



| Teaching Guide      |                                                                                                                                                                                                                                                                                                                                                                                                               |        |                                                                                                                    |           |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------|-----------|
| Identifying Data    |                                                                                                                                                                                                                                                                                                                                                                                                               |        | 2017/18                                                                                                            |           |
| Subject (*)         | Introduction to Botany: General Botany                                                                                                                                                                                                                                                                                                                                                                        |        | Code                                                                                                               | 610G02023 |
| Study programme     | Grao en Bioloxía                                                                                                                                                                                                                                                                                                                                                                                              |        |                                                                                                                    |           |
| Descriptors         |                                                                                                                                                                                                                                                                                                                                                                                                               |        |                                                                                                                    |           |
| Cycle               | Period                                                                                                                                                                                                                                                                                                                                                                                                        | Year   | Type                                                                                                               | Credits   |
| Graduate            | 1st four-month period                                                                                                                                                                                                                                                                                                                                                                                         | First  | Obligatoria                                                                                                        | 6         |
| Language            | SpanishGalician                                                                                                                                                                                                                                                                                                                                                                                               |        |                                                                                                                    |           |
| Teaching method     | Face-to-face                                                                                                                                                                                                                                                                                                                                                                                                  |        |                                                                                                                    |           |
| Prerequisites       |                                                                                                                                                                                                                                                                                                                                                                                                               |        |                                                                                                                    |           |
| Department          | Bioloxía                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                                                                                                    |           |
| Coordinador         | Fagúndez Díaz, Jaime                                                                                                                                                                                                                                                                                                                                                                                          | E-mail | jaime.fagundez@udc.es                                                                                              |           |
| Lecturers           | Cremades Ugarte, Javier<br>Díaz Tapia, Pilar<br>Fagúndez Díaz, Jaime<br>Pimentel Pereira, Manuel<br>Sahuquillo Balbuena, Elvira                                                                                                                                                                                                                                                                               | E-mail | javier.cremades@udc.es<br>p.diaz@udc.es<br>jaime.fagundez@udc.es<br>m.pimentel@udc.es<br>elvira.sahuquillob@udc.es |           |
| Web                 |                                                                                                                                                                                                                                                                                                                                                                                                               |        |                                                                                                                    |           |
| General description | Iniciación á Botánica ou ciencia que se encarga do estudo dos diferentes grupos de organismos classicamente coñecidos como vexetais, integrando información doutras materias (fisioloxía, anatomía e histoloxía vexetal, bioquímica, xenética, ecoloxía, etc) e que capacita ao alumno para traballar en diferentes ámbitos: como investigador, docente, na asesoría ambiental, a agronomía e a etnobotánica. |        |                                                                                                                    |           |

| Study programme competences / results |                                                                                                        |
|---------------------------------------|--------------------------------------------------------------------------------------------------------|
| Code                                  | Study programme competences / results                                                                  |
| A1                                    | Recoñecer distintos niveis de organización nos sistemas vivos.                                         |
| A2                                    | Identificar organismos.                                                                                |
| A4                                    | Obter, manexar, conservar e observar espécimes.                                                        |
| A7                                    | Reconstruír as relacións filoxenéticas entre unidades operacionais e pór a proba hipóteses evolutivas. |
| A19                                   | Analizar e interpretar o comportamento dous seres vivos.                                               |
| A22                                   | Descibir, analizar, avaliar e planificar o medio físico.                                               |
| A29                                   | Impartir coñecementos de Bioloxía.                                                                     |
| A30                                   | Manexar adecuadamente instrumentación científica.                                                      |
| A31                                   | Desenvolverse con seguridade nun laboratorio.                                                          |
| A32                                   | Desenvolverse con seguridade no traballo de campo.                                                     |
| B1                                    | Aprender a aprender.                                                                                   |
| B6                                    | Organizar e planificar o traballo.                                                                     |
| B8                                    | Sintetizar a información.                                                                              |
| B12                                   | Adaptarse a novas situacións.                                                                          |

| Learning outcomes                                                                                                                                        |  |                                       |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------|--|
| Learning outcomes                                                                                                                                        |  | Study programme competences / results |  |
| -Desenvolver o hábito e a capacidade para o manexo adecuado e crítico da bibliografía.                                                                   |  | B1<br>B8                              |  |
| -Incentivar un maior interese e motivación para o aprendizaxe da Botánica, como unha ciencia imprescindible para a súa completa formación como Biólogos. |  | B6<br>B12                             |  |
| -Entender os tipos de reprodución e ciclos biolóxicos característicos dos distintos grupos vexetais.                                                     |  | A19                                   |  |



