

[GIH301] DATABASES

GENERAL INFORMATION

Studies	DEGREE IN COMPUTER ENGINEERING		Subject	SOFTWARE ENGINEERING, INFORMATION SYSTEMS AND SMART SYSTEMS	
Semester	2	Course	2	Mention / Field of specialisation	
Character	COMPULSORY		Language	CASTELLANO/EUSKARA	
Plan	2022	Modality	Face-to-face	Total hours	97 class hours + 53 non-class hours = 150 total hours
Credits	6	Hours/week	5.39		

PROFESSORS

ARCAUZ ARABOLAZA, JAVIER
MUÑOZ VALENTI, UNAI

REQUIRED PREVIOUS KNOWLEDGE

Subjects	Knowledge
(No specific previous subjects required)	(No previous knowledge required)

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
GIR209 - To apply the necessary tools for storage, processing and access to databases and information systems, including web-based ones			x	5,4
G-RTR1 - To develop interdisciplinary projects specific to their specialty and of gradual complexity, - becoming aware of respect for human rights and fundamental rights, and analyzing and assessing the impact of the proposed solutions on the SDGs - to acquire and/or apply basic, advanced and /or avant-garde, demonstrating the ability to work in multidisciplinary teams and/or undertake further studies with a high degree of autonomy		x		0,32
G-RTR2 - To express information, ideas and the arguments that support them in an orderly, clear and coherent manner, orally and in writing, based on quality information, self-made or obtained from different sources, using inclusive and non-discriminatory language		x		0,28

Total: 6

KC: Knowledge or Content / SK: Skills / AB: Abilities

SECONDARY LEARNING RESULTS

RG1290 [!] *Proponer los objetivos y la planificación de un proyecto que le permita adquirir y/o reforzar los conocimientos de tecnologías propias de su especialidad,- que en ocasiones llegan a la vanguardia del conocimiento- y definir una estrategia de aprendiz*

LEARNING ACTIVITIES

Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams

CH 3 h. NCH 1 h. TH 4 h.

EVALUATION SYSTEM

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	20%
Presentation and defence of exercises, case studies, computer practical work, simulation practical work, laboratory practical work, term projects, end of degree project, master's thesis, challenges and problems	50%
Prototype / Product	30%

Comments: Continuous assessment.

MAKE-UP MECHANISMS

(No mechanisms)

CH - Class hours: 3 h.
NCH - Non-class hours: 1 h.
TH - Total hours: 4 h.

RG1291 [!] *Establecer las responsabilidades de los miembros del equipo utilizando técnicas adecuadas para fomentar la eficiencia del equipo para el desarrollo del proyecto en los plazos establecidos (compartir recursos, aportar ideas, habilidades comunicativas*

LEARNING ACTIVITIES		CH	NCH	TH
Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams		3 h.	1 h.	4 h.
EVALUATION SYSTEM	W	MAKE-UP MECHANISMS		
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	20%	(No mechanisms)		
Presentation and defence of exercises, case studies, computer practical work, simulation practical work, laboratory practical work, term projects, end of degree project, master's thesis, challenges and problems	50%			
Prototype / Product	30%			
Comments: Continuous assessment.				
CH - Class hours: 3 h.				
NCH - Non-class hours: 1 h.				
TH - Total hours: 4 h.				

RG1293 [!] *Redacta y estructura correctamente la memoria del proyecto, haciendo un uso correcto, inclusivo y no discriminatorio del lenguaje. Para ello, busca y hace uso de las fuentes de información adecuadas.*

LEARNING ACTIVITIES		CH	NCH	TH
Development and writing of records, reports, presentations, audiovisual material, etc. on projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams		3 h.	1 h.	4 h.
EVALUATION SYSTEM	W	MAKE-UP MECHANISMS		
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	20%	(No mechanisms)		
Presentation and defence of exercises, case studies, computer practical work, simulation practical work, laboratory practical work, term projects, end of degree project, master's thesis, challenges and problems	50%			
Prototype / Product	30%			
Comments: Continuous assessment. It may be asked to redo the document.				
CH - Class hours: 3 h.				
NCH - Non-class hours: 1 h.				
TH - Total hours: 4 h.				

