



## (\*)Facultade de Química

### Presentation

The studies of Chemistry have a large tradition at the University of Vigo, where it has been taught during more than 30 years. The establishment of the University System of Galicia in the 90s and the current process of implantation of the European Space of Higher Education (EEES) modified the offer of degrees, but not the pioneering spirit of the chemists in research or in the quest for a better service to the society.



### Degrees given in the Faculty

Degree in Chemistry

- Masters And Doctorates:
  - Industry and Chemical Research and Industrial Chemistry
  - Theoretical chemistry and Computational Modelling
- Master:
  - Science and Technology of Conservation of Fishing Products

### Web page

Information about the Faculty of Chemistry:

<http://quimica.uvigo.es>

## Máster Universitario en Investigación Química y Química Industrial

### Subjects

#### Year 1st

| Code          | Name                                    | Quadmester | Total Cr. |
|---------------|-----------------------------------------|------------|-----------|
| V11M162V02103 | Advanced Structural Determination       | 1st        | 3         |
| V11M162V02104 | Industrial Processes and Sustainability | 1st        | 3         |
| V11M162V02107 | Supramolecular Chemistry                | 2nd        | 3         |
| V11M162V02110 | Applied Coordination Chemistry          | 1st        | 3         |
| V11M162V02111 | Organometallic Chemistry                | 1st        | 3         |

|               |                                                           |     |    |
|---------------|-----------------------------------------------------------|-----|----|
| V11M162V02112 | Synthetic Applications of Organometallic Compounds        | 2nd | 3  |
| V11M162V02113 | Stereoselective Synthesis                                 | 1st | 3  |
| V11M162V02115 | Chemistry of Biomolecules                                 | 1st | 3  |
| V11M162V02116 | Metals in Biological Processes                            | 1st | 3  |
| V11M162V02117 | Medicinal Chemistry                                       | 2nd | 3  |
| V11M162V02119 | The Chemistry of Natural Products                         | 2nd | 3  |
| V11M162V02120 | Preparation of Nanomaterials                              | 1st | 3  |
| V11M162V02121 | Advanced Techniques for the Characterization of Materials | 2nd | 3  |
| V11M162V02122 | Properties of Materials                                   | 1st | 3  |
| V11M162V02128 | Chromatography and Analytical Separation                  | 2nd | 3  |
| V11M162V02129 | Industrial Chemistry: Process control                     | 2nd | 3  |
| V11M162V02130 | Quality in the Chemistry Laboratory                       | 1st | 3  |
| V11M162V02131 | Industrial Safety                                         | 1st | 3  |
| V11M162V02132 | Management in Chemical Industry                           | 1st | 3  |
| V11M162V02133 | Industrial Legislation                                    | 2nd | 3  |
| V11M162V02134 | Economics and Industry                                    | 1st | 3  |
| V11M162V02135 | Human Resources                                           | 1st | 3  |
| V11M162V02138 | Project Management                                        | 1st | 3  |
| V11M162V02140 | Validation of analytical methodologies                    | 1st | 3  |
| V11M162V02141 | Characterisation of materials and biointerfaces           | 1st | 3  |
| V11M162V02142 | Scientific transfer and communication                     | 1st | 3  |
| V11M162V02143 |                                                           | 1st | 3  |
| V11M162V02144 |                                                           | 2nd | 3  |
| V11M162V02145 |                                                           | 2nd | 3  |
| V11M162V02146 |                                                           | 1st | 3  |
| V11M162V02147 |                                                           | 1st | 3  |
| V11M162V02148 | Initiation to research                                    | An  | 6  |
| V11M162V02149 | Clinical and methodological analyzes                      | 1st | 3  |
| V11M162V02150 | Polymeric molecular materials                             | 1st | 3  |
| V11M162V02151 |                                                           | 2nd | 3  |
| V11M162V02152 |                                                           | 1st | 3  |
| V11M162V02153 |                                                           | 1st | 3  |
| V11M162V02154 |                                                           | 2nd | 3  |
| V11M162V02155 |                                                           | 1st | 3  |
| V11M162V02156 | Final Dissertation                                        | 2nd | 24 |

| IDENTIFYING DATA                  |                                                                                                                                                                                                                                                                                                                                                                                                                                 |           |      |            |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------|------------|
| Advanced Structural Determination |                                                                                                                                                                                                                                                                                                                                                                                                                                 |           |      |            |
| Subject                           | Advanced Structural Determination                                                                                                                                                                                                                                                                                                                                                                                               |           |      |            |
| Code                              | V11M162V02103                                                                                                                                                                                                                                                                                                                                                                                                                   |           |      |            |
| Study programme                   | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                              |           |      |            |
| Descriptors                       | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                                    | Choose    | Year | Quadmester |
|                                   | 3                                                                                                                                                                                                                                                                                                                                                                                                                               | Mandatory | 1st  | 1st        |
| Teaching language                 | Spanish<br>Galician                                                                                                                                                                                                                                                                                                                                                                                                             |           |      |            |
| Department                        |                                                                                                                                                                                                                                                                                                                                                                                                                                 |           |      |            |
| Coordinator                       | Muñoz López, Luis                                                                                                                                                                                                                                                                                                                                                                                                               |           |      |            |
| Lecturers                         | Muñoz López, Luis<br>Talavera Nevado, María                                                                                                                                                                                                                                                                                                                                                                                     |           |      |            |
| E-mail                            | Imunoz@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                                                 |           |      |            |
| Web                               | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                                       |           |      |            |
| General description               | The subject guide is available at the following link<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/advanced-strutural-determination-17767-17013-2-95796">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/advanced-strutural-determination-17767-17013-2-95796</a> |           |      |            |

### Training and Learning Results

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|------|--|
| Code |  |
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### Expected results from this subject

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|------------------------------------|-------------------------------|
| Expected results from this subject | Training and Learning Results |
|------------------------------------|-------------------------------|

### Contents

|       |  |
|-------|--|
| Topic |  |
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### Planning

|  | Class hours | Hours outside the classroom | Total hours |
|--|-------------|-----------------------------|-------------|
|--|-------------|-----------------------------|-------------|

\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

### Methodologies

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| Description |  |
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### Personalized assistance

### Assessment

|             |               |                               |
|-------------|---------------|-------------------------------|
| Description | Qualification | Training and Learning Results |
|-------------|---------------|-------------------------------|

### Other comments on the Evaluation

### Sources of information

#### Basic Bibliography

#### Complementary Bibliography

### Recommendations

| IDENTIFYING DATA                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                |           |      |            |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------|------------|
| Industrial Processes and Sustainability |                                                                                                                                                                                                                                                                                                                                                                                                                                                |           |      |            |
| Subject                                 | Industrial Processes and Sustainability                                                                                                                                                                                                                                                                                                                                                                                                        |           |      |            |
| Code                                    | V11M162V02104                                                                                                                                                                                                                                                                                                                                                                                                                                  |           |      |            |
| Study programme                         | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                                             |           |      |            |
| Descriptors                             | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                                                   | Choose    | Year | Quadmester |
|                                         | 3                                                                                                                                                                                                                                                                                                                                                                                                                                              | Mandatory | 1st  | 1st        |
| Teaching language                       | Spanish                                                                                                                                                                                                                                                                                                                                                                                                                                        |           |      |            |
| Department                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                |           |      |            |
| Coordinator                             | Souto Salgado, José Antonio                                                                                                                                                                                                                                                                                                                                                                                                                    |           |      |            |
| Lecturers                               | Novoa Carballal, Ramón<br>Souto Salgado, José Antonio                                                                                                                                                                                                                                                                                                                                                                                          |           |      |            |
| E-mail                                  | souto@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                                                                 |           |      |            |
| Web                                     | <a href="http://http://quimica.uvigo.es/es/estudios/master-iqqi/">http://http://quimica.uvigo.es/es/estudios/master-iqqi/</a>                                                                                                                                                                                                                                                                                                                  |           |      |            |
| General description                     | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/industrial-processes-and-sustainability-17767-17013-2-95797">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/industrial-processes-and-sustainability-17767-17013-2-95797</a> |           |      |            |

| Training and Learning Results |  |
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| Code                          |  |

| Expected results from this subject |                               |
|------------------------------------|-------------------------------|
| Expected results from this subject | Training and Learning Results |

| Contents |  |
|----------|--|
| Topic    |  |

| Planning |             |                             |             |
|----------|-------------|-----------------------------|-------------|
|          | Class hours | Hours outside the classroom | Total hours |

\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

| Methodologies |             |
|---------------|-------------|
|               | Description |

| Personalized assistance |  |
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| Assessment  |               |                               |
|-------------|---------------|-------------------------------|
| Description | Qualification | Training and Learning Results |

| Other comments on the Evaluation |  |
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| Sources of information     |  |
|----------------------------|--|
| Basic Bibliography         |  |
| Complementary Bibliography |  |

| Recommendations |  |
|-----------------|--|
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| IDENTIFYING DATA         |                                                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| Supramolecular Chemistry |                                                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
| Subject                  | Supramolecular Chemistry                                                                                                                                                                                                                                                                                                                                                                                                 |          |      |            |
| Code                     | V11M162V02107                                                                                                                                                                                                                                                                                                                                                                                                            |          |      |            |
| Study programme          | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                       |          |      |            |
| Descriptors              | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                             | Choose   | Year | Quadmester |
|                          | 3                                                                                                                                                                                                                                                                                                                                                                                                                        | Optional | 1st  | 2nd        |
| Teaching language        | Spanish<br>Galician                                                                                                                                                                                                                                                                                                                                                                                                      |          |      |            |
| Department               |                                                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
| Coordinator              | Cid Fernández, María Magdalena                                                                                                                                                                                                                                                                                                                                                                                           |          |      |            |
| Lecturers                | Cid Fernández, María Magdalena<br>Valencia Matarranz, Laura María                                                                                                                                                                                                                                                                                                                                                        |          |      |            |
| E-mail                   | mcid@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                                            |          |      |            |
| Web                      | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                                |          |      |            |
| General description      | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2023-2024/supramolecular-chemistry-op-17769-17015-3-91602">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2023-2024/supramolecular-chemistry-op-17769-17015-3-91602</a> |          |      |            |

## Training and Learning Results

| Code                               |                               |
|------------------------------------|-------------------------------|
| Expected results from this subject |                               |
| Expected results from this subject | Training and Learning Results |

## Contents

|       |  |
|-------|--|
| Topic |  |
|-------|--|

## Planning

|                                                                                                                               | Class hours | Hours outside the classroom | Total hours |
|-------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------|-------------|
| *The information in the planning table is for guidance only and does not take into account the heterogeneity of the students. |             |                             |             |

## Methodologies

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| Description |  |
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## Personalized assistance

## Assessment

|             |               |                               |
|-------------|---------------|-------------------------------|
| Description | Qualification | Training and Learning Results |
|-------------|---------------|-------------------------------|

## Other comments on the Evaluation

## Sources of information

### Basic Bibliography

### Complementary Bibliography

## Recommendations

| IDENTIFYING DATA               |                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |      |            |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| Applied Coordination Chemistry |                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |      |            |
| Subject                        | Applied Coordination Chemistry                                                                                                                                                                                                                                                                                                                                                                                                   |          |      |            |
| Code                           | V11M162V02110                                                                                                                                                                                                                                                                                                                                                                                                                    |          |      |            |
| Study programme                | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                               |          |      |            |
| Descriptors                    | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                                     | Choose   | Year | Quadmester |
|                                | 3                                                                                                                                                                                                                                                                                                                                                                                                                                | Optional | 1st  | 1st        |
| Teaching language              | Spanish<br>Galician                                                                                                                                                                                                                                                                                                                                                                                                              |          |      |            |
| Department                     |                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |      |            |
| Coordinator                    | Vázquez López, Ezequiel Manuel<br>Pérez Lourido, Paulo Antonio                                                                                                                                                                                                                                                                                                                                                                   |          |      |            |
| Lecturers                      | Pérez Lourido, Paulo Antonio<br>Vázquez López, Ezequiel Manuel                                                                                                                                                                                                                                                                                                                                                                   |          |      |            |
| E-mail                         | ezequiel@uvigo.es<br>paulo@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                              |          |      |            |
| Web                            | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                                        |          |      |            |
| General description            | The subject guide is available at the following link:<br><br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/applied-coordination-chemistry-17769-17015-3-95799">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/applied-coordination-chemistry-17769-17015-3-95799</a> |          |      |            |

| Training and Learning Results |
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| Code                          |

| Expected results from this subject |
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| Expected results from this subject |
| Training and Learning Results      |

| Contents |
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| Topic    |

| Planning |             |                             |             |
|----------|-------------|-----------------------------|-------------|
|          | Class hours | Hours outside the classroom | Total hours |

