[GEX301] GRAPHIC EXPRESSION

GENERAL INFORMATION

Studies	DEGREE IN INDUSTRIAL ELECTRONICS ENGINEERING			**Subject**	GRAPHIC EXPRESSION
Semester	1	**Course**	1	**Mention / Field of specialisation**	
Character	BASIC TRAINING				
Plan	2022	**Modality**	Face-to-face	**Language**	EUSKARA
Credits	6	**Hours/week**	5.22	**Total hours**	94 class hours + 56 non-class hours = **150 total hours**

PROFESSORS

ZUBELDIA INDART, ITSASO
ARDANZA CUEVAS, ASIER

REQUIRED PREVIOUS KNOWLEDGE

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

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
G-RA02 - To demonstrate spatial vision and knowledge of graphic representation techniques, both through traditional methods of metric geometry and descriptive geometry, and through computer-aided design applications	x	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		0,28
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		0,32
			Total:	6

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

ENAEE LEARNING RESULTS

ENA101 - Knowledge and comprehension: Knowledge and understanding of mathematics and other basic sciences inherent in them engineering speciality, at a level that allows them to acquire the other competencies of the degree.

ENA104 - Analysis in engineering: The ability to analyse complex products, processes and systems in their field of study; choose and apply relevant analytical, calculation and experimental methods in a suitable way; and correctly interpret the results of such analyses.

ENA106 - Engineering projects: Ability to project, design and develop complex products (parts, components, finished products, etc.), processes and systems of their speciality, which meet the established requirements, including awareness of the social, health and safety, environmental, economic and industrial aspects, as well as selecting and applying appropriate project methods.

ENA113 - Practical application of engineering: Knowledge of application of materials, equipment and tools, engineering technology and processes, and their limitations in the field of their speciality.

ENA114 - Practical application of engineering: Ability to apply standards of engineering practice in their speciality.

ENA119 - Communication and Teamwork: Ability to effectively communicate information, ideas, problems and solutions in the field of engineering and with society in general.

ENA120 - Communication and Teamwork: Ability to operate effectively in domestic and international contexts, individually and as a team, and to cooperate with both engineers and people from other disciplines.

SECONDARY LEARNING RESULTS

RGE103 **[!]** ***Representa diferentes tipos de piezas respetando las normas de dibujo técnico***

LEARNING ACTIVITIES	CH	NCH	TH
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	5 h.	7 h.	12 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	3 h.		3 h.
Carrying out exercises and solving problems individually and/or in teams	19,5 h.	10 h.	29,5 h.
Carrying out work experience in real environments and writing the corresponding report	3,5 h.	2 h.	5,5 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	2%	Individual written and/or oral tests or individual coding/programming tests

Individual written and/or oral tests or individual coding/programming tests	92,5%
Prototype / Product	5,5%

Comments: - Control point: minimum grade 5. - All works must be delivered in order to be presented to the control points. - If all the works are not delivered, the grades corresponding to them will not be taken into account. - If any work is copied or allowed to be copied, the notes corresponding to the works will not be taken into account. - PBL project grade: 30% product, 20% technical content of the report and 50% individual technical defense.

Prototype / Product

Comments: - As the learning result is continuous, there will only be one final recovery of the checkpoints. - Students with less than a 5 at the control point must retake the exam. - Final note of the control point: control point 25% and retake 75%. - In the project / PBL there will not be any retake of the individual defense.

CH - Class hours: 31 h.
NCH - Non-class hours: 19 h.
TH - Total hours: 50 h.

RGE104 **[!]** ***Acota y define las tolerancias necesarias de las piezas que forman un conjunto mecánico respetando las normas de dibujo técnico***

LEARNING ACTIVITIES	CH	NCH	TH
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	12 h.	10,5 h.	22,5 h.
Carrying out exercises and solving problems individually and/or in teams	34 h.	19 h.	53 h.
Carrying out work experience in real environments and writing the corresponding report	6 h.	3,5 h.	9,5 h.

EVALUATION SYSTEM	W
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	2,5%
Individual written and/or oral tests or individual coding/programming tests	92%
Prototype / Product	5,5%

Comments: - Control point: minimum grade 5. - All works must be delivered in order to be presented to the control points. - If all the works are not delivered, the grades corresponding to them will not be taken into account. - If any work is copied or allowed to be copied, the notes corresponding to the works will not be taken into account. - PBL project grade: 30% product, 20% technical content of the report and 50% individual technical defense.

MAKE-UP 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

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

Comments: - As the learning result is continuous, there will only be one final recovery of the checkpoints. - Students with less than a 5 at the control point must retake the exam. - Final note of the control point: control point 25% and retake 75%. - In the project / PBL there will not be any retake of the individual defense.

CH - Class hours: 52 h.
NCH - Non-class hours: 33 h.
TH - Total hours: 85 h.

RGE190 **[!]** ***Conocer y aplicar las fases para desarrollar de forma guiada, con los objetivos y la planificación previamente definidos, un proyecto de complejidad técnica acorde con los conocimientos de formación básica de la ingeniería. Reflexiona sobre los cono***

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
Observation (technical capacity, attitude and participation)	100%

MAKE-UP MECHANISMS

Observation (technical capacity, attitude and participation)
Comments: Continuous assessment.

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

RGE191 **[!]** ***Contribuir en la estrategia de funcionamiento del equipo priorizando los objetivos comunes, fomentando y valorando la participación de todas las personas y responsabilizándose de las tareas individuales, así como del cumplimiento de plazos.***

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	2 h.	1 h.	3 h.

EVALUATION SYSTEM	W	MAKE-UP MECHANISMS
Observation (technical capacity, attitude and participation)	100%	Observation (technical capacity, attitude and participation) **Comments:** Continuous assessment.

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

RGE193 **[!]** ***Redacta una memoria de proyecto clara y concisa utilizando las fuentes de información y estructura de memoria facilitadas, 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	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	100%	Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems **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.

RGE194 **[!]** ***Realiza una presentación oral y defensa del proyecto clara y concisa, haciendo 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	3 h.	1 h.	4 h.

EVALUATION SYSTEM	W	MAKE-UP 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	100%	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 **Comments:** - Continuous assessment.

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

CONTENTS

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Subject notes Topic related web quires Moodle Platform	Normalizacion del Dibujo tecnico. Dandidado Preciado y Francisco Jesus Moral. Editorial Donostiarra. ISBN 978847063396 Prácticas de Dibujo Técnico (Cortes y secciones). Joaquín Gonzalo. Editorial Donostiarra. ISBN 8470633163 Vistas y visualización de formas. Gaspar Fernández. Editorial Donostiarra. ISBN 8470633155