RG1294 [!] *Realiza una presentación oral del proyecto con argumentos elaborados por sí mismos y haciendo un uso correcto, inclusivo y no discriminatorio del lenguaje.*

LEARNING ACTIVITIES		CH	NCH	TH
Development and writing of records, reports, presentations, audiovisual material, etc. on projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams		2 h.	1 h.	3 h.
EVALUATION SYSTEM	W	MAKE-UP MECHANISMS		
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	20%	(No mechanisms)		
Presentation and defence of exercises, case studies, computer practical work, simulation practical work, laboratory practical work, term projects, end of degree project, master's thesis, challenges and problems	50%			
Prototype / Product	30%			

Comments: Continuous assessment.

CH - Class hours: 2 h.
NCH - Non-class hours: 1 h.
TH - Total hours: 3 h.

RG1220 [!] *Diseñar la estructura de datos persistentes de una aplicación haciendo uso de un SGBD*

LEARNING ACTIVITIES

	CH	NCH	TH
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	2 h.		2 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	3 h.	2 h.	5 h.
Carrying out exercises and solving problems individually and/or in teams	23 h.	15 h.	38 h.

EVALUATION SYSTEM

W

Individual written and/or oral tests or individual coding/programming tests

Comments: Minimum grade: 5

MAKE-UP MECHANISMS

Individual written and/or oral tests or individual coding/programming tests

Comments: Students with less than 5 in the Control point must retake the exam. Control point value will be 25% and retake 75%.

CH - Class hours: 28 h.
NCH - Non-class hours: 17 h.
TH - Total hours: 45 h.

RG1221 [!] *Implementa, consulta y manipula bases de datos relacionales que hacen uso de un SGBD*

LEARNING ACTIVITIES

	CH	NCH	TH
Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning	6 h.	3 h.	9 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	2 h.		2 h.
Carrying out exercises and solving problems individually and/or in teams	21 h.	13 h.	34 h.

EVALUATION SYSTEM

W

Individual written and/or oral tests or individual coding/programming tests

Comments: Minimum grade: 5

MAKE-UP MECHANISMS

Individual written and/or oral tests or individual coding/programming tests

Comments: Students with less than 5 in the Control point must retake the exam. Control point value will be 25% and retake 75%.

CH - Class hours: 29 h.
NCH - Non-class hours: 16 h.
TH - Total hours: 45 h.

RG1222 [!] *Desarrolla una aplicación gráfica haciendo uso de patrones de diseño con acceso a datos persistentes en un SGBD instalado, configurado y administrado de forma segura*

LEARNING ACTIVITIES

	CH	NCH	TH
Development and writing of records, reports, presentations, audiovisual material, etc. on projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams	4 h.	2 h.	6 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	1 h.		1 h.
Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in	15 h.	9 h.	24 h.

interdisciplinary contexts, real and/or simulated, individually and/or in teams

Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects 3 h. 2 h. 5 h.

Carrying out exercises and solving problems individually and/or in teams 6 h. 3 h. 9 h.

EVALUATION SYSTEM

W

MAKE-UP MECHANISMS

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems 13%

Presentation and defence of exercises, case studies, computer practical work, simulation practical work, laboratory practical work, term projects, end of degree project, master's thesis, challenges and problems 33%

Individual written and/or oral tests or individual coding/programming tests 35%

Prototype / Product 19%

Comments: Minimum grade: 5 Project evaluation based on technical rubric

Individual written and/or oral tests or individual coding/programming tests

Comments: Students with less than 5 in the Control point must retake the exam. Control point value will be 25% and retake 75%. Project: There will not be any retake of the individual defense.

CH - Class hours: 29 h.

NCH - Non-class hours: 16 h.

TH - Total hours: 45 h.

CONTENTS

1. Relational database design 1.1 Entity-Relationship Model 1.2 Relational Model 1.3 Normalization
 2. Creation, Manipulation and Query of databases with SQL language. 2.1 Creation of databases with DDL 2.2 Manipulation of databases with DML 2.3 Querying databases with SQL3. Installation, configuration and administration of a relational database server. 3.1 Installation of a DBMS 3.2 DBMS architecture 3.3 User management. 3.4 Backup copies 3.5 Graphical tools4. Development of graphical database access applications. 4.1 Development of a visual application with connection to the database. 4.2 Use of the library to connect to the DB (JDBC). 4.3 Development based on design patterns (DAO). 4.4 Database programming (PL./SQL)

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources

Subject notes
 Moodle Platform
 Topic related web quires
 Video projections
 Specific Master Software

Bibliography

<https://labur.eus/biblio-gih301>