\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

| Methodologies |
|---------------|
| Description   |

| Personalized assistance |
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| Assessment  |               |                               |
|-------------|---------------|-------------------------------|
| Description | Qualification | Training and Learning Results |

| Other comments on the Evaluation |
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| Sources of information     |
|----------------------------|
| Basic Bibliography         |
| Complementary Bibliography |

| Recommendations |
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| IDENTIFYING DATA                |                                                                                                                                                                                                                                                                                                                                                                                                                    |          |      |            |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| <b>Organometallic Chemistry</b> |                                                                                                                                                                                                                                                                                                                                                                                                                    |          |      |            |
| Subject                         | Organometallic Chemistry                                                                                                                                                                                                                                                                                                                                                                                           |          |      |            |
| Code                            | V11M162V02111                                                                                                                                                                                                                                                                                                                                                                                                      |          |      |            |
| Study programme                 | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                 |          |      |            |
| Descriptors                     | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                       | Choose   | Year | Quadmester |
|                                 | 3                                                                                                                                                                                                                                                                                                                                                                                                                  | Optional | 1st  | 1st        |
| Teaching language               | Spanish                                                                                                                                                                                                                                                                                                                                                                                                            |          |      |            |
| Department                      |                                                                                                                                                                                                                                                                                                                                                                                                                    |          |      |            |
| Coordinator                     | García Fontán, María Soledad<br>Bolaño García, Sandra                                                                                                                                                                                                                                                                                                                                                              |          |      |            |
| Lecturers                       | Bolaño García, Sandra<br>García Fontán, María Soledad<br>Talavera Nevado, María                                                                                                                                                                                                                                                                                                                                    |          |      |            |
| E-mail                          | sgarcia@uvigo.es<br>bgs@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                   |          |      |            |
| Web                             | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                          |          |      |            |
| General description             | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2023-2024/organometallic-chemistry-17769-17015-3-95800">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2023-2024/organometallic-chemistry-17769-17015-3-95800</a> |          |      |            |

| Training and Learning Results |  |
|-------------------------------|--|
| Code                          |  |

| Expected results from this subject |                               |
|------------------------------------|-------------------------------|
| Expected results from this subject | Training and Learning Results |

| Contents |  |
|----------|--|
| Topic    |  |

| Planning |             |                             |             |
|----------|-------------|-----------------------------|-------------|
|          | Class hours | Hours outside the classroom | Total hours |

\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

| Methodologies |             |
|---------------|-------------|
|               | Description |

| Personalized assistance |  |
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| Assessment  |               |                               |
|-------------|---------------|-------------------------------|
| Description | Qualification | Training and Learning Results |

| Other comments on the Evaluation |  |
|----------------------------------|--|
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| Sources of information            |  |
|-----------------------------------|--|
| <b>Basic Bibliography</b>         |  |
| <b>Complementary Bibliography</b> |  |

| Recommendations |  |
|-----------------|--|
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| IDENTIFYING DATA                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |      |            |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| Synthetic Applications of Organometallic Compounds |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |      |            |
| Subject                                            | Synthetic Applications of Organometallic Compounds                                                                                                                                                                                                                                                                                                                                                                                                             |          |      |            |
| Code                                               | V11M162V02112                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |      |            |
| Study programme                                    | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                                                             |          |      |            |
| Descriptors                                        | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Choose   | Year | Quadmester |
|                                                    | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Optional | 1st  | 2nd        |
| Teaching language                                  | Spanish<br>Galician                                                                                                                                                                                                                                                                                                                                                                                                                                            |          |      |            |
| Department                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |      |            |
| Coordinator                                        | Álvarez Rodríguez, Rosana                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |      |            |
| Lecturers                                          | Álvarez Rodríguez, Rosana<br>Martínez Fernández, Claudio                                                                                                                                                                                                                                                                                                                                                                                                       |          |      |            |
| E-mail                                             | rar@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                                                                                   |          |      |            |
| Web                                                | <a href="http://http://miqqi.webs.uvigo.es/es/">http://http://miqqi.webs.uvigo.es/es/</a>                                                                                                                                                                                                                                                                                                                                                                      |          |      |            |
| General description                                | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/synthetic-applications-organometallic-compounds-17769-17015-3-95801">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/synthetic-applications-organometallic-compounds-17769-17015-3-95801</a> |          |      |            |

### Training and Learning Results

| Code                               |                               |
|------------------------------------|-------------------------------|
| Expected results from this subject |                               |
| Expected results from this subject | Training and Learning Results |
| New                                |                               |
| New                                |                               |
| New                                |                               |

### Contents

|                                                                                |  |
|--------------------------------------------------------------------------------|--|
| Topic                                                                          |  |
| (*)1. Reacciones de acoplamiento cruzado e reacción de Heck                    |  |
| (*)2. Reacciones de inserción                                                  |  |
| (*)3. Reacciones de complejos $\pi^3$ -alilo                                   |  |
| (*)4. Reacciones de complejos metálicos de alquenos, alquinos, dienos e arenas |  |
| (*)5. Reactividade dos carbenos metálicos                                      |  |
| (*)6. Reacciones de activación de enlaces CH.                                  |  |

### Planning

|                                 | Class hours | Hours outside the classroom | Total hours |
|---------------------------------|-------------|-----------------------------|-------------|
| Seminars                        | 11          | 21                          | 32          |
| Lecturing                       | 10          | 21                          | 31          |
| Problem and/or exercise solving | 2           | 10                          | 12          |

\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

### Methodologies

|           | Description                                                                                                              |
|-----------|--------------------------------------------------------------------------------------------------------------------------|
| Seminars  | (*)Realizaranse exercicios de cada tema, ben empregando o encerado o ben de maneira individual                           |
| Lecturing | (*)Empregarase material adiantado aos alumnos para introducir as reaccións de cada tema.<br>Empregarase tamén o encerado |

### Personalized assistance

| Methodologies | Description |
|---------------|-------------|
| Lecturing     |             |
| Seminars      |             |
| Tests         | Description |



Problem and/or exercise solving

| Assessment                      |                                                                                                                                            |               |                               |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------------|
|                                 | Description                                                                                                                                | Qualification | Training and Learning Results |
| Seminars                        | (*)Durante as sesións do seminario, proporase aos alumnos unha serie de problemas adicionais que terán que ser entregados na data acordada | 20            |                               |
| Problem and/or exercise solving | (*)Ao final da materia haberá unha proba escrita de 2-3 horas.                                                                             | 80            |                               |

#### Other comments on the Evaluation

#### Sources of information

##### Basic Bibliography

Bates, R., **Organic Synthesis Using Transition Metals**, 2nd, wiley, 2012

Hegedus, L. S., **Transition Metals in the Synthesis of Complex Organic Molecules**, 2nd, University Science Books, 1999

##### Complementary Bibliography

#### Recommendations

#### Subjects that it is recommended to have taken before

Applied Coordination Chemistry/V11M162V02110

Organometallic Chemistry/V11M162V02111

| IDENTIFYING DATA          |                                                                                                                                                                                                                                                                                                                                                                                                                            |          |      |            |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| Stereoselective Synthesis |                                                                                                                                                                                                                                                                                                                                                                                                                            |          |      |            |
| Subject                   | Stereoselective Synthesis                                                                                                                                                                                                                                                                                                                                                                                                  |          |      |            |
| Code                      | V11M162V02113                                                                                                                                                                                                                                                                                                                                                                                                              |          |      |            |
| Study programme           | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                         |          |      |            |
| Descriptors               | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                               | Choose   | Year | Quadmester |
|                           | 3                                                                                                                                                                                                                                                                                                                                                                                                                          | Optional | 1st  | 1st        |
| Teaching language         | Spanish                                                                                                                                                                                                                                                                                                                                                                                                                    |          |      |            |
| Department                |                                                                                                                                                                                                                                                                                                                                                                                                                            |          |      |            |
| Coordinator               | Rodríguez de Lera, Angel                                                                                                                                                                                                                                                                                                                                                                                                   |          |      |            |
| Lecturers                 | Rodríguez de Lera, Angel<br>Vaz Araújo, Belén                                                                                                                                                                                                                                                                                                                                                                              |          |      |            |
| E-mail                    | qolera@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                                            |          |      |            |
| Web                       | <a href="http://http://miqqi.webs.uvigo.es/es/">http://http://miqqi.webs.uvigo.es/es/</a>                                                                                                                                                                                                                                                                                                                                  |          |      |            |
| General description       | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2023-2024/stereoselective-synthesis-op-17769-17015-3-91607">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2023-2024/stereoselective-synthesis-op-17769-17015-3-91607</a> |          |      |            |

## Training and Learning Results

| Code                               |                               |
|------------------------------------|-------------------------------|
| Expected results from this subject |                               |
| Expected results from this subject | Training and Learning Results |

## Contents

|       |  |
|-------|--|
| Topic |  |
|-------|--|

## Planning

|                                                                                                                               | Class hours | Hours outside the classroom | Total hours |
|-------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------|-------------|
| *The information in the planning table is for guidance only and does not take into account the heterogeneity of the students. |             |                             |             |

## Methodologies

|             |  |
|-------------|--|
| Description |  |
|-------------|--|

## Personalized assistance

## Assessment

|             |               |                               |
|-------------|---------------|-------------------------------|
| Description | Qualification | Training and Learning Results |
|-------------|---------------|-------------------------------|

## Other comments on the Evaluation

## Sources of information

### Basic Bibliography

### Complementary Bibliography

## Recommendations

| IDENTIFYING DATA          |                                                                                                                                                                                                                                                                                                                                                                                                                       |          |      |            |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| Chemistry of Biomolecules |                                                                                                                                                                                                                                                                                                                                                                                                                       |          |      |            |
| Subject                   | Chemistry of Biomolecules                                                                                                                                                                                                                                                                                                                                                                                             |          |      |            |
| Code                      | V11M162V02115                                                                                                                                                                                                                                                                                                                                                                                                         |          |      |            |
| Study programme           | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                    |          |      |            |
| Descriptors               | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                          | Choose   | Year | Quadmester |
|                           | 3                                                                                                                                                                                                                                                                                                                                                                                                                     | Optional | 1st  | 1st        |
| Teaching language         | Spanish                                                                                                                                                                                                                                                                                                                                                                                                               |          |      |            |
| Department                |                                                                                                                                                                                                                                                                                                                                                                                                                       |          |      |            |
| Coordinator               | Teijeira Bautista, Marta                                                                                                                                                                                                                                                                                                                                                                                              |          |      |            |
| Lecturers                 | García Domínguez, Patricia<br>Teijeira Bautista, Marta                                                                                                                                                                                                                                                                                                                                                                |          |      |            |
| E-mail                    | qomaca@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                                       |          |      |            |
| Web                       | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                             |          |      |            |
| General description       | (*)The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2023-2024/biomolecule-chemistry-op-17770-17016-3-91609">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2023-2024/biomolecule-chemistry-op-17770-17016-3-91609</a> |          |      |            |

### Training and Learning Results

Code

### Expected results from this subject

|                                    |                               |
|------------------------------------|-------------------------------|
| Expected results from this subject | Training and Learning Results |
|------------------------------------|-------------------------------|

### Contents

Topic

### Planning

|                                                                                                                               | Class hours | Hours outside the classroom | Total hours |
|-------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------|-------------|
| *The information in the planning table is for guidance only and does not take into account the heterogeneity of the students. |             |                             |             |

### Methodologies

Description

### Personalized assistance

### Assessment

| Description | Qualification | Training and Learning Results |
|-------------|---------------|-------------------------------|
|-------------|---------------|-------------------------------|

### Other comments on the Evaluation

### Sources of information

#### Basic Bibliography

#### Complementary Bibliography

### Recommendations

| IDENTIFYING DATA                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |             |                               |
|-------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------|-------------------------------|
| <b>Metals in Biological Processes</b>                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |             |                               |
| Subject                                                                                                                       | Metals in Biological Processes                                                                                                                                                                                                                                                                                                                                                                                           |                               |             |                               |
| Code                                                                                                                          | V11M162V02116                                                                                                                                                                                                                                                                                                                                                                                                            |                               |             |                               |
| Study programme                                                                                                               | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                       |                               |             |                               |
| Descriptors                                                                                                                   | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                             | Choose                        | Year        | Quadmester                    |
|                                                                                                                               | 3                                                                                                                                                                                                                                                                                                                                                                                                                        | Optional                      | 1st         | 1st                           |
| Teaching language                                                                                                             | Spanish                                                                                                                                                                                                                                                                                                                                                                                                                  |                               |             |                               |
|                                                                                                                               | Galician                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |             |                               |
| Department                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |             |                               |
| Coordinator                                                                                                                   | Vázquez López, Ezequiel Manuel                                                                                                                                                                                                                                                                                                                                                                                           |                               |             |                               |
|                                                                                                                               | Couce Fortúnez, María Delfina                                                                                                                                                                                                                                                                                                                                                                                            |                               |             |                               |
| Lecturers                                                                                                                     | Couce Fortúnez, María Delfina                                                                                                                                                                                                                                                                                                                                                                                            |                               |             |                               |
|                                                                                                                               | Vázquez López, Ezequiel Manuel                                                                                                                                                                                                                                                                                                                                                                                           |                               |             |                               |
| E-mail                                                                                                                        | delfina@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                                         |                               |             |                               |
|                                                                                                                               | ezequiel@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                                        |                               |             |                               |
| Web                                                                                                                           | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                                |                               |             |                               |
| General description                                                                                                           | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2023-2024/metals-biological-processes-17770-17016-3-98949">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2023-2024/metals-biological-processes-17770-17016-3-98949</a> |                               |             |                               |
| <b>Training and Learning Results</b>                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |             |                               |
| Code                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |             |                               |
| <b>Expected results from this subject</b>                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |             |                               |
| Expected results from this subject                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |             | Training and Learning Results |
| <b>Contents</b>                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |             |                               |
| Topic                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |             |                               |
| <b>Planning</b>                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |             |                               |
|                                                                                                                               | Class hours                                                                                                                                                                                                                                                                                                                                                                                                              | Hours outside the classroom   | Total hours |                               |
| *The information in the planning table is for guidance only and does not take into account the heterogeneity of the students. |                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |             |                               |
| <b>Methodologies</b>                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |             |                               |
|                                                                                                                               | Description                                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| <b>Personalized assistance</b>                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |             |                               |
| <b>Assessment</b>                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |             |                               |
| Description                                                                                                                   | Qualification                                                                                                                                                                                                                                                                                                                                                                                                            | Training and Learning Results |             |                               |
| <b>Other comments on the Evaluation</b>                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |             |                               |
| <b>Sources of information</b>                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |             |                               |
| <b>Basic Bibliography</b>                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |             |                               |
| <b>Complementary Bibliography</b>                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |             |                               |
| <b>Recommendations</b>                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |             |                               |

