

[GCI301] ENVIRONMENTAL SCIENCE AND TECHNOLOGY

GENERAL INFORMATION

Studies	DEGREE IN ENGINEERING IN ECO-TECHNOLOGY IN INDUSTRIAL PROCESS		Subject	?
Semester	1	Course	3	Mention / Field of specialisation
Character	COMPULSORY		Language	ENGLISH
Plan	2022	Modality	Face-to-face	Total hours 48 class hours + 102 non-class hours = 150 total hours
Credits	6	Hours/week	2.67	

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
GCR308 - Determines the most appropriate treatment techniques for the management and reduction of contaminants considering their nature		x		5,08
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		0,44
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		0,48
Total:				6

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

SECONDARY LEARNING RESULTS

RG322 Understanding of the nature of impurities in waters and wastewaters, the basic principles of conventional treatment processes, and select and applicate the appropriate processes depending on the nature of the impurities to be removed

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	5 h.	8 h.	13 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	2 h.	15 h.	17 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
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	25%
Individual written and/or oral tests or individual coding/programming tests	75%

Comments: - If in class the average of the quizzes realized with Safe Exam Browser is higher than 8.0, no written exam should be taken and the average mark of the quizzes will be that of the written exam. - In order to calculate the average, a minimum mark of 3.0 is necessary in the written exam.

MAKE-UP MECHANISMS

Individual written and/or oral tests or individual coding/programming tests
Comments: The final mark is obtained as follows: 25 % written exam + 75 % retake

CH - Class hours: 24 h.
NCH - Non-class hours: 23 h.
TH - Total hours: 47 h.

1RGC391 (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

TH

4 h.

4 h.

EVALUATION SYSTEM

W

Self-assessment

50%

Co-assessment

50%

Comments: Assessment of the acquired transversal skills:

Followed methodology to solve the project: team work, decision

making methods, conflict management... Project management:

definition of objectives, planning,... Written and oral communication

MAKE-UP MECHANISMS

(No mechanisms)

Comments: Continuous assessment. The project is managed through the tutoring meetings and the meetings held with the experts, errors are corrected and the precise guidelines are given to overcome the project.

CH - Class hours: 0 h.

NCH - Non-class hours: 4 h.

TH - Total hours: 4 h.

1RGC394 (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

TH

6 h.

6 h.

EVALUATION SYSTEM

W

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: Assessment of the acquired transversal skills:

Followed methodology to solve the project: team work, decision

making methods, conflict management... Project management:

definition of objectives, planning,... Written and oral communication

MAKE-UP MECHANISMS

(No mechanisms)

Comments: Continuous assessment. The project is managed through the tutoring meetings and the meetings held with the experts, errors are corrected and the precise guidelines are given to overcome the project.

CH - Class hours: 0 h.

NCH - Non-class hours: 6 h.

TH - Total hours: 6 h.

RGC329 [!] Conoce las técnicas de tratamientos de residuos sólidos según su naturaleza

LEARNING ACTIVITIES

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

CH

NCH

TH

1 h.

7 h.

8 h.

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

12 h.

12 h.

EVALUATION SYSTEM

W

Individual written and/or oral tests or individual

coding/programming tests

100%

Comments: - If in class the average of the quizzes realized with Safe Exam Browser is higher than 8.0, no written exam should be taken and the average mark of the quizzes will be that of the written exam. - In order to calculate the average, a minimum mark of 3.0 is necessary in the written exam.

MAKE-UP MECHANISMS

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

Comments: The final mark is obtained as follows: 25 % written exam + 75 % retake

CH - Class hours: 13 h.
NCH - Non-class hours: 7 h.
TH - Total hours: 20 h.

1RGC393 (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

6 h.

6 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)

Comments: Assessment of the acquired transversal skills:

Followed methodology to solve the project: team work, decision

making methods, conflict management... Project management:

definition of objectives, planning,... Written and oral communication

Comments: Continuous assessment. The project is managed through the tutoring meetings and the meetings held with the experts, errors are corrected and the precise guidelines are given to overcome the project.

CH - Class hours: 0 h.

NCH - Non-class hours: 6 h.

TH - Total hours: 6 h.

RGC323 [!] *Conoce los principios científicos que caracteriza el comportamiento físico y químico de los contaminantes atmosféricos y las tecnologías disponibles para el control de las emisiones.*

LEARNING ACTIVITIES

CH

NCH

TH

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

1 h.

9 h.

10 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

40 h.

40 h.

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

10 h.

10 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

67%

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

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

33%

Comments: The final mark is obtained as follows: 25 % written exam + 75 % retake

Comments: - If in class the average of the quizzes realized with

Safe Exam Browser is higher than 8.0, no written exam should be

taken and the average mark of the quizzes will be that of the written

exam. - In order to calculate the average, a minimum mark of 3.0 is

neccessary in the written exam.

CH - Class hours: 11 h.

NCH - Non-class hours: 49 h.

TH - Total hours: 60 h.

1RGC390 (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

4 h.

4 h.

EVALUATION SYSTEM

W

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

100%

Comments: Assessment of the acquired transversal skills:

Followed methodology to solve the project: team work, decision making methods, conflict management... Project management: definition of objectives, planning,... Written and oral communication

MAKE-UP MECHANISMS

(No mechanisms)

Comments: Continuous assessment. The project is managed through the tutoring meetings and the meetings held with the experts, errors are corrected and the precise guidelines are given to overcome the project.

CH - Class hours: 0 h.

NCH - Non-class hours: 4 h.

TH - Total hours: 4 h.

1RG392 (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

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

100%

Comments: Assessment of the acquired transversal skills:

Followed methodology to solve the project: team work, decision making methods, conflict management... Project management: definition of objectives, planning,... Written and oral communication

MAKE-UP MECHANISMS

(No mechanisms)

Comments: Continuous assessment. The project is managed through the tutoring meetings and the meetings held with the experts, errors are corrected and the precise guidelines are given to overcome the project.

CH - Class hours: 0 h.

NCH - Non-class hours: 3 h.

TH - Total hours: 3 h.

CONTENTS

1. Solid waste: definition and classification.
2. Municipal solid waste treatment.
3. Treatment of specific solid wastes.
4. Constituents in wastewater
5. Primary wastewater treatment
6. Secondary wastewater treatment
7. Secondary wastewater treatment
8. Industrial wastewater treatment
9. Air pollutant constituents
10. Particulate matter treatment
11. Gas control systems

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources

- [!] *Plataforma Moodle*
- [!] *Proyección de videos*
- [!] *Transparencias de la asignatura*
- [!] *Consultas en páginas web relacionadas con el tema*

Bibliography

http://katalogoa.mondragon.edu/janium-bin/janium_login_opac_re_Ink.pl?grupo=EKOTEKNOLOGIA31&ejecuta=5