



## Teaching Guide

| Teaching Guide           |                                                                                                                                                                                                                                                                                                                                                          |        |                         |           |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-------------------------|-----------|
| Identifying Data         |                                                                                                                                                                                                                                                                                                                                                          |        |                         | 2020/21   |
| Subject (*)              | Practical Professional Training                                                                                                                                                                                                                                                                                                                          |        | Code                    | 610509138 |
| Study programme          | Mestrado Universitario en Investigación Química e Química Industrial (Plan 2020)                                                                                                                                                                                                                                                                         |        |                         |           |
| Descriptors              |                                                                                                                                                                                                                                                                                                                                                          |        |                         |           |
| Cycle                    | Period                                                                                                                                                                                                                                                                                                                                                   | Year   | Type                    | Credits   |
| Official Master's Degree | Yearly                                                                                                                                                                                                                                                                                                                                                   | First  | Optional                | 6         |
| Language                 | Spanish                                                                                                                                                                                                                                                                                                                                                  |        |                         |           |
| Teaching method          | Face-to-face                                                                                                                                                                                                                                                                                                                                             |        |                         |           |
| Prerequisites            |                                                                                                                                                                                                                                                                                                                                                          |        |                         |           |
| Department               | Química                                                                                                                                                                                                                                                                                                                                                  |        |                         |           |
| Coordinador              |                                                                                                                                                                                                                                                                                                                                                          | E-mail |                         |           |
| Lecturers                | Fernandez Sanchez, Jesus Jose                                                                                                                                                                                                                                                                                                                            | E-mail | jesus.fernandezs@udc.es |           |
| Web                      |                                                                                                                                                                                                                                                                                                                                                          |        |                         |           |
| General description      | A materia realizarase en empresas ou centros de tecnoloxía cunha actividade relacionada cos temas da especialidade de Química e Economía Industrial.<br>A natureza destas prácticas terá como obxectivo adquirir unha aprendizaxe práctica no mundo dos negocios, antes da conclusión da tese de máster na empresa                                       |        |                         |           |
| Contingency plan         | 1. Modifications to the contents<br><br>2. Methodologies<br>*Teaching methodologies that are maintained<br><br>*Teaching methodologies that are modified<br><br>3. Mechanisms for personalized attention to students<br><br>4. Modifications in the evaluation<br><br>*Evaluation observations:<br><br>5. Modifications to the bibliography or webgraphy |        |                         |           |

## Study programme competences

| Code | Study programme competences                                                                                                                                                                                                                                              |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A3   | Innovate in the methods of synthesis and chemical analysis related to the different areas of chemistry                                                                                                                                                                   |
| A5   | Properly assess risks and environmental and socioeconomic impacts associated with special chemicals                                                                                                                                                                      |
| A7   | Operate with advanced instrumentation for chemical analysis and structural determination.                                                                                                                                                                                |
| A8   | Analyze and use the data obtained independently in complex laboratory experiments and relating them with the chemical, physical or biological appropriate techniques, including the use of primary literature sources                                                    |
| B2   | Students should apply their knowledge and ability to solve problems in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study.                                                                                    |
| B3   | Students should be able to integrate knowledge and handle complexity, and formulate judgments based on information that was incomplete or limited, include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgments. |
| B4   | Students should be able to communicate their conclusions, and the knowledge and the reasons that support them to specialists and non-specialists in a clear and unambiguous manner                                                                                       |
| B5   | Students must possess learning skills to allow them to continue studying in a way that will have to be largely self-directed or autonomous.                                                                                                                              |
| B6   | Innovate in the different areas of chemistry, demonstrating initiative and entrepreneurship                                                                                                                                                                              |
| B8   | Evaluate responsibility in the management of information and knowledge in the field of Industrial Chemistry and Chemical Research                                                                                                                                        |



|     |                                                                                                                             |
|-----|-----------------------------------------------------------------------------------------------------------------------------|
| B9  | Demonstrate ability to analyze, describe, organize, plan and manage projects                                                |
| B10 | Use of scientific terminology in English to explain the experimental results in the context of the chemical profession      |
| B11 | Apply correctly the new technologies to gather and organize the information to solve problems in the professional activity. |
| B12 | Being able to work in a team and adapt to multidisciplinary teams.                                                          |
| C1  | CT1 - Elaborar, escribir e defender publicamente informes de carácter científico e técnico                                  |
| C2  | CT2 - Traballar en equipo e adaptarse a equipos multidisciplinares.                                                         |
| C3  | CT3 - Traballar con autonomía e eficiencia na práctica diaria da investigación ou da actividade profesional.                |
| C4  | CT4 - Apreciar o valor da calidade e mellora continua, actuando con rigor, responsabilidade e ética profesional.            |
| C5  | CT5 - Demostrar unha actitude de respecto polas opinións, valores, comportamentos e prácticas doutros                       |