| IDENTIFYING DATA    |                                                                                                                                                                                                                                                                                                                                                                                                            |          |      |            |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| Medicinal Chemistry |                                                                                                                                                                                                                                                                                                                                                                                                            |          |      |            |
| Subject             | Medicinal Chemistry                                                                                                                                                                                                                                                                                                                                                                                        |          |      |            |
| Code                | V11M162V02117                                                                                                                                                                                                                                                                                                                                                                                              |          |      |            |
| Study programme     | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                         |          |      |            |
| Descriptors         | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                               | Choose   | Year | Quadmester |
|                     | 3                                                                                                                                                                                                                                                                                                                                                                                                          | Optional | 1st  | 2nd        |
| Teaching language   | Spanish                                                                                                                                                                                                                                                                                                                                                                                                    |          |      |            |
| Department          |                                                                                                                                                                                                                                                                                                                                                                                                            |          |      |            |
| Coordinator         | Terán Moldes, María del Carmen<br>Teijeira Bautista, Marta                                                                                                                                                                                                                                                                                                                                                 |          |      |            |
| Lecturers           | Teijeira Bautista, Marta<br>Terán Moldes, María del Carmen                                                                                                                                                                                                                                                                                                                                                 |          |      |            |
| E-mail              | qomaca@uvigo.es<br>mcteran@uvigo.es                                                                                                                                                                                                                                                                                                                                                                        |          |      |            |
| Web                 | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                  |          |      |            |
| General description | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2023-2024/medical-chemistry-op-17770-17016-3-91610">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2023-2024/medical-chemistry-op-17770-17016-3-91610</a> |          |      |            |

| Training and Learning Results      |                               |
|------------------------------------|-------------------------------|
| Code                               |                               |
| Expected results from this subject |                               |
| Expected results from this subject | Training and Learning Results |

| Contents |
|----------|
| Topic    |

| Planning                                                                                                                      | Class hours | Hours outside the classroom | Total hours |
|-------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------|-------------|
| *The information in the planning table is for guidance only and does not take into account the heterogeneity of the students. |             |                             |             |

| Methodologies |
|---------------|
| Description   |

| Personalized assistance |
|-------------------------|
|-------------------------|

| Assessment  |               |                               |
|-------------|---------------|-------------------------------|
| Description | Qualification | Training and Learning Results |

| Other comments on the Evaluation |
|----------------------------------|
|----------------------------------|

| Sources of information     |
|----------------------------|
| Basic Bibliography         |
| Complementary Bibliography |

| Recommendations |
|-----------------|
|-----------------|

| IDENTIFYING DATA                  |                                                                                                                                                                                                                                                                                                                                                                                                                        |          |      |            |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| The Chemistry of Natural Products |                                                                                                                                                                                                                                                                                                                                                                                                                        |          |      |            |
| Subject                           | The Chemistry of Natural Products                                                                                                                                                                                                                                                                                                                                                                                      |          |      |            |
| Code                              | V11M162V02119                                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
| Study programme                   | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                     |          |      |            |
| Descriptors                       | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                           | Choose   | Year | Quadmester |
|                                   | 3                                                                                                                                                                                                                                                                                                                                                                                                                      | Optional | 1st  | 2nd        |
| Teaching language                 | Spanish                                                                                                                                                                                                                                                                                                                                                                                                                |          |      |            |
| Department                        |                                                                                                                                                                                                                                                                                                                                                                                                                        |          |      |            |
| Coordinator                       | Besada Pereira, Pedro                                                                                                                                                                                                                                                                                                                                                                                                  |          |      |            |
| Lecturers                         | Besada Pereira, Pedro<br>Lorenzo Fernández, Paula                                                                                                                                                                                                                                                                                                                                                                      |          |      |            |
| E-mail                            | pbes@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
| Web                               | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                              |          |      |            |
| General description               | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2023-2024/chemistry-natural-products-17770-17016-3-92896">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2023-2024/chemistry-natural-products-17770-17016-3-92896</a> |          |      |            |

### Training and Learning Results

Code

### Expected results from this subject

|                                    |                               |
|------------------------------------|-------------------------------|
| Expected results from this subject | Training and Learning Results |
|------------------------------------|-------------------------------|

### Contents

Topic

### Planning

| Class hours | Hours outside the classroom | Total hours |
|-------------|-----------------------------|-------------|
|-------------|-----------------------------|-------------|

\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

### Methodologies

Description

### Personalized assistance

### Assessment

| Description | Qualification | Training and Learning Results |
|-------------|---------------|-------------------------------|
|-------------|---------------|-------------------------------|

### Other comments on the Evaluation

### Sources of information

#### Basic Bibliography

#### Complementary Bibliography

### Recommendations

| IDENTIFYING DATA             |                                                                                                                                                                                                                                                                                                                                                                                                                      |          |      |            |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| Preparation of Nanomaterials |                                                                                                                                                                                                                                                                                                                                                                                                                      |          |      |            |
| Subject                      | Preparation of Nanomaterials                                                                                                                                                                                                                                                                                                                                                                                         |          |      |            |
| Code                         | V11M162V02120                                                                                                                                                                                                                                                                                                                                                                                                        |          |      |            |
| Study programme              | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                   |          |      |            |
| Descriptors                  | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                         | Choose   | Year | Quadmester |
|                              | 3                                                                                                                                                                                                                                                                                                                                                                                                                    | Optional | 1st  | 1st        |
| Teaching language            | Spanish                                                                                                                                                                                                                                                                                                                                                                                                              |          |      |            |
| Department                   |                                                                                                                                                                                                                                                                                                                                                                                                                      |          |      |            |
| Coordinator                  | Pérez Juste, Jorge<br>Correa Duarte, Miguel Ángel                                                                                                                                                                                                                                                                                                                                                                    |          |      |            |
| Lecturers                    | Correa Duarte, Miguel Ángel<br>Pérez Juste, Jorge                                                                                                                                                                                                                                                                                                                                                                    |          |      |            |
| E-mail                       | macorrea@uvigo.es<br>juste@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                  |          |      |            |
| Web                          | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                            |          |      |            |
| General description          | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2023-2024/preparation-nanomaterials-17771-17017-3-95804">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2023-2024/preparation-nanomaterials-17771-17017-3-95804</a> |          |      |            |

| Training and Learning Results |  |
|-------------------------------|--|
| Code                          |  |

| Expected results from this subject |                               |
|------------------------------------|-------------------------------|
| Expected results from this subject | Training and Learning Results |
| New                                |                               |

| Contents |  |
|----------|--|
| Topic    |  |

| Planning                                                                                                                      |             |                             |             |
|-------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------|-------------|
|                                                                                                                               | Class hours | Hours outside the classroom | Total hours |
| Lecturing                                                                                                                     | 0           | 0                           | 0           |
| Seminars                                                                                                                      | 0           | 0                           | 0           |
| *The information in the planning table is for guidance only and does not take into account the heterogeneity of the students. |             |                             |             |

| Methodologies |             |
|---------------|-------------|
|               | Description |
| Lecturing     |             |
| Seminars      |             |

| Personalized assistance |  |
|-------------------------|--|
|-------------------------|--|

| Assessment  |               |                               |
|-------------|---------------|-------------------------------|
| Description | Qualification | Training and Learning Results |

| Other comments on the Evaluation |  |
|----------------------------------|--|
|----------------------------------|--|

| Sources of information     |  |
|----------------------------|--|
| Basic Bibliography         |  |
| Complementary Bibliography |  |

| Recommendations |  |
|-----------------|--|
|-----------------|--|

| IDENTIFYING DATA                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |      |            |
|-----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| Advanced Techniques for the Characterization of Materials |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |      |            |
| Subject                                                   | Advanced Techniques for the Characterization of Materials                                                                                                                                                                                                                                                                                                                                                                                                    |          |      |            |
| Code                                                      | V11M162V02121                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |      |            |
| Study programme                                           | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                                                           |          |      |            |
| Descriptors                                               | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Choose   | Year | Quadmester |
|                                                           | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Optional | 1st  | 2nd        |
| Teaching language                                         | Spanish                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |      |            |
| Department                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |      |            |
| Coordinator                                               | Pérez Juste, Jorge<br>Correa Duarte, Miguel Ángel                                                                                                                                                                                                                                                                                                                                                                                                            |          |      |            |
| Lecturers                                                 | Correa Duarte, Miguel Ángel<br>Pérez Juste, Jorge<br>Rivas Murias, Beatriz                                                                                                                                                                                                                                                                                                                                                                                   |          |      |            |
| E-mail                                                    | macorrea@uvigo.es<br>juste@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
| Web                                                       | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                                                                    |          |      |            |
| General description                                       | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/advanced-materials-characterization-techniques-17771-17017-3-98951">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/advanced-materials-characterization-techniques-17771-17017-3-98951</a> |          |      |            |

| Training and Learning Results |
|-------------------------------|
| Code                          |

| Expected results from this subject |
|------------------------------------|
| Expected results from this subject |
| Training and Learning Results      |

| Contents |
|----------|
| Topic    |

| Planning                    |
|-----------------------------|
| Class hours                 |
| Hours outside the classroom |
| Total hours                 |

\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

| Methodologies |
|---------------|
| Description   |

| Personalized assistance |
|-------------------------|
|-------------------------|

| Assessment                    |
|-------------------------------|
| Description                   |
| Qualification                 |
| Training and Learning Results |

| Other comments on the Evaluation |
|----------------------------------|
|----------------------------------|

| Sources of information     |
|----------------------------|
| Basic Bibliography         |
| Complementary Bibliography |

| Recommendations |
|-----------------|
|-----------------|



| IDENTIFYING DATA        |                                                                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| Properties of Materials |                                                                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
| Subject                 | Properties of Materials                                                                                                                                                                                                                                                                                                                                                                                                                  |          |      |            |
| Code                    | V11M162V02122                                                                                                                                                                                                                                                                                                                                                                                                                            |          |      |            |
| Study programme         | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                                       |          |      |            |
| Descriptors             | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                                             | Choose   | Year | Quadmester |
|                         | 3                                                                                                                                                                                                                                                                                                                                                                                                                                        | Optional | 1st  | 1st        |
| Teaching language       | #EnglishFriendly<br>Spanish<br>Galician                                                                                                                                                                                                                                                                                                                                                                                                  |          |      |            |
| Department              |                                                                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
| Coordinator             | Salgueiriño Maceira, Verónica<br>Pastoriza Santos, Isabel                                                                                                                                                                                                                                                                                                                                                                                |          |      |            |
| Lecturers               | Núñez Sánchez, Sara<br>Pastoriza Santos, Isabel<br>Rivas Murias, Beatriz<br>Salgueiriño Maceira, Verónica<br>Vázquez Besteiro, Lucas                                                                                                                                                                                                                                                                                                     |          |      |            |
| E-mail                  | vsalgue@uvigo.es<br>pastoriza@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                                   |          |      |            |
| Web                     | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                                                |          |      |            |
| General description     | (*)The teaching guide for this subject will be available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2023-2024/material-properties-op-17771-17017-3-91614">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2023-2024/material-properties-op-17771-17017-3-91614</a> |          |      |            |

## Training and Learning Results

Code

## Expected results from this subject

| Expected results from this subject | Training and Learning Results |
|------------------------------------|-------------------------------|
| New                                |                               |
| New                                |                               |
| New                                |                               |
| New                                |                               |
| New                                |                               |
| New                                |                               |
| New                                |                               |

## Contents

| Topic                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (*)TEMA 1. Modelos clásicos e cuánticos de electróns libres: o modelo de Drude e o modelo de Sommerfeld. Efecto do potencial periódico da rede nas propiedades do gas de electróns.                                                                                              | (*)Neste primeiro tema introdúcese as aproximacións para obter a conductividade eléctrica, térmica e o efecto Hall nun gas de electróns libres. A continuación descríbese o efecto da cuantización da enerxía e o principio de exclusión de Pauli sobre a estatística electrónica e as propiedades do modelo de electróns libres: o modelo de Sommerfeld. A calor específica, e a conductividade eléctrica. Descríbenos os inconvenientes dos modelos de electróns libres e a necesidade de ter en conta a interacción dos electróns co potencial periódico da rede cristalina para describir sistemas reais. A continuación explícanse as zonas de Brillouin, o teorema de Bloch e fórmase unha teoría de bandas para electróns libres. Densidad de estados electrónicos. Para rematar demóstrase como a aparición de gaps de enerxía prohibida nas bandas de estados electrónicos son unha consecuencia da interacción con ese potencial periódico. |
| (*)TEMA 2. Cuantización da energia de rede: fonones<br>Neste tema explícase a cuantización da enerxía de rede e calcúlase a relación de dispersión para unha rede monoatómica unidimensional na aproximación do oscilador armónico (velocidade do son e conductividade térmica). | (*)Introdúcese o efecto de romper a simetría (dous átomos distintos, máis dunha dimensión, etc) sobre a relación de dispersión: modos ópticos e acústicos. Introdúcese o modelo de Debye para a conductividade térmica e a expansión térmica.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

(\*)TEMA 3. Técnicas experimentais na determinación de propiedades de transporte eléctrico e térmico.

