

[GBX202] DATA PROCESSING

GENERAL INFORMATION

| | | | | | |
|------------------|----------------------------------|-------------------|----------------|--|---|
| Studies | DEGREE IN BIOMEDICAL ENGINEERING | | Subject | ? | |
| Semester | 2 | Course | 3 | Mention / Field of specialisation | |
| Character | COMPULSORY | | | | |
| Plan | 2022 | Modality | Face-to-face | Language | ENGLISH |
| Credits | 3 | Hours/week | 2.61 | Total hours | 46.92 class hours + 28.08 non-class hours = 75 total hours |

2030 AGENDA GOALS



PROFESSORS

ALBERDI ARAMENDI, ANE

REQUIRED PREVIOUS KNOWLEDGE

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

LEARNING RESULTS

| LEARNING RESULTS | KC | SK | AB | ECTS |
|---|----|----|----|----------|
| GBR310 - To use data processing techniques for use in bioinformatics applications | | | x | 2,56 |
| 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 | | 0,2 |
| 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: | | | | 3 |

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

SECONDARY LEARNING RESULTS

2RGB393 Prepare the project report, providing detailed arguments and using language that is correct, inclusive, and non-discriminatory.

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 | 1,88 h. | 1,12 h. | 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

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems
Observation (technical capacity, attitude and participation)

CH - Class hours: 1,88 h.

NCH - Non-class hours: 1,12 h.

TH - Total hours: 3 h.

RGB323 Learn about and understand data mining and analysis tools and techniques.

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. | 2 h. | 5 h. |

Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects 7,63 h. 4,37 h. 12 h.

EVALUATION SYSTEM

| | |
|--|-----|
| Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems | 38% |
| Individual written and/or oral tests or individual coding/programming tests | 62% |

MAKE-UP MECHANISMS

Individual written and/or oral tests or individual coding/programming tests
Comments: The student will have to do a make-up examination.

CH - Class hours: 10,63 h.
NCH - Non-class hours: 6,37 h.
TH - Total hours: 17 h.

2RGB391 Coordinate the work team, promoting cohesion and a positive atmosphere to achieve the integration of all individuals and their contribution to achieving appropriate performance, both individually and as a group, for the development of th

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 | 1,25 h. | ,75 h. | 2 h. |
|---|---------|--------|------|

EVALUATION SYSTEM

| | |
|--|-----|
| Self-assessment | 25% |
| Co-assessment | 25% |
| Observation (technical capacity, attitude and participation) | 50% |

MAKE-UP MECHANISMS

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems
 Observation (technical capacity, attitude and participation)

CH - Class hours: 1,25 h.
NCH - Non-class hours: ,75 h.
TH - Total hours: 2 h.

2RGB392 Identify and accurately discuss the SDGs that the project addresses, suggesting possible actions for improvement. "

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 | ,63 h. | ,37 h. | 1 h. |
|---|--------|--------|------|

EVALUATION SYSTEM

| | |
|--|------|
| Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems | 100% |
|--|------|

MAKE-UP MECHANISMS

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems
 Observation (technical capacity, attitude and participation)

CH - Class hours: ,63 h.
NCH - Non-class hours: ,37 h.
TH - Total hours: 1 h.

RGB324 Select and apply data mining and analysis tools and techniques in real-world contexts in a reasoned manner.

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 | 9 h. | 5 h. | 14 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 | 12,4 h. | 7,6 h. | 20 h. |
| Carrying out exercises and solving problems individually and/or in teams | 8 h. | 5 h. | 13 h. |

EVALUATION SYSTEM

W

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

27%

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

73%

MAKE-UP MECHANISMS

(No mechanisms)

Comments: The final work will have to be resubmitted

CH - Class hours: 29,4 h.

NCH - Non-class hours: 17,6 h.

TH - Total hours: 47 h.

2RGB390 Define and manage the objectives and planning of a project that allows you to acquire and/or reinforce your knowledge of technologies—sometimes reaching the cutting edge of knowledge—and define an effective self-learning strategy.

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

1,25 h.

,75 h.

2 h.

EVALUATION SYSTEM

W

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

100%

MAKE-UP MECHANISMS

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

Observation (technical capacity, attitude and participation)

CH - Class hours: 1,25 h.

NCH - Non-class hours: ,75 h.

TH - Total hours: 2 h.

2RGB394 Give an oral presentation of the project, justifying the proposed solutions with detailed and precise arguments, and using language that is correct, inclusive, and non-discriminatory.

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

1,88 h.

1,12 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%

MAKE-UP MECHANISMS

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

Observation (technical capacity, attitude and participation)

CH - Class hours: 1,88 h.

NCH - Non-class hours: 1,12 h.

TH - Total hours: 3 h.

CONTENTS

1. Introduction
 2. Data collection
 3. Exploratory data analysis and data preprocessing
 4. Data analysis
 5. Statistical analysis
 6. Machine learning

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources

- [!] *Transparencias de la asignatura*
- [!] *Realización de prácticas en ordenador*
- [!] *Consultas en páginas web relacionadas con el tema*
- [!] *Artículos de carácter técnico*
- [!] *Plataforma Moodle*

Bibliography

- Data Mining: Practical Machine Learning Tools and Techniques, Second Edition Ian Witten and Eibe Frank
- Data Mining. Concepts and Techniques, Second Edition. Jiawei Han and Micheline Kamber.