GUÍA DOCENTE ABREVIADA DE LA ASIGNATURA

G2008 - Programming

Grado en Ingeniería Civil
Grado en Ingeniería Civil
Programa Cornell
Curso Académico 2023-2024

1. DATOS IDENTIFICATIVOS				
Título/s	Grado en Ingeniería Civil Grado en Ingeniería Civil		Tipología y Curso	Básica. Curso 1 Básica. Curso 1
Centro	Escuela Técnica Superior de Ingenieros de Caminos, Canales y Puertos			
Módulo / materia	FORMACIÓN BÁSICA MATEMÁTICAS BÁSICAS PARA LA INGENIERÍA			
Código y denominación	G2008 - Programming			
Créditos ECTS	6	Cuatrimestre	Cuatrimestral (2)	
Web				
Idioma de impartición	Inglés		Forma de impartición	Presencial

Departamento	DPTO. MATEMATICA APLICADA Y CIENCIAS DE LA COMPUTACION
Profesor responsable	JAVIER GONZALEZ VILLA
E-mail	javier.gonzalezvilla@unican.es
Número despacho	E.T.S. de Ingenieros de Caminos, Canales y Puertos. Planta: + 1. DESPACHO PROFESORES (1026)
Otros profesores	

3.1 RESULTADOS DE APRENDIZAJE
- Know the basic fundamentals of computers and operating systems.
- Solve problems by programming computers.
- Know programming environments with application in civil engineering.
- Learn techniques and tools that allow effective data management.

4. OBJETIVOS
Identify the basic components of the computer and the operating system and their impact on its use.
Use the tools, processes and techniques necessary for the development and fine-tuning of computer programs.
Use development environments with application in civil engineering.
Use techniques and tools that allow proper data management.

6. ORGANIZACIÓN DOCENTE	
	CONTENIDOS
1	Block I: Fundamentals 1. Computer fundamentals. 2. Operating Systems. 3. Programming languages. 4. Office automation tools. 5. Anaconda framework (Python) - JupyterLab
2	Block II: Basic Programming. 1. Basic types. 2. Strings, lists, tuples and dictionaries. 3. Branching and iteration. 4. Decomposition, abstraction and functions.
3	Block III: Advanced Programming. 1. Recursion. 2. Files and Data Bases. 3. Exceptions, Validation and Debugging. 4. Object Oriented Programming. 5. Standard library and libraries.
4	Block IV: Algorithmics and Complexity. 1. Efficiency. 2. Complexity classes.

7. MÉTODOS DE LA EVALUACIÓN

Descripción	Tipología	Eval. Final	Recuper.	%
Theoretical-practical test Blocks I and II.	Examen escrito	No	Sí	35,00
Theoretical-practical test Blocks III and IV.	Examen escrito	No	Sí	35,00
Group work: programming techniques in Civil Engineering.	Trabajo	No	No	30,00
TOTAL				100,00

Observaciones

Those students who do not pass the evaluation criteria or whose overall ordinary evaluation of the course does not exceed the minimum grade may, during the extraordinary exam period, take a single theoretical-practical evaluation test that includes Blocks I, II, III and IV. The final grade of the course in the extraordinary exam period, for those students who present themselves for the recovery, will be calculated according to the percentages referred to in the different evaluation methods described in the teaching guide carried out during the course.

Criterios de evaluación para estudiantes a tiempo parcial

For part-time students, the need to attend 50% of the practicals may be replaced by a practical test in the laboratory or by the delivery of a paper, and the group work may be replaced by a paper on the same subject but done individually.

8. BIBLIOGRAFÍA Y MATERIALES DIDÁCTICOS

BÁSICA

Martelli, A., Ravenscroft, A. M., Holden, S., & McGuire, P. (2023). Python in a Nutshell. O'Reilly Media, Inc.

Matthes, E. (2019). Python Crash Course, 2nd Edition: A Hands-On, Project-Based Introduction to Programming. No Starch Press.

Esta es la Guía Docente abreviada de la asignatura. Tienes también publicada en la Web la información más detallada de la asignatura en la Guía Docente Completa.