(\*)Explicaranse os aspectos fundamentais das principais técnicas experimentais na determinación de propiedades de transporte eléctrico e térmico en sólidos: conductividade eléctrica, conductividade térmica, poder termoeléctrico e efecto Hall.

(\*)TEMA 4. Fenómenos cooperativos en aislantes: Ferroelectricidad e Magnetismo localizado.

(\*)Introdúcense os fenómenos de polarización e o concepto de constante dieléctrica. Farase un tratamento xeral deste fenómeno para que os estudantes comprendan a relación no tratamento de fenómenos similares como a susceptibilidade magnética. Ecuación de Clausius- Mossotti e ecuación de Debye ( dipolos inducidos e permanentes). Orixe dos materiais ferroeléctricos e o seu fenomenología. Efecto do tamaño do sistema sobre a ferroelectricidad. A orixe do momento magnético e os distintos tipos de resposta a un campo aplicado. A función de Brillouin. Interacción de intercambio e a orixe da magnetización espontánea: Ferromagnetismo. Efecto da enerxía magnetostática sobre a enerxía total do sistema e a formación de dominios magnéticos. Sistemas monodominio e fenomenología de sistemas magnéticos nanoestructurados.

(\*)TEMA 5. Propiedades ópticas de materiais: aspectos xerais. Propiedades ópticas de metais e semiconductores.

(\*)Plasmones: excitacións do gas de electróns libres. Cálculo da frecuencia de resonancia de plasma nun metal. Plasmones masivos, superficiales e localizados. Teoría de Mie e teoría de Gans. Métodos numéricos. Efecto da redución da dimensionalidade sobre as propiedades ópticas. Band gaps directos e indirectos. Excitones. Puntos cuánticos ( nanopartículas) etc.

## Planning

|                          | Class hours | Hours outside the classroom | Total hours |
|--------------------------|-------------|-----------------------------|-------------|
| Lecturing                | 9           | 10                          | 19          |
| Seminars                 | 8           | 30                          | 38          |
| Laboratory practical     | 6           | 8                           | 14          |
| Objective questions exam | 1           | 3                           | 4           |

\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

## Methodologies

|                      | Description                                                                                                                           |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Lecturing            | (*)As clases de teoría se impartirán en pizarra con apoio en power point.                                                             |
| Seminars             | (*)Se impartirán clases de seminario e tutorías para resolución de problemas concretos ou exposición de traballos por parte do alumno |
| Laboratory practical | (*)Se impartirán nos laboratorios e se realizarán experimentos por parte dos alumnos.                                                 |

## Personalized assistance

| Methodologies            | Description |
|--------------------------|-------------|
| Lecturing                |             |
| Seminars                 |             |
| Laboratory practical     |             |
| Tests                    | Description |
| Objective questions exam |             |

## Assessment

|                      | Description                                                                               | Qualification | Training and Learning Results |
|----------------------|-------------------------------------------------------------------------------------------|---------------|-------------------------------|
| Lecturing            | (*)se evaluará a través dunha proba escrita                                               | 60            |                               |
| Seminars             | (*)se evaluará a través de probas curtas, exposición oráis, resolución de problemas, etc. | 25            |                               |
| Laboratory practical | (*)se evaluará a través do traballo realizado no laboratorio e de unha memoria            | 15            |                               |

## Other comments on the Evaluation

## Sources of information

### Basic Bibliography

S. Elliot, **The Physics and Chemistry of Solids**, Wiley&Sons, 2008

---

P. A. Cox, **The Electronic Structure and Chemistry of Solids**, Oxford University Press,

---

J. M. Ziman, **Principles of the Theory of Solids**, Cambridge University Press,

---

J. B. Goodenough, **Magnetism and the Chemical Bond**, Interscience Publishers,

---

Craig F. Bohren, Donald R. Huffman, **Absorption and Scattering of Light by Small Particles**, WILEY&VCH Verlag GmbH & Co. KGaA,

---

C. Kittel, **Introduction to Solid State Physics**, 8ª, Wiley, 2005

---

J. Maza, J. Mosqueira, J.A. Veira, **Física del Estado Solido**, USC publicaciones., 2012

---

N.W. Ashcroft and N.V. Mermin, **Solid State Physics**, SaunderS College, 1976

---

John Singleton, **Band Theory and Electronic Properties of Solids**, Oxford Master Series in Physics, 2001

---

Ewen Smith, Geoffrey Dent, **Modern Raman Spectroscopy □ A Practical Approach**, hn Wiley & Sons, Ltd, 2005

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**Complementary Bibliography**

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## Recommendations

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| IDENTIFYING DATA                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |      |            |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| Chromatography and Analytical Separation |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |      |            |
| Subject                                  | Chromatography and Analytical Separation                                                                                                                                                                                                                                                                                                                                                                                                                               |          |      |            |
| Code                                     | V11M162V02128                                                                                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
| Study programme                          | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                                                                     |          |      |            |
| Descriptors                              | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Choose   | Year | Quadmester |
|                                          | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Optional | 1st  | 2nd        |
| Teaching language                        | Spanish                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |      |            |
| Department                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |      |            |
| Coordinator                              | Terán Moldes, María del Carmen                                                                                                                                                                                                                                                                                                                                                                                                                                         |          |      |            |
| Lecturers                                | Martínez Fernández, Claudio<br>Pérez Santin, Efrén<br>Terán Moldes, María del Carmen                                                                                                                                                                                                                                                                                                                                                                                   |          |      |            |
| E-mail                                   | mcteran@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                                                                                       |          |      |            |
| Web                                      | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                                                                              |          |      |            |
| General description                      | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/analytical-separation-and-chromatography-techniques-17772-17018-3-92897">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/analytical-separation-and-chromatography-techniques-17772-17018-3-92897</a> |          |      |            |

### Training and Learning Results

Code

### Expected results from this subject

|                                    |                               |
|------------------------------------|-------------------------------|
| Expected results from this subject | Training and Learning Results |
|------------------------------------|-------------------------------|

### Contents

Topic

### Planning

|  | Class hours | Hours outside the classroom | Total hours |
|--|-------------|-----------------------------|-------------|
|--|-------------|-----------------------------|-------------|

\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

### Methodologies

| Description |
|-------------|
|-------------|

### Personalized assistance

### Assessment

| Description | Qualification | Training and Learning Results |
|-------------|---------------|-------------------------------|
|-------------|---------------|-------------------------------|

### Other comments on the Evaluation

### Sources of information

#### Basic Bibliography

#### Complementary Bibliography

### Recommendations

## IDENTIFYING DATA

**Industrial Chemistry: Process control**

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |      |            |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| Subject             | Industrial Chemistry:<br>Process control                                                                                                                                                                                                                                                                                                                                                                                                     |          |      |            |
| Code                | V11M162V02129                                                                                                                                                                                                                                                                                                                                                                                                                                |          |      |            |
| Study programme     | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                                           |          |      |            |
| Descriptors         | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                                                 | Choose   | Year | Quadmester |
|                     | 3                                                                                                                                                                                                                                                                                                                                                                                                                                            | Optional | 1st  | 2nd        |
| Teaching language   | Spanish                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |      |            |
| Department          |                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |      |            |
| Coordinator         | Sánchez Vázquez, Pablo Breogán                                                                                                                                                                                                                                                                                                                                                                                                               |          |      |            |
| Lecturers           | Sánchez Vázquez, Pablo Breogán                                                                                                                                                                                                                                                                                                                                                                                                               |          |      |            |
| E-mail              | pabsanchez@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
| Web                 | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                                                    |          |      |            |
| General description | The subject guide is available at the following link:<br><br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/industrial-chemistry-process-control-17773-17019-3-91621">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/industrial-chemistry-process-control-17773-17019-3-91621</a> |          |      |            |

## Training and Learning Results

Code

### Expected results from this subject

|                                    |                               |
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| Expected results from this subject | Training and Learning Results |
|------------------------------------|-------------------------------|

## Contents

Topic

## Planning

| Planning | Class hours | Hours outside the classroom | Total hours |
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\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

## Methodologies

Description

## Personalized assistance

## Assessment

| Description | Qualification | Training and Learning Results |
|-------------|---------------|-------------------------------|
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### Other comments on the Evaluation

### Sources of information

## Basic Bibliography

### Complementary Bibliography

## Recommendations

| IDENTIFYING DATA                    |                                                                                                                                                                                                                                                                                                                                                                                                                              |          |      |            |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| Quality in the Chemistry Laboratory |                                                                                                                                                                                                                                                                                                                                                                                                                              |          |      |            |
| Subject                             | Quality in the Chemistry Laboratory                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
| Code                                | V11M162V02130                                                                                                                                                                                                                                                                                                                                                                                                                |          |      |            |
| Study programme                     | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                           |          |      |            |
| Descriptors                         | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                                 | Choose   | Year | Quadmester |
|                                     | 3                                                                                                                                                                                                                                                                                                                                                                                                                            | Optional | 1st  | 1st        |
| Teaching language                   | Spanish                                                                                                                                                                                                                                                                                                                                                                                                                      |          |      |            |
| Department                          |                                                                                                                                                                                                                                                                                                                                                                                                                              |          |      |            |
| Coordinator                         | Terán Moldes, María del Carmen                                                                                                                                                                                                                                                                                                                                                                                               |          |      |            |
| Lecturers                           | Romero Rivas, Vanesa<br>Terán Moldes, María del Carmen                                                                                                                                                                                                                                                                                                                                                                       |          |      |            |
| E-mail                              | mcteran@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                                             |          |      |            |
| Web                                 |                                                                                                                                                                                                                                                                                                                                                                                                                              |          |      |            |
| General description                 | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2023-2024/quality-chemical-laboratories-17773-17019-3-91622">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2023-2024/quality-chemical-laboratories-17773-17019-3-91622</a> |          |      |            |

### Training and Learning Results

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| Code |  |
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### Expected results from this subject

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|------------------------------------|-------------------------------|
| Expected results from this subject | Training and Learning Results |
|------------------------------------|-------------------------------|

### Contents

|       |  |
|-------|--|
| Topic |  |
|-------|--|

### Planning

|  | Class hours | Hours outside the classroom | Total hours |
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\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

### Methodologies

|             |  |
|-------------|--|
| Description |  |
|-------------|--|

### Personalized assistance

### Assessment

|             |               |                               |
|-------------|---------------|-------------------------------|
| Description | Qualification | Training and Learning Results |
|-------------|---------------|-------------------------------|

### Other comments on the Evaluation

### Sources of information

#### Basic Bibliography

#### Complementary Bibliography

### Recommendations

| IDENTIFYING DATA    |                                                                                                                                                                                                                                                                                                                                                                                                        |          |      |            |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| Industrial Safety   |                                                                                                                                                                                                                                                                                                                                                                                                        |          |      |            |
| Subject             | Industrial Safety                                                                                                                                                                                                                                                                                                                                                                                      |          |      |            |
| Code                | V11M162V02131                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
| Study programme     | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                     |          |      |            |
| Descriptors         | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                           | Choose   | Year | Quadmester |
|                     | 3                                                                                                                                                                                                                                                                                                                                                                                                      | Optional | 1st  | 1st        |
| Teaching language   | Spanish                                                                                                                                                                                                                                                                                                                                                                                                |          |      |            |
| Department          |                                                                                                                                                                                                                                                                                                                                                                                                        |          |      |            |
| Coordinator         | González de Prado, Begoña                                                                                                                                                                                                                                                                                                                                                                              |          |      |            |
| Lecturers           | González de Prado, Begoña                                                                                                                                                                                                                                                                                                                                                                              |          |      |            |
| E-mail              | bgp@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                           |          |      |            |
| Web                 | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                              |          |      |            |
| General description | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/industrial-security-17773-17019-3-91623">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/industrial-security-17773-17019-3-91623</a> |          |      |            |

