

COURSE DESCRIPTION

COURSE DETAILS

Title (of the course): **REPRESENTACIÓN GRÁFICA AVANZADA DE DATOS Y RESULTADOS DE TRABAJOS CIENTÍFICOS (T)**

Code: 138006

Degree/Master: **TRANSVERSALES MÁSTERES UNIVERSITARIOS**

Year: 1

ECTS Credits: 4.0

Classroom hours: 0

Face-to-face classroom percentage: 0.0%

Study hours: 100

Online platform: <http://moodle.uco.es/moodlemap/>

LECTURER INFORMATION

Name: GUTIÉRREZ DE RAVE AGÜERA, EDUARDO SALVADOR (Coordinador)

Department: INGENIERÍA GRÁFICA Y GEOMÁTICA

Area: EXPRESIÓN GRÁFICA EN LA INGENIERÍA

Office location: Edificio Gregor Mendel, 3ª planta. Ala oeste

E-Mail: ir1gurae@uco.es

Phone: 957212126

Name: JIMÉNEZ HORNERO, FRANCISCO JOSÉ

Department: INGENIERÍA GRÁFICA Y GEOMÁTICA

Area: EXPRESIÓN GRÁFICA EN LA INGENIERÍA

Office location: Edificio Gregor Mendel, 3ª planta. Ala oeste

E-Mail: ir2jihof@uco.es

Phone: 957212126

PREREQUISITES AND RECOMMENDATIONS

Prerequisites established in the study plan

Prerequisites are not needed

Recommendations

No recommendations are made

INTENDED LEARNING OUTCOMES

- | | |
|-----|---|
| CU2 | Apply the knowledge acquired and problem-solving skills in new or unfamiliar environments in broader (or multidisciplinary) contexts related to the field of study. |
| CU6 | Ability to obtain information, design experiments and interpret behavioural outcomes. |

OBJECTIVES

- 1) Development and customization of different types of 2D and 3D plots .
- 2) Obtaining 3D maps with different methods.
- 3) Learning of 3D data visualization techniques.

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CONTENT

1. Theory contents

INTRODUCTION

Description of the different types of 2D and 3D plots.

Criteria for selecting suitable plots to represent several kinds of data.

I: BASIC PLOTS

Line plot; Scatter plot; Step plot; Bubble plot; Function plots (Explicit, Parametric); Class scatter plot; 3D Ribbon wall plot; 3D XYZ line-scatter plot; 3D Bubble plot; 3D Function plot; 3D XYZ class scatter plot

II: GRAPH FEATURES

Graph magnifier; Digitize plots; Some available curve fits (Linear fit, Power fit, Polynomial); Custom curve fit

III: BAR CHART, POLAR, SPECIALTY AND STATISTICAL PLOTS

Bar Chart plots

Vertical / Horizontal Bar Chart; Vertical / Horizontal Floating Bar Chart; 3D Vertical / Horizontal Bar Chart; Vertical / Horizontal Category Bar Chart; 3D Vertical / Horizontal Floating Bar Chart; 3D XYZ Vertical / Horizontal Bar Chart; 3D XYZ Vertical / Horizontal Floating Bar Chart

Polar plots

Polar Class Scatter; Rose, Wind Chart; Polar Line/scatter; Polar Function Plot; Polar Bar Chart; Radar Chart

Specialty plots

High-Low-Close Candlestick; Ternary Scatter; X/Y/Angle/Magnitude Vector; High-Low-Close

Statistical plots

Vertical Histogram; Vertical 3D Histogram; Box-Whisker; Notched Box-Whisker; Pie Chart; Pie Chart 3D; Q-Q Plot; Normal Q-Q Plot

IV: CONTOUR SURFACE

XY Data Map; XZ Data Map; XY Grid Map; XZ Grid Map; XY Function Map; XZ Function Map; Surface Data Map; Surface Grid Map; Surface Function Map; Surface Contour Overlay

2. Practical contents

Practicing the student skills on the corresponding theoretical content about 2D and 3D plots.