| Learning outcomes                                                                                                                                                   |  |                             |                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------|-----------------------------------------|
| Learning outcomes                                                                                                                                                   |  | Study programme competences |                                         |
| Traballar con soltura cos métodos relacionados coas diferentes áreas da química                                                                                     |  | AC5<br>AC7<br>AC8           | BC8<br>BC11<br>CC2<br>CC4               |
| Traballar con instrumentación química avanzada de análise química determinación estrutural                                                                          |  | AC5<br>AC7<br>AC8           | BC3<br>BC5<br>BC9<br>BC10<br>CC2<br>CC3 |
| Utilizar axeitadamente instrumentos e equipos de laboratorio especializado para a determinación das propiedades e / ou análise química                              |  | AC3<br>AC5<br>AC7<br>AC8    | BC2<br>BC6<br>BC12<br>CC1               |
| Analizar os resultados experimentais e as conclusións                                                                                                               |  | AC8                         | BC2<br>CC3                              |
| Recoñecer e valorar os riscos asociados co sistema químicos estudo, tomar as medidas adecuadas                                                                      |  | AC8                         | BC4<br>BC9<br>CC1<br>CC4                |
| Adquisición de experiencia profesional (humano técnica e), complementar a súa formación, para facilitar a súa integración no mundo profesional                      |  | AC8                         | BC8<br>BC11<br>CC4<br>CC5               |
| Xestionar os datos obtidos en experimentos, relacionando as teorías físicas, químicas e biolóxicas adecuadas, utilizando para iso as fontes de literatura primarias |  | AC7<br>AC8                  | BC9<br>CC1                              |

| Contents                                                                                                                      |           |
|-------------------------------------------------------------------------------------------------------------------------------|-----------|
| Topic                                                                                                                         | Sub-topic |
| As prácticas ten como obxectivo adquirir aprender a realización práctica dun proxecto profesional nun ambiente de empresarial |           |

| Planning                                                                                                                        |                                 |                      |                               |             |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------|----------------------|-------------------------------|-------------|
| Methodologies / tests                                                                                                           | Competencies                    | Ordinary class hours | Student?s personal work hours | Total hours |
| Guest lecture / keynote speech                                                                                                  | B6                              | 3                    | 0                             | 3           |
| Laboratory practice                                                                                                             | A3 A5 A7 B2 B3 B4<br>B5 B11 C1  | 114                  | 0                             | 114         |
| Supervised projects                                                                                                             | A8 B8 B9 B10 B12 C2<br>C3 C4 C5 | 15                   | 15                            | 30          |
| Personalized attention                                                                                                          |                                 | 3                    | 0                             | 3           |
| (*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students. |                                 |                      |                               |             |

| Methodologies |
|---------------|
|---------------|



| Methodologies                  | Description                                                                                                                                                                                                                                    |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Guest lecture / keynote speech | clases teóricas                                                                                                                                                                                                                                |
| Laboratory practice            | Realizarase nun laboratorio ou nunha empresa as prácticas avanzadas e / ou tese de máster. traballo práctico individual baixo a supervisión dun titor persoal, coa infraestrutura adecuada e cos medios necesarios para alcanzar os obxectivos |
| Supervised projects            | Realización de traballos e informes escritos                                                                                                                                                                                                   |

| Personalized attention |             |
|------------------------|-------------|
| Methodologies          | Description |
|                        |             |

| Assessment          |                                 |                                                                              |               |
|---------------------|---------------------------------|------------------------------------------------------------------------------|---------------|
| Methodologies       | Competencies                    | Description                                                                  | Qualification |
| Supervised projects | A8 B8 B9 B10 B12 C2<br>C3 C4 C5 | Realización de traballos e informes escritos<br>Informes titores estudiantís | 45            |
| Laboratory practice | A3 A5 A7 B2 B3 B4<br>B5 B11 C1  | Destreza no laboratorio                                                      | 55            |

| Assessment comments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Esta materia será obrigatoria e exclusiva para estudantes da especialidade da química e Economía Industrial que teñen que cursar seis das sete materias desta especialidade. Será estudada no segundo semestre, despois de completar esta especialidade e antes da conclusión do Traballo Fin de Máster.</p> <p>A xestión académica desta materia será xerar una bolsa práctica ofrecidas polas empresas asociadas do Mestre. Os alumnos farán unha selección ordenada de prácticas de interese, tras o que lles serán asignadas as prácticas correspondente, de acordo cos criterios de mérito académico. Vaise garantir que todos os estudantes poda realizarlas nunha empresa.</p> <p>Cada alumno terá un supervisor da empresa, o que pode garantir o progreso e calidade do traballo e emitir un informe no final da súa estadía no mesmo, de acordo coas competencias definidas na memoria. Este informe será usado polo Comité Académico do Mestre de avaliación dos alumnos. Por outra banda, tamén estará baixo a supervisión dun titor académico dunha das universidades do consorcio ( "Titor Interno"), que será un profesor/a da titulación do Mestrado, e a súa misión e de facer un seguimento máis directo das prácticas, responder ás expectativas creadas e asegurar o bo desenvolvemento da práctica e avaliar o alumno.</p> <p>O informe de ambos titores serán utilizados para a avaliación dos alumnos. O titor académico pode avaliar considerando o informe presentado polo alumno ao final do informe presentado polo titor externo. A cualificación será comunicado ao coordinador das practicas.</p> |

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

| Recommendations                                          |
|----------------------------------------------------------|
| Subjects that it is recommended to have taken before     |
|                                                          |
| Subjects that are recommended to be taken simultaneously |
|                                                          |
| Subjects that continue the syllabus                      |
|                                                          |
| Other comments                                           |



(\*)The teaching guide is the document in which the URV publishes the information about all its courses. It is a public document and cannot be modified. Only in exceptional cases can it be revised by the competent agent or duly revised so that it is in line with current legislation.