### Training and Learning Results

|      |
|------|
| Code |
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### Expected results from this subject

|                                    |                               |
|------------------------------------|-------------------------------|
| Expected results from this subject | Training and Learning Results |
|------------------------------------|-------------------------------|

### Contents

|       |
|-------|
| Topic |
|-------|

### Planning

|  | Class hours | Hours outside the classroom | Total hours |
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\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

### Methodologies

|             |
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| Description |
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### Personalized assistance

### Assessment

|             |               |                               |
|-------------|---------------|-------------------------------|
| Description | Qualification | Training and Learning Results |
|-------------|---------------|-------------------------------|

### Other comments on the Evaluation

### Sources of information

#### Basic Bibliography

#### Complementary Bibliography

### Recommendations

| IDENTIFYING DATA                |                                                                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| Management in Chemical Industry |                                                                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
| Subject                         | Management in Chemical Industry                                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
| Code                            | V11M162V02132                                                                                                                                                                                                                                                                                                                                                                                                                            |          |      |            |
| Study programme                 | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                                       |          |      |            |
| Descriptors                     | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                                             | Choose   | Year | Quadmester |
|                                 | 3                                                                                                                                                                                                                                                                                                                                                                                                                                        | Optional | 1st  | 1st        |
| Teaching language               | Spanish                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |      |            |
| Department                      |                                                                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
| Coordinator                     | Rosales Villanueva, Emilio                                                                                                                                                                                                                                                                                                                                                                                                               |          |      |            |
| Lecturers                       | Rosales Villanueva, Emilio                                                                                                                                                                                                                                                                                                                                                                                                               |          |      |            |
| E-mail                          | emiliorv@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                                                        |          |      |            |
| Web                             | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                                                |          |      |            |
| General description             | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/management-systems-chemical-industry-17773-17019-3-91624">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/management-systems-chemical-industry-17773-17019-3-91624</a> |          |      |            |

| Training and Learning Results |
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| Code                          |

| Expected results from this subject |                               |
|------------------------------------|-------------------------------|
| Expected results from this subject | Training and Learning Results |

| Contents |
|----------|
| Topic    |

| Planning                                                                                                                      |             |                             |             |
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|                                                                                                                               | Class hours | Hours outside the classroom | Total hours |
| *The information in the planning table is for guidance only and does not take into account the heterogeneity of the students. |             |                             |             |

| Methodologies |
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| Description   |

| Personalized assistance |
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| Assessment  |               |                               |
|-------------|---------------|-------------------------------|
| Description | Qualification | Training and Learning Results |

| Other comments on the Evaluation |
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| Sources of information     |
|----------------------------|
| Basic Bibliography         |
| Complementary Bibliography |

| Recommendations |
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| IDENTIFYING DATA                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
|-------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------|-------------------------------|
| <b>Industrial Legislation</b>                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| Subject                                                                                                                       | Industrial Legislation                                                                                                                                                                                                                                                                                                                                                                                       |                               |             |                               |
| Code                                                                                                                          | V11M162V02133                                                                                                                                                                                                                                                                                                                                                                                                |                               |             |                               |
| Study programme                                                                                                               | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                           |                               |             |                               |
| Descriptors                                                                                                                   | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                 | Choose                        | Year        | Quadmester                    |
|                                                                                                                               | 3                                                                                                                                                                                                                                                                                                                                                                                                            | Optional                      | 1st         | 2nd                           |
| Teaching language                                                                                                             | Spanish                                                                                                                                                                                                                                                                                                                                                                                                      |                               |             |                               |
| Department                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| Coordinator                                                                                                                   | Terán Moldes, María del Carmen                                                                                                                                                                                                                                                                                                                                                                               |                               |             |                               |
| Lecturers                                                                                                                     | Terán Moldes, María del Carmen                                                                                                                                                                                                                                                                                                                                                                               |                               |             |                               |
| E-mail                                                                                                                        | mcteran@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                             |                               |             |                               |
| Web                                                                                                                           | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                    |                               |             |                               |
| General description                                                                                                           | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/industrial-legislation-17773-17019-3-91625">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/industrial-legislation-17773-17019-3-91625</a> |                               |             |                               |
| <b>Training and Learning Results</b>                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| Code                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| <b>Expected results from this subject</b>                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| Expected results from this subject                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                              |                               |             | Training and Learning Results |
| <b>Contents</b>                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| Topic                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| <b>Planning</b>                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
|                                                                                                                               | Class hours                                                                                                                                                                                                                                                                                                                                                                                                  | Hours outside the classroom   | Total hours |                               |
| *The information in the planning table is for guidance only and does not take into account the heterogeneity of the students. |                                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| <b>Methodologies</b>                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
|                                                                                                                               | Description                                                                                                                                                                                                                                                                                                                                                                                                  |                               |             |                               |
| <b>Personalized assistance</b>                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| <b>Assessment</b>                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| Description                                                                                                                   | Qualification                                                                                                                                                                                                                                                                                                                                                                                                | Training and Learning Results |             |                               |
| <b>Other comments on the Evaluation</b>                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| <b>Sources of information</b>                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| <b>Basic Bibliography</b>                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| <b>Complementary Bibliography</b>                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| <b>Recommendations</b>                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |

| IDENTIFYING DATA                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                            |                               |             |                               |
|-------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------|-------------------------------|
| <b>Economics and Industry</b>                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                            |                               |             |                               |
| Subject                                                                                                                       | Economics and Industry                                                                                                                                                                                                                                                                                                                                                                                     |                               |             |                               |
| Code                                                                                                                          | V11M162V02134                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| Study programme                                                                                                               | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                         |                               |             |                               |
| Descriptors                                                                                                                   | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                               | Choose                        | Year        | Quadmester                    |
|                                                                                                                               | 3                                                                                                                                                                                                                                                                                                                                                                                                          | Optional                      | 1st         | 1st                           |
| Teaching language                                                                                                             | Galician                                                                                                                                                                                                                                                                                                                                                                                                   |                               |             |                               |
| Department                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                            |                               |             |                               |
| Coordinator                                                                                                                   | Terán Moldes, María del Carmen                                                                                                                                                                                                                                                                                                                                                                             |                               |             |                               |
| Lecturers                                                                                                                     | Terán Moldes, María del Carmen                                                                                                                                                                                                                                                                                                                                                                             |                               |             |                               |
| E-mail                                                                                                                        | mcteran@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                           |                               |             |                               |
| Web                                                                                                                           | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                  |                               |             |                               |
| General description                                                                                                           | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2023-2024/economy-and-business-17773-17019-3-91626">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2023-2024/economy-and-business-17773-17019-3-91626</a> |                               |             |                               |
| <b>Training and Learning Results</b>                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                            |                               |             |                               |
| Code                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                            |                               |             |                               |
| <b>Expected results from this subject</b>                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                            |                               |             |                               |
| Expected results from this subject                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                            |                               |             | Training and Learning Results |
| <b>Contents</b>                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                            |                               |             |                               |
| Topic                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                            |                               |             |                               |
| <b>Planning</b>                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                            |                               |             |                               |
|                                                                                                                               | Class hours                                                                                                                                                                                                                                                                                                                                                                                                | Hours outside the classroom   | Total hours |                               |
| *The information in the planning table is for guidance only and does not take into account the heterogeneity of the students. |                                                                                                                                                                                                                                                                                                                                                                                                            |                               |             |                               |
| <b>Methodologies</b>                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                            |                               |             |                               |
|                                                                                                                               | Description                                                                                                                                                                                                                                                                                                                                                                                                |                               |             |                               |
| <b>Personalized assistance</b>                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                            |                               |             |                               |
| <b>Assessment</b>                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                            |                               |             |                               |
| Description                                                                                                                   | Qualification                                                                                                                                                                                                                                                                                                                                                                                              | Training and Learning Results |             |                               |
| <b>Other comments on the Evaluation</b>                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                            |                               |             |                               |
| <b>Sources of information</b>                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                            |                               |             |                               |
| <b>Basic Bibliography</b>                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                            |                               |             |                               |
| <b>Complementary Bibliography</b>                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                            |                               |             |                               |
| <b>Recommendations</b>                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                            |                               |             |                               |

| IDENTIFYING DATA    |                                                                                                                                                                                                                                                                                                                                                                                                |          |      |            |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| Human Resources     |                                                                                                                                                                                                                                                                                                                                                                                                |          |      |            |
| Subject             | Human Resources                                                                                                                                                                                                                                                                                                                                                                                |          |      |            |
| Code                | V11M162V02135                                                                                                                                                                                                                                                                                                                                                                                  |          |      |            |
| Study programme     | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                             |          |      |            |
| Descriptors         | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                   | Choose   | Year | Quadmester |
|                     | 3                                                                                                                                                                                                                                                                                                                                                                                              | Optional | 1st  | 1st        |
| Teaching language   | Galician                                                                                                                                                                                                                                                                                                                                                                                       |          |      |            |
| Department          |                                                                                                                                                                                                                                                                                                                                                                                                |          |      |            |
| Coordinator         | Terán Moldes, María del Carmen                                                                                                                                                                                                                                                                                                                                                                 |          |      |            |
| Lecturers           | Terán Moldes, María del Carmen                                                                                                                                                                                                                                                                                                                                                                 |          |      |            |
| E-mail              | mcteran@uvigo.es                                                                                                                                                                                                                                                                                                                                                                               |          |      |            |
| Web                 | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                      |          |      |            |
| General description | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/human-resources-17773-17019-3-91627">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/human-resources-17773-17019-3-91627</a> |          |      |            |

### Training and Learning Results

|      |  |
|------|--|
| Code |  |
|------|--|

### Expected results from this subject

|                                    |                               |
|------------------------------------|-------------------------------|
| Expected results from this subject | Training and Learning Results |
|------------------------------------|-------------------------------|

### Contents

|       |  |
|-------|--|
| Topic |  |
|-------|--|

### Planning

|  | Class hours | Hours outside the classroom | Total hours |
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\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

### Methodologies

|             |  |
|-------------|--|
| Description |  |
|-------------|--|

### Personalized assistance

### Assessment

|             |               |                               |
|-------------|---------------|-------------------------------|
| Description | Qualification | Training and Learning Results |
|-------------|---------------|-------------------------------|

### Other comments on the Evaluation

### Sources of information

#### Basic Bibliography

#### Complementary Bibliography

### Recommendations

| IDENTIFYING DATA    |                                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| Project Management  |                                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
| Subject             | Project Management                                                                                                                                                                                                                                                                                                                                                                                       |          |      |            |
| Code                | V11M162V02138                                                                                                                                                                                                                                                                                                                                                                                            |          |      |            |
| Study programme     | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                       |          |      |            |
| Descriptors         | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                             | Choose   | Year | Quadmester |
|                     | 3                                                                                                                                                                                                                                                                                                                                                                                                        | Optional | 1st  | 1st        |
| Teaching language   | Spanish                                                                                                                                                                                                                                                                                                                                                                                                  |          |      |            |
| Department          |                                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
| Coordinator         | González de Prado, Begoña                                                                                                                                                                                                                                                                                                                                                                                |          |      |            |
| Lecturers           | González de Prado, Begoña                                                                                                                                                                                                                                                                                                                                                                                |          |      |            |
| E-mail              | bgp@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                             |          |      |            |
| Web                 | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                |          |      |            |
| General description | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2023-2024/projects-management-17773-17019-3-91629">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2023-2024/projects-management-17773-17019-3-91629</a> |          |      |            |

### Training and Learning Results

| Code                               |                               |
|------------------------------------|-------------------------------|
| Expected results from this subject |                               |
| Expected results from this subject | Training and Learning Results |

### Contents

|       |  |
|-------|--|
| Topic |  |
|-------|--|

### Planning

|  | Class hours | Hours outside the classroom | Total hours |
|--|-------------|-----------------------------|-------------|
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\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

### Methodologies

|             |  |
|-------------|--|
| Description |  |
|-------------|--|

### Personalized assistance

### Assessment

|             |               |                               |
|-------------|---------------|-------------------------------|
| Description | Qualification | Training and Learning Results |
|-------------|---------------|-------------------------------|

### Other comments on the Evaluation

### Sources of information

#### Basic Bibliography

#### Complementary Bibliography

### Recommendations

| IDENTIFYING DATA                       |                                                                                                                                                                                                                                                                                                                                                                                                                                        |           |      |            |
|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------|------------|
| Validation of analytical methodologies |                                                                                                                                                                                                                                                                                                                                                                                                                                        |           |      |            |
| Subject                                | Validation of analytical methodologies                                                                                                                                                                                                                                                                                                                                                                                                 |           |      |            |
| Code                                   | V11M162V02140                                                                                                                                                                                                                                                                                                                                                                                                                          |           |      |            |
| Study programme                        | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                                     |           |      |            |
| Descriptors                            | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                                           | Choose    | Year | Quadmester |
|                                        | 3                                                                                                                                                                                                                                                                                                                                                                                                                                      | Mandatory | 1st  | 1st        |
| Teaching language                      | Spanish                                                                                                                                                                                                                                                                                                                                                                                                                                |           |      |            |
| Department                             |                                                                                                                                                                                                                                                                                                                                                                                                                                        |           |      |            |
| Coordinator                            | Gago Martínez, Ana<br>Leao Martins, Jose Manuel                                                                                                                                                                                                                                                                                                                                                                                        |           |      |            |
| Lecturers                              | Gago Martínez, Ana<br>Leao Martins, Jose Manuel                                                                                                                                                                                                                                                                                                                                                                                        |           |      |            |
| E-mail                                 | anagago@uvigo.es<br>leao@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                                      |           |      |            |
| Web                                    | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                                              |           |      |            |
| General description                    | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/validation-analytical-methodologies-17767-17013-2-98941">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/validation-analytical-methodologies-17767-17013-2-98941</a> |           |      |            |

