

[GCA301] MATHEMATICS I

GENERAL INFORMATION

Studies	DEGREE IN ENGINEERING IN ECO-TECHNOLOGY IN INDUSTRIAL PROCESS		Subject	MATHEMATICS
Semester	1	Course	1	Mention / Field of specialisation
Character	BASIC TRAINING		Language	EUSKARA
Plan	2022	Modality	Face-to-face	Total hours 69 class hours + 81 non-class hours = 150 total hours
Credits	6	Hours/week	3.83	

2030 AGENDA GOALS



PROFESSORS

AROSTEGUI OCHOA, ASIER

REQUIRED PREVIOUS KNOWLEDGE

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

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		0,36
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		0,24

Total: 6

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

SECONDARY LEARNING RESULTS

1RGC192 (1 sem)

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 2 h. NCH 1 h. TH 3 h.

EVALUATION SYSTEM

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

W

100%

MAKE-UP MECHANISMS

(No mechanisms)

CH - Class hours: 2 h.

NCH - Non-class hours: 1 h.

TH - Total hours: 3 h.

1RGC193 (1 sem)

LEARNING ACTIVITIES

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

CH NCH 3 h. TH 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

100%

(No mechanisms)

CH - Class hours: 0 h.

NCH - Non-class hours: 3 h.

TH - Total hours: 3 h.

1RGC194 (1 sem)

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.

3 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%

(No mechanisms)

CH - Class hours: 0 h.

NCH - Non-class hours: 3 h.

TH - Total hours: 3 h.

RGC101 [!] Utiliza el cálculo diferencial para resolver los problemas de optimización, de cálculo aproximado y la expansión de los errores

LEARNING ACTIVITIES

CH

NCH

TH

Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints

3 h.

23 h.

26 h.

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

8 h.

8 h.

Computer simulation exercises, individually and/or in teams

10 h.

12 h.

22 h.

Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects

25 h.

25 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

10%

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

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

90%

CH - Class hours: 38 h.

NCH - Non-class hours: 43 h.

TH - Total hours: 81 h.

RGC102 [!] 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

2 h.

8 h.

10 h.

Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in

7 h.

7 h.

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

Computer simulation exercises, individually and/or in teams

10 h.

10 h.

20 h.

Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects

17 h.

17 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

10%

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

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

90%

CH - Class hours: 29 h.

NCH - Non-class hours: 25 h.

TH - Total hours: 54 h.

1RGC190 (1 sem)

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.

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

100%

(No mechanisms)

CH - Class hours: 0 h.

NCH - Non-class hours: 3 h.

TH - Total hours: 3 h.

1RGC191 (1 sem)

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.

3 h.

EVALUATION SYSTEM

W

MAKE-UP MECHANISMS

Self-assessment

50%

(No mechanisms)

Co-assessment

50%

CH - Class hours: 0 h.

NCH - Non-class hours: 3 h.

TH - Total hours: 3 h.

CONTENTS

1. Elementary functions and operations 2. Complex numbers 3. Derivation and its applications 4. Integration and its applications

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources

[!] *Plataforma Moodle*

Bibliography

http://katalogoa.mondragon.edu/janium-bin/janium_login_opac_re_in

[!] *Realización de prácticas en ordenador*

[k.pl?grupo=EKOTEKNOLOGIA11&ejecuta=5](#)

[!] *Transparencias de la asignatura*