

[GOA301] MATHEMATICS I

GENERAL INFORMATION

Studies	DEGREE IN INDUSTRIAL ORGANIZATION ENGINEERING	Subject	MATHEMATICS
Semester	1	Course	1
Character	BASIC TRAINING	Mention / Field of specialisation	
Plan	2022	Modality	Face-to-face
Credits	6	Hours/week	6.78
		Language	EUSKARA
		Total hours	122 class hours + 28 non-class hours = 150 total hours

PROFESSORS

ALBISTEGUI ZAMACOLA, GERMAN ALBERTO

REQUIRED PREVIOUS KNOWLEDGE

Subjects	Knowledge
<i>(No specific previous subjects required)</i>	<i>(No previous knowledge required)</i>

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
G-RA01 - To solve mathematical problems that may arise in engineering, demonstrating the ability to apply knowledge of: differential and integral calculus; numerical methods; and optimization		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

ENAE LEARNING RESULTS

ENAE LEARNING RESULTS	ECTS
ENAE01 - Knowledge and understanding: Knowledge and understanding of the underlying scientific and mathematical principles in their branch of engineering.	4,36
ENAE05 - Analysis in engineering: Ability to apply their knowledge and understanding in identifying, formulating and solving engineering problems using established methods.	1
ENAE08 - Engineering projects: Ability to apply their knowledge in the development and completion of projects which meet specific requirements.	0,22
ENAE17 - Transversal competences: To work effectively, both individually and in a team.	0,21
ENAE18 - Transversal competences: To use different methods to communicate effectively with the engineering community and society in general.	0,21
Total:	6

SECONDARY LEARNING RESULTS

RG0101 [!] *Utiliza el cálculo diferencial para resolver los problemas de optimización, de cálculo aproximado y la expansión de los errores*

LEARNING ACTIVITIES

LEARNING ACTIVITIES	CH	NCH	TH
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	10 h.	5 h.	15 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	60 h.	6 h.	66 h.

EVALUATION SYSTEM

Individual written and/or oral tests or individual coding/programming tests W
100%

MAKE-UP MECHANISMS

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

CH - Class hours: 70 h.
NCH - Non-class hours: 11 h.
TH - Total hours: 81 h.

RG0102 [!] *Utiliza el cálculo integral para resolver problemas físicos y geométricos*

LEARNING ACTIVITIES	CH	NCH	TH
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	4 h.	2 h.	6 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	40 h.	8 h.	48 h.

EVALUATION SYSTEM	W	MAKE-UP MECHANISMS
Individual written and/or oral tests or individual coding/programming tests	100%	(No mechanisms)

CH - Class hours: 44 h.
NCH - Non-class hours: 10 h.
TH - Total hours: 54 h.

RG0190 [!] *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
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
Individual written and/or oral tests or individual coding/programming tests	100%	Individual written and/or oral tests or individual coding/programming tests

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

RG0191 [!] *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
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
Individual written and/or oral tests or individual coding/programming tests	100%	Individual written and/or oral tests or individual coding/programming tests

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

RG0193 [!] *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		<i>CH</i>	<i>NCH</i>	<i>TH</i>
Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams		1 h.	3 h.	4 h.
EVALUATION SYSTEM	<i>W</i>	MAKE-UP MECHANISMS		
Individual written and/or oral tests or individual coding/programming tests	100%	Individual written and/or oral tests or individual coding/programming tests		
CH - Class hours: 1 h.				
NCH - Non-class hours: 3 h.				
TH - Total hours: 4 h.				

RG0194 [!] *Realiza una presentación oral y defensa del proyecto clara y concisa, haciendo uso correcto, inclusivo y no discriminatorio del lenguaje.*

LEARNING ACTIVITIES		<i>CH</i>	<i>NCH</i>	<i>TH</i>
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.	2 h.	4 h.
EVALUATION SYSTEM	<i>W</i>	MAKE-UP MECHANISMS		
Individual written and/or oral tests or individual coding/programming tests	100%	Individual written and/or oral tests or individual coding/programming tests		
CH - Class hours: 2 h.				
NCH - Non-class hours: 2 h.				
TH - Total hours: 4 h.				

CONTENTS

1. Equations 2. Inequalities 3. Complex numbers 4. Derivation and applications 5. Integral calculus and applications

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Subject notes	Calculus Salas/Hille Reverté
Moodle Platform	Calculo Larson/Hostetler/Edwards McGraw Hill
Class presentations	
Specific Master Software	