1 LEARNING OUTCOMES

-- Perform, manage and properly develop industrial drafts.
- Ability to use computer-aided design applications in order to:
1. Solve geometric problems.
2. Visualize solids, mechanisms and industrial designs.
3. Generate and read industrial drafts in engineering projects.

4. OBJECTIVES

- Ability to apply graphical engineering technique, descriptive geometry and normalization to develop industrial drafts.
- Graphical description of mechanical engineering design and ideas for visualization and communication by freehand sketching

6. COURSE ORGANIZATION

CONTENTS	
1	Graphic representation techniques. Visualization. Descriptive and metric geometry.
2	Graphic representation techniques. Descriptive and metric geometry. - Points, lines, and planes. CAD. - Projections and traces. CAD - Intersections. CAD. - Distances. CAD. - Angles. CAD - Curves and surfaces. CAD - Pyramids and cones. CAD - Prysms.CAD - Developing surfaces. CAD
3	Developing of industrial drafts and freehand sketching - Views, cuts and sections. Auxiliary views. - Annotations. - Freehand sketching. - Industrial drafts. - 3D Modelling and CAD
4	Topography - Surfaces. - Grading

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Evaluation in laboratory (with CAD tools)	Laboratory evaluation	No	Yes	30,00
Evaluation in laboratory (with CAD Tools).	Laboratory evaluation	No	Yes	30,00
Freehand sketching exam.	Written exam	No	Yes	30,00
Freehand sketching Exam	Written exam	No	Yes	10,00
TOTAL				100,00

Observations

I) Classwork is taken into account.
II) submitting works in the correct dates is compulsory.
III) Attendance at classes is essential.
III) Marks for each part are saved to the end of the course

- NOTE: Given the current uncertain health situation, in case the competent health and educational authorities don't allow any physical evaluation in the classroom / lab, a distance evaluation modality will be adopted using online technologies

Observations for part-time students

Check conditions with the teacher as soon as possible.

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

- Jesús Félez y Mª Luisa Martínez. Ingeniería Gráfica y Diseño. Editorial Síntesis. ISBN: 97-88497564-99-1. 2008 (http://catalogo.unican.es/cgi-bin/abnetopac/?TITN=289976)
- AENOR. Normas UNE-EN ISO-128 e UNE-EN ISO-129 (disponibles en AenorMAS a través de la BUC)
- Basilio Ramos Barbero y Esteban García Maté. AENOR, Dibujo Técnico 3ª Edición. Aenor Internacional S.A.U. ISBN: 978-84-17891-23-7 (libro electrónico a través de la BUC: https://go.exlibris.link/7JxJQZZr)

- OpenCourseWare de la UC
http://ocw.unican.es/ensenanzas-tecnicas/diseno-asistido-por-ordenador
http://ocw.unican.es/ensenanzas-tecnicas/cad-3d
http://ocw.unican.es/ensenanzas-tecnicas/expresion-grafica-y-dao