### Training and Learning Results

|      |  |
|------|--|
| Code |  |
|------|--|

### Expected results from this subject

|                                    |                               |
|------------------------------------|-------------------------------|
| Expected results from this subject | Training and Learning Results |
|------------------------------------|-------------------------------|

### Contents

|       |  |
|-------|--|
| Topic |  |
|-------|--|

### Planning

|  |             |                             |             |
|--|-------------|-----------------------------|-------------|
|  | Class hours | Hours outside the classroom | Total hours |
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\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

### Methodologies

|             |  |
|-------------|--|
| Description |  |
|-------------|--|

### Personalized assistance

### Assessment

|             |               |                               |
|-------------|---------------|-------------------------------|
| Description | Qualification | Training and Learning Results |
|-------------|---------------|-------------------------------|

### Other comments on the Evaluation

### Sources of information

#### Basic Bibliography

#### Complementary Bibliography

### Recommendations

| IDENTIFYING DATA                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           |      |            |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------|------------|
| Characterisation of materials and biointerfaces |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           |      |            |
| Subject                                         | Characterisation of materials and biointerfaces                                                                                                                                                                                                                                                                                                                                                                                                            |           |      |            |
| Code                                            | V11M162V02141                                                                                                                                                                                                                                                                                                                                                                                                                                              |           |      |            |
| Study programme                                 | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                                                         |           |      |            |
| Descriptors                                     | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                                                               | Choose    | Year | Quadmester |
|                                                 | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Mandatory | 1st  | 1st        |
| Teaching language                               | Spanish                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           |      |            |
| Department                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           |      |            |
| Coordinator                                     | Tojo Suárez, María Concepción<br>Peña Gallego, María de los Ángeles                                                                                                                                                                                                                                                                                                                                                                                        |           |      |            |
| Lecturers                                       | Peña Gallego, María de los Ángeles<br>Tojo Suárez, María Concepción                                                                                                                                                                                                                                                                                                                                                                                        |           |      |            |
| E-mail                                          | mpena@uvigo.es<br>ctojo@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                                                           |           |      |            |
| Web                                             | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                                                                  |           |      |            |
| General description                             | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/materials-characterization-and-bio-interfaces-17767-17013-2-98942">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/materials-characterization-and-bio-interfaces-17767-17013-2-98942</a> |           |      |            |

### Training and Learning Results

Code

### Expected results from this subject

|                                    |                               |
|------------------------------------|-------------------------------|
| Expected results from this subject | Training and Learning Results |
|------------------------------------|-------------------------------|

### Contents

Topic

### Planning

|                                                                                                                               | Class hours | Hours outside the classroom | Total hours |
|-------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------|-------------|
| *The information in the planning table is for guidance only and does not take into account the heterogeneity of the students. |             |                             |             |

### Methodologies

| Description |
|-------------|
|-------------|

### Personalized assistance

### Assessment

| Description | Qualification | Training and Learning Results |
|-------------|---------------|-------------------------------|
|-------------|---------------|-------------------------------|

### Other comments on the Evaluation

### Sources of information

#### Basic Bibliography

#### Complementary Bibliography

### Recommendations

| IDENTIFYING DATA                      |                                                                                                                                                                                                                                                                                                                                                                                                                                            |           |      |            |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------|------------|
| Scientific transfer and communication |                                                                                                                                                                                                                                                                                                                                                                                                                                            |           |      |            |
| Subject                               | Scientific transfer and communication                                                                                                                                                                                                                                                                                                                                                                                                      |           |      |            |
| Code                                  | V11M162V02142                                                                                                                                                                                                                                                                                                                                                                                                                              |           |      |            |
| Study programme                       | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                                         |           |      |            |
| Descriptors                           | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                                               | Choose    | Year | Quadmester |
|                                       | 3                                                                                                                                                                                                                                                                                                                                                                                                                                          | Mandatory | 1st  | 1st        |
| Teaching language                     | Spanish                                                                                                                                                                                                                                                                                                                                                                                                                                    |           |      |            |
| Department                            |                                                                                                                                                                                                                                                                                                                                                                                                                                            |           |      |            |
| Coordinator                           | Iglesias Antelo, María Beatriz<br>Pastoriza Santos, Isabel                                                                                                                                                                                                                                                                                                                                                                                 |           |      |            |
| Lecturers                             | Iglesias Antelo, María Beatriz<br>Pastoriza Santos, Isabel                                                                                                                                                                                                                                                                                                                                                                                 |           |      |            |
| E-mail                                | bantelo@uvigo.gal<br>pastoriza@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                                    |           |      |            |
| Web                                   | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                                                  |           |      |            |
| General description                   | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/scientific-transfer-and-communication-17767-17013-2-98943">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/scientific-transfer-and-communication-17767-17013-2-98943</a> |           |      |            |

### Training and Learning Results

| Code                               |                               |
|------------------------------------|-------------------------------|
| Expected results from this subject |                               |
| Expected results from this subject | Training and Learning Results |

### Contents

|       |  |
|-------|--|
| Topic |  |
|-------|--|

### Planning

|  | Class hours | Hours outside the classroom | Total hours |
|--|-------------|-----------------------------|-------------|
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\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

### Methodologies

|             |  |
|-------------|--|
| Description |  |
|-------------|--|

### Personalized assistance

### Assessment

|             |               |                               |
|-------------|---------------|-------------------------------|
| Description | Qualification | Training and Learning Results |
|-------------|---------------|-------------------------------|

### Other comments on the Evaluation

### Sources of information

#### Basic Bibliography

#### Complementary Bibliography

### Recommendations

| IDENTIFYING DATA                    |                                                                                                                                                                                                                                                                                                                                                                                                                            |          |      |            |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| (*)Fisicoquímica de medios naturais |                                                                                                                                                                                                                                                                                                                                                                                                                            |          |      |            |
| Subject                             | (*)Fisicoquímica de medios naturais                                                                                                                                                                                                                                                                                                                                                                                        |          |      |            |
| Code                                | V11M162V02143                                                                                                                                                                                                                                                                                                                                                                                                              |          |      |            |
| Study programme                     | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                         |          |      |            |
| Descriptors                         | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                               | Choose   | Year | Quadmester |
|                                     | 3                                                                                                                                                                                                                                                                                                                                                                                                                          | Optional | 1st  | 1st        |
| Teaching language                   | Spanish                                                                                                                                                                                                                                                                                                                                                                                                                    |          |      |            |
| Department                          |                                                                                                                                                                                                                                                                                                                                                                                                                            |          |      |            |
| Coordinator                         | Losada Barreiro, Sonia<br>Estévez Guance, Laura                                                                                                                                                                                                                                                                                                                                                                            |          |      |            |
| Lecturers                           | Estévez Guance, Laura<br>Losada Barreiro, Sonia<br>Otero Martínez, Nicolás<br>Ramos Berdullas, Nicolás                                                                                                                                                                                                                                                                                                                     |          |      |            |
| E-mail                              | sonia@uvigo.es<br>lestevez@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                        |          |      |            |
| Web                                 | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                                  |          |      |            |
| General description                 | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2022023/physicochemistry-natural-means-17768-17014-3-98944">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2022023/physicochemistry-natural-means-17768-17014-3-98944</a> |          |      |            |

## Training and Learning Results

Code

## Expected results from this subject

|                                    |                               |
|------------------------------------|-------------------------------|
| Expected results from this subject | Training and Learning Results |
|------------------------------------|-------------------------------|

## Contents

Topic

## Planning

|  | Class hours | Hours outside the classroom | Total hours |
|--|-------------|-----------------------------|-------------|
|--|-------------|-----------------------------|-------------|

\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

## Methodologies

| Description |
|-------------|
|-------------|

## Personalized assistance

## Assessment

| Description | Qualification | Training and Learning Results |
|-------------|---------------|-------------------------------|
|-------------|---------------|-------------------------------|

## Other comments on the Evaluation

## Sources of information

### Basic Bibliography

### Complementary Bibliography

## Recommendations



| IDENTIFYING DATA                    |                                                                                                                                                                                                                                                                                                                                                                                                                  |          |      |            |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| <b>(*)Química do medio ambiente</b> |                                                                                                                                                                                                                                                                                                                                                                                                                  |          |      |            |
| Subject                             | (*)Química do medio ambiente                                                                                                                                                                                                                                                                                                                                                                                     |          |      |            |
| Code                                | V11M162V02144                                                                                                                                                                                                                                                                                                                                                                                                    |          |      |            |
| Study programme                     | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                               |          |      |            |
| Descriptors                         | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                     | Choose   | Year | Quadmester |
|                                     | 3                                                                                                                                                                                                                                                                                                                                                                                                                | Optional | 1st  | 2nd        |
| Teaching language                   | Spanish                                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
| Department                          |                                                                                                                                                                                                                                                                                                                                                                                                                  |          |      |            |
| Coordinator                         | Couce Fortúnez, María Delfina<br>Iglesias Antelo, María Beatriz                                                                                                                                                                                                                                                                                                                                                  |          |      |            |
| Lecturers                           | Couce Fortúnez, María Delfina<br>Iglesias Antelo, María Beatriz                                                                                                                                                                                                                                                                                                                                                  |          |      |            |
| E-mail                              | bantelo@uvigo.gal<br>delfina@uvigo.es                                                                                                                                                                                                                                                                                                                                                                            |          |      |            |
| Web                                 | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                        |          |      |            |
| General description                 | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2023-2024/environmental-chemistry-17768-17014-3-98945">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2023-2024/environmental-chemistry-17768-17014-3-98945</a> |          |      |            |

| Training and Learning Results |  |
|-------------------------------|--|
| Code                          |  |

| Expected results from this subject |                               |
|------------------------------------|-------------------------------|
| Expected results from this subject | Training and Learning Results |

| Contents |  |
|----------|--|
| Topic    |  |

| Planning |             |                             |             |
|----------|-------------|-----------------------------|-------------|
|          | Class hours | Hours outside the classroom | Total hours |

\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

| Methodologies |             |
|---------------|-------------|
|               | Description |

| Personalized assistance |  |
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| Assessment  |               |                               |
|-------------|---------------|-------------------------------|
| Description | Qualification | Training and Learning Results |

| Other comments on the Evaluation |  |
|----------------------------------|--|
|----------------------------------|--|

| Sources of information     |  |
|----------------------------|--|
| Basic Bibliography         |  |
| Complementary Bibliography |  |

| Recommendations |  |
|-----------------|--|
|-----------------|--|

| IDENTIFYING DATA                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |      |            |
|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| (*)Técnicas para o control da contaminación ambiental |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |      |            |
| Subject                                               | (*)Técnicas para o control da contaminación ambiental                                                                                                                                                                                                                                                                                                                                                                                                |          |      |            |
| Code                                                  | V11M162V02145                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |      |            |
| Study programme                                       | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                                                   |          |      |            |
| Descriptors                                           | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                                                         | Choose   | Year | Quadmester |
|                                                       | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Optional | 1st  | 2nd        |
| Teaching language                                     | Spanish                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |      |            |
| Department                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |      |            |
| Coordinator                                           | González Romero, Elisa                                                                                                                                                                                                                                                                                                                                                                                                                               |          |      |            |
| Lecturers                                             | González Romero, Elisa                                                                                                                                                                                                                                                                                                                                                                                                                               |          |      |            |
| E-mail                                                | eromero@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                                                                     |          |      |            |
| Web                                                   | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                                                            |          |      |            |
| General description                                   | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/techniques-control-environmental-pollution-17768-17014-3-98946">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/techniques-control-environmental-pollution-17768-17014-3-98946</a> |          |      |            |

| Training and Learning Results |  |
|-------------------------------|--|
| Code                          |  |

| Expected results from this subject |                               |
|------------------------------------|-------------------------------|
| Expected results from this subject | Training and Learning Results |

| Contents |  |
|----------|--|
| Topic    |  |

| Planning                                                                                                                      |             |                             |             |
|-------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------|-------------|
|                                                                                                                               | Class hours | Hours outside the classroom | Total hours |
| Lecturing                                                                                                                     | 16          | 24                          | 40          |
| Workshops                                                                                                                     | 6           | 17                          | 23          |
| Objective questions exam                                                                                                      | 2           | 10                          | 12          |
| *The information in the planning table is for guidance only and does not take into account the heterogeneity of the students. |             |                             |             |

| Methodologies |             |
|---------------|-------------|
|               | Description |
| Lecturing     |             |
| Workshops     |             |

| Personalized assistance |             |
|-------------------------|-------------|
| Methodologies           | Description |
| Lecturing               |             |
| Workshops               |             |