METHODOLOGY

Clarifications

The part-time students status and availability will be taking during the course development and evaluation. Students fit to part-time course will be held by agreement with the teachers at the beginning of the semester. In duly justified cases, the evaluation criteria may be modified and adapted to these students, providing equal rights and opportunities for all partners.

The work material (dossier of documentation for self-study, exercises and problems) are available to students in the virtual platform will enable flexible learning of the subject for part-time students.

Face-to-face activities

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Off-site activities

Activity	Total
Activities	30
Exercises	45
Self-study	25
Total hours	100

WORK MATERIALS FOR STUDENTS

Dossier - <http://moodle.uco.es/moodlemap/>

Exercises and activities - <http://moodle.uco.es/moodlemap/>

Explanatory videos - <http://moodle.uco.es/moodlemap/>

EVALUATION

Tools	Percentage
Assignments and projects	20%
Case studies	20%
Problem solving	60%

Period of validity for partial qualifications:

There are not partial qualifications

Clarifications:

If a student (part-time or full time) does not pass the course, he/she must perform a practical exam on exercises proposed by the teachers at the end of the semester.

BIBLIOGRAPHY

1. Basic Bibliography

- Grapher 15. User's Guide, The Ultimate Technical Graphing Package. Golden Software, LLC. www.GoldenSoftware.com
- Bertoline, G.R., Wiebe, E.N., Hartman, N.W., Ross, W.A. (2008).
- Technical Graphics Communications, fourth edition. Chapter 21, Technical Data Presentation. McGraw-Hill Education.

2. Further reading

None

COURSE DESCRIPTION

The methodological strategies and the evaluation system contemplated in this Course Description will be adapted according to the needs presented by students with disabilities and special educational needs in the cases that are required.

CONTINGENCY PLAN: CASE SCENARIO A

Case scenario A will correspond to a diminished on-site academic activity due to social distancing measures affecting the permitted capacity of classrooms.

METHODOLOGY

General clarifications on the methodology on case scenario A

The part-time students status and availability will be taking during the course development and evaluation. Students fit to part-time course will be held by agreement with the teachers at the beginning of the semester. In duly justified cases, the evaluation criteria may be modified and adapted to these students, providing equal rights and opportunities for all partners.

The work material (dossier of documentation for self-study, exercises and problems) are available to students in the virtual platform will enable flexible learning of the subject for part-time students.

EVALUATION

Tools	Percentage
Assignments and projects	20%
Case studies	20%
Problem solving	60%

Period of validity for partial qualifications (Scenario A):

There are not partial qualifications

Clarifications on the methodology for part-time students and students with disabilities and special educational needs (Scenario A):

If a student (part-time or full time) does not pass the course, he/she must perform a practical exam on exercises proposed by the teachers at the end of the semester.

CONTINGENCY PLAN: CASE SCENARIO B

Case scenario B will bring about a suspension of all on-site academic activities as a consequence of health measures.

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METHODOLOGY

General clarifications on the methodology on case scenario B

The part-time students status and availability will be taking during the course development and evaluation. Students fit to part-time course will be held by agreement with the teachers at the beginning of the semester. In duly justified cases, the evaluation criteria may be modified and adapted to these students, providing equal rights and opportunities for all partners.

The work material (dossier of documentation for self-study, exercises and problems) are available to students in the virtual platform will enable flexible learning of the subject for part-time students.

EVALUATION

Tools	Percentage
Assignments and projects	20%
Case studies	20%
Problem solving	60%

Period of validity for partial qualifications (Scenario B):

There are not partial qualifications

Clarifications on the methodology for part-time students and students with disabilities and special educational needs (Scenario B):

If a student (part-time or full time) does not pass the course, he/she must perform a practical exam on exercises proposed by the teachers at the end of the semester.