

## [GCK106] ENVIRONMENTAL PROCESS OPTIMISATION FORMING

### GENERAL INFORMATION

|                  |   |                   |                         |   |
|------------------|---|-------------------|-------------------------|---|
| <b>Studies</b>   | DEGREE IN ENGINEERING IN ECO-TECHNOLOGY IN INDUSTRIAL PROCESS |                   | <b>Subject</b>          | ENVIRONMENTAL PROCESS OPTIMISATION                            |
| <b>Semester</b>  | 2   | <b>Course</b>     | 3                       | <b>Mention / Field of specialisation</b>                      |
| <b>Character</b> | COMPULSORY  |                   | <b>Language</b>         | EUSKARA   |
| <b>Plan</b>      | 2017  | <b>Modality</b>   | Adapted<br>Face-to-face | <b>Total hours</b>  |
| <b>Credits</b>   | 6   | <b>Hours/week</b> | 2.56                    | 46 class hours + 104 non-class hours = <b>150 total hours</b> |

### PROFESSORS

SUQUIA IMAZ, AITOR

### REQUIRED PREVIOUS KNOWLEDGE

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

### SKILLS

#### VERIFICA SKILLS

##### SPECIFIC

**GCES03** - To be able to apply knowledge of manufacturing processes and systems, metrology and quality control.

**GCIN10** - To have basic knowledge of and ability to apply environmental and sustainability technologies.

##### GENERAL

**G\_CB6** - To be able to respond adequately in complex situations or situations that call for innovative solutions in both the academic field and work environments within their field of study;

**GCCG03** - To take the initiative in problem solving, decision making and creativity, and to communicate and share knowledge and skills, understanding the ethical and professional responsibilities of the business activity in the field of Ecotechnology Engineering in Industrial Processes.

**GCCG1** - To have the knowledge, understanding and ability to apply the laws pertaining to Ecotechnology Engineering in Industrial Processes; to be able to comply with the specifications, standards and regulations in force.

**GCCG4** - To know how to perform measurements, calculations, valuations, studies, reports, task planning, and other activities pertaining to the field of Ecotechnology Engineering in Industrial Processes

**GCCG5** - To be able to analyse and assess the social and environmental impact of technical solutions.

**GCCG8** - To draft and develop projects in the field of Ecotechnology Engineering in Industrial Processes, focusing on the the design and development and on the application of systems, technologies and strategies in the industrial processes which minimise their impact on the environment.

##### CROSS

**GCCTR2** - To be able to do their job in cooperative, participatory environments, with awareness of social responsibility.

##### BASIC

**G\_CB2** - To be able to apply knowledge to occupational or professional tasks; have the necessary skills to pose and defend arguments, and to solve problems within their field of study

**G\_CB3** - To be capable of gathering and interpreting relevant data (normally within their field of study) in order to make judgements, reflecting on relevant matters of a social, scientific or ethical nature

**G\_CB4** - To be able to communicate information, ideas, problems and solutions to both expert and lay audiences

### LEARNING RESULTS

**RG301** Assumes responsibilities in the work team, organizing and planning the tasks to be developed, facing the contingencies and encouraging the participation of its members.

#### 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

Self-assessment  
Co-assessment

W

50%  
50%

#### MAKE-UP MECHANISMS

(No mechanisms)

CH - Class hours: 0 h.

NCH - Non-class hours: 6 h.

TH - Total hours: 6 h.

**RG302** Analyze the intervening variables in the problem and propose actions for a stable situation.

| 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. | 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  | 100% | (No mechanisms)    |      |      |

**CH - Class hours:** 0 h.  
**NCH - Non-class hours:** 5 h.  
**TH - Total hours:** 5 h.

**RG304** Define the problem, develop the solution and present the conclusions in a efficient manner, arguing and justifying each one of them in writing.

| 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)    |      |      |

**CH - Class hours:** 0 h.  
**NCH - Non-class hours:** 6 h.  
**TH - Total hours:** 6 h.

**RG305** Define the problem, develop the solution and present the conclusions in a efficient manner, arguing and justifying each one of them in spoken form.

| 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 |      |      |
| 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:** 6 h.  
**TH - Total hours:** 6 h.

**RGC311** [!] *Conoce las características de los procesos avanzados de conformado, así como tecnologías limpias existentes para minimizar su impacto medioambiental*

| LEARNING ACTIVITIES   | CH    | NCH   | TH    |
|---|-------|---|-------|
| Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints                       | 2 h.  | 9 h.  | 11 h. |
| Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects | 5 h.  |   | 5 h.  |
| Carrying out exercises and solving problems individually and/or in teams  | 12 h. | 12 h.   | 24 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: 19 h.

NCH - Non-class hours: 21 h.

TH - Total hours: 40 h.

**RGC312** [!] *Caracteriza y optimiza los procesos de conformado, teniendo en cuenta las variables de entrada del proceso*

| LEARNING ACTIVITIES  | CH    | NCH   | TH    |
|--|-------|---|-------|
| Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints  | 2 h.  | 13 h.   | 15 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 | 15 h. | 10 h.   | 25 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               | 50%   | Individual written and/or oral tests or individual coding/programming tests |       |
| Individual written and/or oral tests or individual coding/programming tests  | 50%   |   |       |

CH - Class hours: 27 h.

NCH - Non-class hours: 23 h.

TH - Total hours: 50 h.

**RGC313** [!] *Aplica los conocimientos de conformado a la fabricación de un prototipo*

| 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 |      | 37 h.              | 37 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: 37 h.

TH - Total hours: 37 h.

CONTENTS

## LEARNING RESOURCES AND BIBLIOGRAPHY

### Learning resources

Subject notes  
Technical articles

### Bibliography

[http://katalogoa.mondragon.edu/janium-bin/janium\\_login\\_opac\\_re\\_in  
k.pl?grupo=EKOTEKNOLOGIA32&ejecuta=10](http://katalogoa.mondragon.edu/janium-bin/janium_login_opac_re_in<br/>k.pl?grupo=EKOTEKNOLOGIA32&ejecuta=10)