| | | Teaching | Guide | | |
|-------------------------|--|------------------|-------------------|-----------------------|------------------------------|
| | Identifyin | ng Data | | | 2019/20 |
| Subject (*) | Physical-chemistry of polymers | | | Code | 730495011 |
| Study programme | Mestrado Universitario en Materia | ais Complexos: A | Análise Térmica e | Reoloxía (plan 2012) | |
| | | Descrip | otors | | |
| Cycle | Period | Yea | r | Туре | Credits |
| Official Master's Degre | e 1st four-month period | Firs | t | Obligatory | 3 |
| Language | English | | , | | , |
| Teaching method | Face-to-face | | | | |
| Prerequisites | | | | | |
| Department | | | | | |
| Coordinador | López Beceiro, Jorge José | | E-mail | jorge.lopez.bece | iro@udc.es |
| Lecturers | , | | E-mail | | |
| | Mammeri , Fayna | | | fayna.mammeri@ | univ-paris-diderot.fr |
| | Piro , B. | | | piro@univ-paris- | diderot.fr |
| Web | | 1 | | | |
| General description | This course is an introduction to the | he science of po | lymers and provid | es an overview of cha | racterization, structure and |
| | properties of polymers. It is illustrated by examples of applications of polymers. | | | | |

| | Study programme competences / results |
|------|---|
| Code | Study programme competences / results |
| A5 | Understanding the relationships between structure and properties of materials |
| B1 | Knowledge and understanding to provide a basis or opportunity for originality in developing and / or applying ideas, often in a research context |
| B2 | The students have the skill to apply their knowledge and their ability to solve problems in new or unfamiliar contexts within broader (or multidisciplinary) contexts related to their field of study |
| B4 | That the students can communicate their conclusions and the knowledge and last reasons behind that conclusions to specialized and non specialized audience in a clear and unambiguous way |
| B8 | Applying a critical, logical and creative way of thinking |
| B12 | Communicate effectively in the work environment |
| B13 | Analysis-oriented attitude |
| B14 | Ability to find and manage the information |
| B18 | Ability for abstraction, understanding and simplification of complex problems |
| B21 | To assess the importance of research, innovation and technological developments in the socio-economic and cultural progress of society |
| C2 | Have a good command of spoken and writing expression and understanding of a foreign language. |
| C4 | Developing for the exercise of an open, educated, critical, committed, democratic and solidary citicenship, able to analyze reality, diagnose problems, formulate and implement solutions based on knowledge and oriented to the common good. |
| C6 | Critically assessing the knowledge, technology and information available to solve the problems they face with. |
| C8 | To assess the importance of research, innovation and technological development in the socio-economic and cultural progress of society. |

| Learning outcomes | |
|-------------------|-----------------|
| Learning outcomes | Study programme |
| | competences / |
| | results |

| This course is designed as an introduction to the basic science of polymers and provides an overview of characterization, | AR5 | BR1 | CR2 |
|---|-----|------|-----|
| structure and properties of polymers. The course offers an introduction to the science underlying the synthesis and | | BR2 | CR4 |
| characterization of polymer morphology polymers, and information about their structures and properties. The course also | | BR4 | CR6 |
| illustrates some examples of applications of polymers. | | BR8 | CR8 |
| | | BR12 | |
| | | BR13 | |
| | | BR14 | |
| | | BR18 | |
| | | BR21 | |

| | Contents |
|---|-----------|
| Topic | Sub-topic |
| 1. Physicochemical fundamentals of polymers | |
| 2. Synthesis and characterization of polymers (polymer | |
| synthesis: stepwise polymerization and PCR Structure: chain | |
| conformations, amorphous polymers and semicrystalline | |
| polymers morphology, molecular weight measurement) | |
| 3. Introduction to polymer processing | |
| 4. mechanical and rheological properties (behavioral stress / | |
| strain, viscoelasticity, nonlinear mechanical behavior and | |
| rheological). | |

| | Plannin | g | | |
|---|------------------------------|-------------------------|---------------------------|-------------|
| Methodologies / tests | Competencies / | Teaching hours | Student?s personal | Total hours |
| | Results | (in-person & virtual) | work hours | |
| Guest lecture / keynote speech | A5 B1 B2 B12 B13 | 15 | 10 | 25 |
| | B18 | | | |
| Laboratory practice | B8 B14 B21 C4 C6 | 15 | 5 | 20 |
| | C8 | | | |
| Supervised projects | B2 B4 B14 B21 C2 | 5 | 25 | 30 |
| Personalized attention | | 0 | | 0 |
| (*)The information in the planning table is for | r guidance only and does not | take into account the l | neterogeneity of the stud | dents. |

| | Methodologies | | |
|---------------------|---|--|--|
| Methodologies | odologies Description | | |
| Guest lecture / | Presentation given by the professor, on a schematic basis, focusing on the main topics, covering both theoretical and practical | | |
| keynote speech | issues. | | |
| Laboratory practice | ory practice Performance of practical activities such as demonstrations, exercises, experiments, etc | | |
| Supervised projects | Activities whose purpose is that the students enlarge the study of the topics pesented in the program and consolidate their | | |
| | acquired knowledge and capabilities. These activities should also help the students learn and improve their capabilities in | | |
| | literature survey. | | |

| | Personalized attention | | |
|---------------------|--|--|--|
| Methodologies | Methodologies Description | | |
| Guest lecture / | The personalized attention to students, understood as a support in the teaching-learning process, will take place in the hours | | |
| keynote speech | of tutoring of the professor. | | |
| Laboratory practice | | | |
| Supervised projects | No academic dispensation is accepted. | | |
| | | | |

| | Assessment | | |
|---------------------|------------------|--|----|
| Methodologies | Competencies / | Description | |
| | Results | | |
| Guest lecture / | A5 B1 B2 B12 B13 | Examination or objective test. | 50 |
| keynote speech | B18 | | |
| Laboratory practice | B8 B14 B21 C4 C6 | Continuous assessment through monitoring of student work in the classroom, | 20 |
| | C8 | laboratory and / or tutorials. | |
| Supervised projects | B2 B4 B14 B21 C2 | Presentation (oral and written) of the supervised work. | 30 |

| 1 | |
|---|------------------------|
| | Sources of information |
| | |
| | |

Assessment comments

| Basic | |
|---------------|--|
| Complementary | |
| | |
| | Recommendations |
| | Cubinete that it is recommended to have taken hefers |

| 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

To help achieve a sustained immediate environment and meet the objective of action number 5: "Healthy and sustainable environmental and social teaching and research" of the "Green Campus Ferrol Action Plan: The delivery of the documentary work carried out in this subject: &nbs

(*)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.