| Assessment               |             |               |                               |
|--------------------------|-------------|---------------|-------------------------------|
|                          | Description | Qualification | Training and Learning Results |
| Workshops                |             | 0             |                               |
| Objective questions exam |             | 0             |                               |

| Other comments on the Evaluation |  |
|----------------------------------|--|
|----------------------------------|--|

| Sources of information     |  |
|----------------------------|--|
| Basic Bibliography         |  |
| Complementary Bibliography |  |

| Recommendations |  |
|-----------------|--|
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| IDENTIFYING DATA                             |                                                                                                                                                                                                                                                                                                                                                                                                                            |          |      |            |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| <b>(*)Xestión e valorización de residuos</b> |                                                                                                                                                                                                                                                                                                                                                                                                                            |          |      |            |
| Subject                                      | (*)Xestión e valorización de residuos                                                                                                                                                                                                                                                                                                                                                                                      |          |      |            |
| Code                                         | V11M162V02146                                                                                                                                                                                                                                                                                                                                                                                                              |          |      |            |
| Study programme                              | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                         |          |      |            |
| Descriptors                                  | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                               | Choose   | Year | Quadmester |
|                                              | 3                                                                                                                                                                                                                                                                                                                                                                                                                          | Optional | 1st  | 1st        |
| Teaching language                            | Spanish                                                                                                                                                                                                                                                                                                                                                                                                                    |          |      |            |
| Department                                   |                                                                                                                                                                                                                                                                                                                                                                                                                            |          |      |            |
| Coordinator                                  | Terán Moldes, María del Carmen                                                                                                                                                                                                                                                                                                                                                                                             |          |      |            |
| Lecturers                                    | Terán Moldes, María del Carmen                                                                                                                                                                                                                                                                                                                                                                                             |          |      |            |
| E-mail                                       | mcteran@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                                           |          |      |            |
| Web                                          | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                                  |          |      |            |
| General description                          | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/waste-management-and-recovery-17768-17014-3-98947">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/waste-management-and-recovery-17768-17014-3-98947</a> |          |      |            |

### Training and Learning Results

|      |  |
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| Code |  |
|------|--|

### Expected results from this subject

|                                    |                               |
|------------------------------------|-------------------------------|
| Expected results from this subject | Training and Learning Results |
|------------------------------------|-------------------------------|

### Contents

|       |  |
|-------|--|
| Topic |  |
|-------|--|

### Planning

|  | Class hours | Hours outside the classroom | Total hours |
|--|-------------|-----------------------------|-------------|
|--|-------------|-----------------------------|-------------|

\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

### Methodologies

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|-------------|--|
| Description |  |
|-------------|--|

### Personalized assistance

### Assessment

|             |               |                               |
|-------------|---------------|-------------------------------|
| Description | Qualification | Training and Learning Results |
|-------------|---------------|-------------------------------|

### Other comments on the Evaluation

### Sources of information

#### Basic Bibliography

#### Complementary Bibliography

### Recommendations

| IDENTIFYING DATA                   |                                                                                                                                                                                                                                                                                                                                                                                                                |          |      |            |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| <b>(*)Energía e medio ambiente</b> |                                                                                                                                                                                                                                                                                                                                                                                                                |          |      |            |
| Subject                            | (*)Energía e medio ambiente                                                                                                                                                                                                                                                                                                                                                                                    |          |      |            |
| Code                               | V11M162V02147                                                                                                                                                                                                                                                                                                                                                                                                  |          |      |            |
| Study programme                    | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                             |          |      |            |
| Descriptors                        | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                   | Choose   | Year | Quadmester |
|                                    | 3                                                                                                                                                                                                                                                                                                                                                                                                              | Optional | 1st  | 1st        |
| Teaching language                  | Spanish                                                                                                                                                                                                                                                                                                                                                                                                        |          |      |            |
| Department                         |                                                                                                                                                                                                                                                                                                                                                                                                                |          |      |            |
| Coordinator                        | Terán Moldes, María del Carmen                                                                                                                                                                                                                                                                                                                                                                                 |          |      |            |
| Lecturers                          | Rodríguez González, José Antonio<br>Terán Moldes, María del Carmen                                                                                                                                                                                                                                                                                                                                             |          |      |            |
| E-mail                             | mcteran@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                               |          |      |            |
| Web                                | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                      |          |      |            |
| General description                | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2023-2024/energy-and-environment-17768-17014-3-98948">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/2023-2024/energy-and-environment-17768-17014-3-98948</a> |          |      |            |

### Training and Learning Results

|                                           |                               |
|-------------------------------------------|-------------------------------|
| Code                                      |                               |
| <b>Expected results from this subject</b> |                               |
| Expected results from this subject        | Training and Learning Results |

### Contents

|       |  |
|-------|--|
| Topic |  |
|-------|--|

### Planning

|                                                                                                                               | Class hours | Hours outside the classroom | Total hours |
|-------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------|-------------|
| *The information in the planning table is for guidance only and does not take into account the heterogeneity of the students. |             |                             |             |

### Methodologies

|             |  |
|-------------|--|
| Description |  |
|-------------|--|

### Personalized assistance

### Assessment

|             |               |                               |
|-------------|---------------|-------------------------------|
| Description | Qualification | Training and Learning Results |
|-------------|---------------|-------------------------------|

### Other comments on the Evaluation

### Sources of information

#### Basic Bibliography

#### Complementary Bibliography

### Recommendations

| IDENTIFYING DATA       |                                                                                                                                                                                                                                                                                                                                                                                                        |          |      |            |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| Initiation to research |                                                                                                                                                                                                                                                                                                                                                                                                        |          |      |            |
| Subject                | Initiation to research                                                                                                                                                                                                                                                                                                                                                                                 |          |      |            |
| Code                   | V11M162V02148                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
| Study programme        | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                     |          |      |            |
| Descriptors            | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                           | Choose   | Year | Quadmester |
|                        | 6                                                                                                                                                                                                                                                                                                                                                                                                      | Optional | 1st  | An         |
| Teaching language      | Spanish                                                                                                                                                                                                                                                                                                                                                                                                |          |      |            |
| Department             |                                                                                                                                                                                                                                                                                                                                                                                                        |          |      |            |
| Coordinator            | Terán Moldes, María del Carmen<br>Pérez Juste, Ignacio                                                                                                                                                                                                                                                                                                                                                 |          |      |            |
| Lecturers              | Pérez Juste, Ignacio<br>Terán Moldes, María del Carmen                                                                                                                                                                                                                                                                                                                                                 |          |      |            |
| E-mail                 | uviqpij@uvigo.es<br>mcteran@uvigo.es                                                                                                                                                                                                                                                                                                                                                                   |          |      |            |
| Web                    | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                              |          |      |            |
| General description    | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/initiation-research-17772-17018-3-98957">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/initiation-research-17772-17018-3-98957</a> |          |      |            |

| Training and Learning Results |  |
|-------------------------------|--|
| Code                          |  |

| Expected results from this subject |                               |
|------------------------------------|-------------------------------|
| Expected results from this subject | Training and Learning Results |

| Contents |  |
|----------|--|
| Topic    |  |

| Planning |             |                             |             |
|----------|-------------|-----------------------------|-------------|
|          | Class hours | Hours outside the classroom | Total hours |

\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

| Methodologies |             |
|---------------|-------------|
|               | Description |

| Personalized assistance |  |
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| Assessment  |               |                               |
|-------------|---------------|-------------------------------|
| Description | Qualification | Training and Learning Results |

| Other comments on the Evaluation |  |
|----------------------------------|--|
|----------------------------------|--|

| Sources of information     |  |
|----------------------------|--|
| Basic Bibliography         |  |
| Complementary Bibliography |  |

| Recommendations |  |
|-----------------|--|
|-----------------|--|

| IDENTIFYING DATA                     |                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |      |            |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| Clinical and methodological analyzes |                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |      |            |
| Subject                              | Clinical and methodological analyzes                                                                                                                                                                                                                                                                                                                                                                                                   |          |      |            |
| Code                                 | V11M162V02149                                                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
| Study programme                      | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                                     |          |      |            |
| Descriptors                          | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                                           | Choose   | Year | Quadmester |
|                                      | 3                                                                                                                                                                                                                                                                                                                                                                                                                                      | Optional | 1st  | 1st        |
| Teaching language                    | Spanish                                                                                                                                                                                                                                                                                                                                                                                                                                |          |      |            |
| Department                           |                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |      |            |
| Coordinator                          | Terán Moldes, María del Carmen                                                                                                                                                                                                                                                                                                                                                                                                         |          |      |            |
| Lecturers                            | Terán Moldes, María del Carmen                                                                                                                                                                                                                                                                                                                                                                                                         |          |      |            |
| E-mail                               | mcteran@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                                                       |          |      |            |
| Web                                  | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                                              |          |      |            |
| General description                  | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/clinical-and-toxicological-analyzes-17770-17016-3-98950">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/clinical-and-toxicological-analyzes-17770-17016-3-98950</a> |          |      |            |

### Training and Learning Results

|      |  |
|------|--|
| Code |  |
|------|--|

### Expected results from this subject

|                                    |                               |
|------------------------------------|-------------------------------|
| Expected results from this subject | Training and Learning Results |
|------------------------------------|-------------------------------|

### Contents

|       |  |
|-------|--|
| Topic |  |
|-------|--|

### Planning

|  | Class hours | Hours outside the classroom | Total hours |
|--|-------------|-----------------------------|-------------|
|--|-------------|-----------------------------|-------------|

\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

### Methodologies

|             |  |
|-------------|--|
| Description |  |
|-------------|--|

### Personalized assistance

### Assessment

|             |               |                               |
|-------------|---------------|-------------------------------|
| Description | Qualification | Training and Learning Results |
|-------------|---------------|-------------------------------|

### Other comments on the Evaluation

### Sources of information

#### Basic Bibliography

#### Complementary Bibliography

### Recommendations

| IDENTIFYING DATA              |                                                                                                                                                                                                                                                                                                                                                                                                                                    |          |      |            |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| Polymeric molecular materials |                                                                                                                                                                                                                                                                                                                                                                                                                                    |          |      |            |
| Subject                       | Polymeric molecular materials                                                                                                                                                                                                                                                                                                                                                                                                      |          |      |            |
| Code                          | V11M162V02150                                                                                                                                                                                                                                                                                                                                                                                                                      |          |      |            |
| Study programme               | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                                 |          |      |            |
| Descriptors                   | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                                       | Choose   | Year | Quadmester |
|                               | 3                                                                                                                                                                                                                                                                                                                                                                                                                                  | Optional | 1st  | 1st        |
| Teaching language             | Spanish                                                                                                                                                                                                                                                                                                                                                                                                                            |          |      |            |
| Department                    |                                                                                                                                                                                                                                                                                                                                                                                                                                    |          |      |            |
| Coordinator                   | Novoa Carballal, Ramón                                                                                                                                                                                                                                                                                                                                                                                                             |          |      |            |
| Lecturers                     | Kiriakidi , Sofía<br>Novoa Carballal, Ramón                                                                                                                                                                                                                                                                                                                                                                                        |          |      |            |
| E-mail                        | ramon.novoa@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                                               |          |      |            |
| Web                           | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                                          |          |      |            |
| General description           | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/molecular-and-polymeric-materials-17771-17017-3-98952">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/molecular-and-polymeric-materials-17771-17017-3-98952</a> |          |      |            |

### Training and Learning Results

|                                    |                               |
|------------------------------------|-------------------------------|
| Code                               |                               |
| Expected results from this subject | Training and Learning Results |
| Expected results from this subject |                               |

### Contents

|       |  |
|-------|--|
| Topic |  |
|-------|--|

### Planning

|                                                                                                                               | Class hours | Hours outside the classroom | Total hours |
|-------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------|-------------|
| *The information in the planning table is for guidance only and does not take into account the heterogeneity of the students. |             |                             |             |

### Methodologies

|             |  |
|-------------|--|
| Description |  |
|-------------|--|

### Personalized assistance

### Assessment

|             |               |                               |
|-------------|---------------|-------------------------------|
| Description | Qualification | Training and Learning Results |
|-------------|---------------|-------------------------------|

### Other comments on the Evaluation

### Sources of information

#### Basic Bibliography

#### Complementary Bibliography

### Recommendations



| IDENTIFYING DATA                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| (*)Aplicacións dos nanomateriais e novos materiais |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
| Subject                                            | (*)Aplicacións dos nanomateriais e novos materiais                                                                                                                                                                                                                                                                                                                                                                                                       |          |      |            |
| Code                                               | V11M162V02151                                                                                                                                                                                                                                                                                                                                                                                                                                            |          |      |            |
| Study programme                                    | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                                                       |          |      |            |
| Descriptors                                        | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                                                             | Choose   | Year | Quadmester |
|                                                    | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Optional | 1st  | 2nd        |
| Teaching language                                  | Spanish                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |      |            |
| Department                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
| Coordinator                                        | Rodríguez Arguelles, María Carmen                                                                                                                                                                                                                                                                                                                                                                                                                        |          |      |            |
| Lecturers                                          | González Ballesteros, Noelia<br>Rodríguez Arguelles, María Carmen                                                                                                                                                                                                                                                                                                                                                                                        |          |      |            |
| E-mail                                             | mcarmen@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                                                                         |          |      |            |
| Web                                                | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                                                                |          |      |            |
| General description                                | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/applications-nanomaterials-and-new-materials-17771-17017-3-98953">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/applications-nanomaterials-and-new-materials-17771-17017-3-98953</a> |          |      |            |

| Training and Learning Results |
|-------------------------------|
| Code                          |

| Expected results from this subject |
|------------------------------------|
| Expected results from this subject |
| Training and Learning Results      |

| Contents |
|----------|
| Topic    |

| Planning |             |                             |             |
|----------|-------------|-----------------------------|-------------|
|          | Class hours | Hours outside the classroom | Total hours |

\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

| Methodologies |
|---------------|
| Description   |

| Personalized assistance |
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|-------------------------|

| Assessment  |               |                               |
|-------------|---------------|-------------------------------|
| Description | Qualification | Training and Learning Results |

| Other comments on the Evaluation |
|----------------------------------|
|----------------------------------|

| Sources of information     |
|----------------------------|
| Basic Bibliography         |
| Complementary Bibliography |

| Recommendations |
|-----------------|
|-----------------|

| IDENTIFYING DATA                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |      |            |
|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| (*)Técnicas avanzadas de preparación da mostra |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |      |            |
| Subject                                        | (*)Técnicas avanzadas de preparación da mostra                                                                                                                                                                                                                                                                                                                                                                                                   |          |      |            |
| Code                                           | V11M162V02152                                                                                                                                                                                                                                                                                                                                                                                                                                    |          |      |            |
| Study programme                                | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                                               |          |      |            |
| Descriptors                                    | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                                                     | Choose   | Year | Quadmester |
|                                                | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                | Optional | 1st  | 1st        |
| Teaching language                              | Spanish                                                                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
| Department                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |      |            |
| Coordinator                                    | Pena Pereira, Francisco Javier<br>Calle González, Inmaculada de la                                                                                                                                                                                                                                                                                                                                                                               |          |      |            |
| Lecturers                                      | Calle González, Inmaculada de la<br>Pena Pereira, Francisco Javier<br>Romero Rivas, Vanesa                                                                                                                                                                                                                                                                                                                                                       |          |      |            |
| E-mail                                         | incalle@uvigo.es<br>fjpena@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                                              |          |      |            |
| Web                                            | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                                                        |          |      |            |
| General description                            | The subject guide is available at the following link:<br><br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/advanced-techniques-sample-preparation-17772-17018-3-98954">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/advanced-techniques-sample-preparation-17772-17018-3-98954</a> |          |      |            |

### Training and Learning Results

Code

### Expected results from this subject

|                                    |                               |
|------------------------------------|-------------------------------|
| Expected results from this subject | Training and Learning Results |
|------------------------------------|-------------------------------|

### Contents

Topic

### Planning

|  | Class hours | Hours outside the classroom | Total hours |
|--|-------------|-----------------------------|-------------|
|--|-------------|-----------------------------|-------------|

\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

### Methodologies

| Description |
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### Personalized assistance

### Assessment

| Description | Qualification | Training and Learning Results |
|-------------|---------------|-------------------------------|
|-------------|---------------|-------------------------------|

### Other comments on the Evaluation

### Sources of information

#### Basic Bibliography

#### Complementary Bibliography

### Recommendations

| IDENTIFYING DATA                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |      |            |
|--------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| <b>(*)Técnicas atómicas avanzadas e sensores</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |      |            |
| Subject                                          | (*)Técnicas atómicas avanzadas e sensores                                                                                                                                                                                                                                                                                                                                                                                                    |          |      |            |
| Code                                             | V11M162V02153                                                                                                                                                                                                                                                                                                                                                                                                                                |          |      |            |
| Study programme                                  | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                                           |          |      |            |
| Descriptors                                      | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                                                 | Choose   | Year | Quadmester |
|                                                  | 3                                                                                                                                                                                                                                                                                                                                                                                                                                            | Optional | 1st  | 1st        |
| Teaching language                                | Spanish                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |      |            |
| Department                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |      |            |
| Coordinator                                      | González Romero, Elisa                                                                                                                                                                                                                                                                                                                                                                                                                       |          |      |            |
| Lecturers                                        | González Romero, Elisa                                                                                                                                                                                                                                                                                                                                                                                                                       |          |      |            |
| E-mail                                           | eromero@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                                                             |          |      |            |
| Web                                              | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                                                    |          |      |            |
| General description                              | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/advanced-atomic-techniques-and-sensors-17772-17018-3-98955">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/advanced-atomic-techniques-and-sensors-17772-17018-3-98955</a> |          |      |            |

### Training and Learning Results

|      |  |
|------|--|
| Code |  |
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### Expected results from this subject

|                                    |                               |
|------------------------------------|-------------------------------|
| Expected results from this subject | Training and Learning Results |
|------------------------------------|-------------------------------|

### Contents

|       |  |
|-------|--|
| Topic |  |
|-------|--|

### Planning

|                          | Class hours | Hours outside the classroom | Total hours |
|--------------------------|-------------|-----------------------------|-------------|
| Lecturing                | 16          | 24                          | 40          |
| Workshops                | 6           | 17                          | 23          |
| Objective questions exam | 2           | 10                          | 12          |

\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

### Methodologies

| Description |
|-------------|
| Lecturing   |
| Workshops   |

### Personalized assistance

| Methodologies | Description |
|---------------|-------------|
| Lecturing     |             |
| Workshops     |             |

### Assessment

|                          | Description | Qualification | Training and Learning Results |
|--------------------------|-------------|---------------|-------------------------------|
| Workshops                |             | 0             |                               |
| Objective questions exam |             | 0             |                               |

### Other comments on the Evaluation

### Sources of information

#### Basic Bibliography

#### Complementary Bibliography

### Recommendations



| IDENTIFYING DATA                            |                                                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| <b>(*)Espectrometría de masas analítica</b> |                                                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
| Subject                                     | (*)Espectrometría de masas analítica                                                                                                                                                                                                                                                                                                                                                                                     |          |      |            |
| Code                                        | V11M162V02154                                                                                                                                                                                                                                                                                                                                                                                                            |          |      |            |
| Study programme                             | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                       |          |      |            |
| Descriptors                                 | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                             | Choose   | Year | Quadmester |
|                                             | 3                                                                                                                                                                                                                                                                                                                                                                                                                        | Optional | 1st  | 2nd        |
| Teaching language                           | Spanish                                                                                                                                                                                                                                                                                                                                                                                                                  |          |      |            |
| Department                                  |                                                                                                                                                                                                                                                                                                                                                                                                                          |          |      |            |
| Coordinator                                 | Terán Moldes, María del Carmen                                                                                                                                                                                                                                                                                                                                                                                           |          |      |            |
| Lecturers                                   | Terán Moldes, María del Carmen                                                                                                                                                                                                                                                                                                                                                                                           |          |      |            |
| E-mail                                      | mcteran@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                                         |          |      |            |
| Web                                         | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                                |          |      |            |
| General description                         | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/analytical-mass-spectrometry-17772-17018-3-98956">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/analytical-mass-spectrometry-17772-17018-3-98956</a> |          |      |            |

### Training and Learning Results

|      |  |
|------|--|
| Code |  |
|------|--|

### Expected results from this subject

|                                    |                               |
|------------------------------------|-------------------------------|
| Expected results from this subject | Training and Learning Results |
|------------------------------------|-------------------------------|

### Contents

|       |  |
|-------|--|
| Topic |  |
|-------|--|

### Planning

|  | Class hours | Hours outside the classroom | Total hours |
|--|-------------|-----------------------------|-------------|
|--|-------------|-----------------------------|-------------|

\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

### Methodologies

|             |  |
|-------------|--|
| Description |  |
|-------------|--|

### Personalized assistance

### Assessment

|             |               |                               |
|-------------|---------------|-------------------------------|
| Description | Qualification | Training and Learning Results |
|-------------|---------------|-------------------------------|

### Other comments on the Evaluation

### Sources of information

#### Basic Bibliography

#### Complementary Bibliography

### Recommendations

| IDENTIFYING DATA                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |      |
|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|
| <b>(*)Espectroscopia de fluorescencia e fotoquímica</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |      |
| Subject                                                 | (*)Espectroscopia de fluorescencia e fotoquímica                                                                                                                                                                                                                                                                                                                                                                                                             |          |      |
| Code                                                    | V11M162V02155                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |      |
| Study programme                                         | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                                                                                           |          |      |
| Descriptors                                             | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Choose   | Year |
|                                                         | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Optional | 1st  |
| Teaching language                                       | Spanish                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |      |
| Department                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |      |
| Coordinator                                             | Prieto Jiménez, Inmaculada                                                                                                                                                                                                                                                                                                                                                                                                                                   |          |      |
| Lecturers                                               | Prieto Jiménez, Inmaculada                                                                                                                                                                                                                                                                                                                                                                                                                                   |          |      |
| E-mail                                                  | iprieto@uvigo.es                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |      |
| Web                                                     | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                                                                                    |          |      |
| General description                                     | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/fluorescence-and-photochemical-spectroscopy-op-17772-17018-3-91603">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/fluorescence-and-photochemical-spectroscopy-op-17772-17018-3-91603</a> |          |      |

### Training and Learning Results

|                                           |                               |
|-------------------------------------------|-------------------------------|
| Code                                      |                               |
| <b>Expected results from this subject</b> |                               |
| Expected results from this subject        | Training and Learning Results |

### Contents

|       |  |
|-------|--|
| Topic |  |
|-------|--|

### Planning

|  | Class hours | Hours outside the classroom | Total hours |
|--|-------------|-----------------------------|-------------|
|--|-------------|-----------------------------|-------------|

\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

### Methodologies

|             |  |
|-------------|--|
| Description |  |
|-------------|--|

### Personalized assistance

### Assessment

|             |               |                               |
|-------------|---------------|-------------------------------|
| Description | Qualification | Training and Learning Results |
|-------------|---------------|-------------------------------|

### Other comments on the Evaluation

### Sources of information

#### Basic Bibliography

#### Complementary Bibliography

### Recommendations

| IDENTIFYING DATA                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------|-------------------------------|
| <b>Final Dissertation</b>                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| Subject                                                                                                                       | Final Dissertation                                                                                                                                                                                                                                                                                                                                                                           |                               |             |                               |
| Code                                                                                                                          | V11M162V02156                                                                                                                                                                                                                                                                                                                                                                                |                               |             |                               |
| Study programme                                                                                                               | Máster Universitario en Investigación Química y Química Industrial                                                                                                                                                                                                                                                                                                                           |                               |             |                               |
| Descriptors                                                                                                                   | ECTS Credits                                                                                                                                                                                                                                                                                                                                                                                 | Choose                        | Year        | Quadmester                    |
|                                                                                                                               | 24                                                                                                                                                                                                                                                                                                                                                                                           | Mandatory                     | 1st         | 2nd                           |
| Teaching language                                                                                                             | Spanish                                                                                                                                                                                                                                                                                                                                                                                      |                               |             |                               |
| Department                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| Coordinator                                                                                                                   | García Fontán, María Soledad                                                                                                                                                                                                                                                                                                                                                                 |                               |             |                               |
| Lecturers                                                                                                                     | García Fontán, María Soledad                                                                                                                                                                                                                                                                                                                                                                 |                               |             |                               |
| E-mail                                                                                                                        | sgarcia@uvigo.es                                                                                                                                                                                                                                                                                                                                                                             |                               |             |                               |
| Web                                                                                                                           | <a href="http://http://miqqi.webs.uvigo.es/gl/">http://http://miqqi.webs.uvigo.es/gl/</a>                                                                                                                                                                                                                                                                                                    |                               |             |                               |
| General description                                                                                                           | The subject guide is available at the following link:<br><a href="https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/masters-thesis-17774-17020-2-98958">https://www.usc.gal/en/studies/masters/science/master-chemical-investigation-research-and-industrial-chemistry/20232024/masters-thesis-17774-17020-2-98958</a> |                               |             |                               |
| <b>Training and Learning Results</b>                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| Code                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| <b>Expected results from this subject</b>                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| Expected results from this subject                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                              |                               |             | Training and Learning Results |
| <b>Contents</b>                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| Topic                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| <b>Planning</b>                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
|                                                                                                                               | Class hours                                                                                                                                                                                                                                                                                                                                                                                  | Hours outside the classroom   | Total hours |                               |
| *The information in the planning table is for guidance only and does not take into account the heterogeneity of the students. |                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| <b>Methodologies</b>                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
|                                                                                                                               | Description                                                                                                                                                                                                                                                                                                                                                                                  |                               |             |                               |
| <b>Personalized assistance</b>                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| <b>Assessment</b>                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| Description                                                                                                                   | Qualification                                                                                                                                                                                                                                                                                                                                                                                | Training and Learning Results |             |                               |
| <b>Other comments on the Evaluation</b>                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| <b>Sources of information</b>                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| <b>Basic Bibliography</b>                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| <b>Complementary Bibliography</b>                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |
| <b>Recommendations</b>                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                              |                               |             |                               |