|                                                                                                  |                   |  |  |
|--------------------------------------------------------------------------------------------------|-------------------|--|--|
| - Desenvolver as capacidades de observación, descrición e identificación de organismos vexetais. | A1<br>A2<br>A4    |  |  |
| -Aprender as técnicas básicas de traballo de campo e laboratorio en Botánica.                    | A30<br>A31<br>A32 |  |  |
| - Interpretar as evidencias das relacións evolutivas entre os organismos vexetais.               | A7                |  |  |
| - Comprender a organización taxonómica dos organismos vexetais e a súa nomenclatura.             | A1<br>A2<br>A7    |  |  |
| -Coñecer a diversidade vexetal e os niveis de organización morfolóxica.                          | A1<br>A2<br>A29   |  |  |
| - Desenvolver as capacidades de observación, descrición e identificación de organismos vexetais. | A4<br>A19<br>A22  |  |  |
| -Coñecer a diversidade vexetal e os niveis de organización morfolóxica.                          | A1<br>A2          |  |  |

| Contents                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Topic                                                    | Sub-topic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Teoría: Introduction and general characteristics         | 1 Plants and related organisms in the tree of life. Evolutionary relationships and phylogeny. Characteristics and main groups.<br>2 Morphological organization of plants and related organisms. From talophytes to cormophytes.<br>3 Reproduction. Alternation of nuclear phases and generations. Biological cycles.<br>4 Systematics, nomenclature and taxonomy of plants and other related groups.                                                                                                                                                                  |
| Teoría: Studied groups                                   | 5 Flowering plants. General characteristics and life cycle of seed plants.<br>6 Morphology and floral biology of seed plants.<br>7 Angiosperms (monocots and dicots) and gymnosperms.<br>8 The non-flowering plants. General characteristics of embriophytes. Vascular embriophytes. General characteristics and life cycle of pteridophytes.<br>9 Prevascular embriophytes. General characteristics and life cycle of bryophytes.<br>10 Cyanobacteria and eukaryotic algae.<br>11 Fungi and other heterotrophic organisms. Lichens and other symbiotic associations. |
| Teoría: Introduction to plant conservation and geobotany | 12 Conservation of plant diversity. Threats and conservation strategies.<br>13 Geobotany as integrative science. The floristic kingdoms and major plant formations of the Earth.                                                                                                                                                                                                                                                                                                                                                                                      |
| Seminars                                                 | 1 Diagrams and floral formulas. Identification keys (2h).<br>2 Seminar on vascular and prevascular plants (2h).<br>3 Life cycles of algae and fungi (2h).<br>4 Comparative studies of organisms (1h).                                                                                                                                                                                                                                                                                                                                                                 |



|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lab sessions | 1 Observation of terrestrial plants in their natural environment. Collection and preservation methods.<br>2 Observation and description of dicotyledonous angiosperms.<br>3 Observation and Description of monocot angiosperms.<br>4 Observation and description of gymnosperms.<br>5 Observation and description of pteridophytes.<br>6 Observation and description of bryophytes.<br>7 Observation and description of macroscopic algae.<br>8 Observation and description of microscopic algae.<br>9 Observation and description of fungi. |
| Case studies | 1 Collection, identification and conservation of two dicotyledonous angiosperms.<br>2 Collection, identification and conservation of two monocotyledonous angiosperms.<br>3 Collection, identification and conservation of two gymnosperms.<br>4 Collection, identification and conservation of ferns and moss.<br>5 Collection, identification and conservation of two different macroalgae division.<br>6 Collection, identification and preservation of higher fungi and lichen.                                                          |

| Planning                                                                                                                        |                            |                                      |                               |             |
|---------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------------------------|-------------------------------|-------------|
| Methodologies / tests                                                                                                           | Competencies / Results     | Teaching hours (in-person & virtual) | Student?s personal work hours | Total hours |
| Case study                                                                                                                      | A2 A4 A22 A32 B1 B6 B8 B12 | 1                                    | 22                            | 23          |
| Laboratory practice                                                                                                             | A30 A31                    | 18                                   | 9                             | 27          |
| Guest lecture / keynote speech                                                                                                  | A1 A7 A19 A29 B1 B6 B8 B12 | 21                                   | 52.5                          | 73.5        |
| Seminar                                                                                                                         | A7 A1 B1                   | 7                                    | 17.5                          | 24.5        |
| Personalized attention                                                                                                          |                            | 2                                    | 0                             | 2           |
| (*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students. |                            |                                      |                               |             |

| Methodologies                  |                                                                                                                                                                                                                |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Methodologies                  | Description                                                                                                                                                                                                    |
| Case study                     | The student will collect, identify and handle properly preserved, a collection of 12 samples, including 4 angiosperms, 2 gymnosperms, 1 fern, 1 bryophyte, 2 algae from different phyla, 1 fungi and 1 lichen. |
| Laboratory practice            | The student will work with different kinds of living and preserved material, representative of the studied groups of the subject.                                                                              |
| Guest lecture / keynote speech | Lecturers will explain the main concepts of the subject. Slides will be uploaded.                                                                                                                              |
| Seminar                        | Lecturers will invite the students to work on specific aspects of the studied groups, and discussion will follow in seminars.                                                                                  |

| Personalized attention                                                         |                                                                               |
|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Methodologies                                                                  | Description                                                                   |
| Seminar<br>Laboratory practice<br>Case study<br>Guest lecture / keynote speech | Any personal queries will be addressed in personal meetings with the students |

| Assessment    |                        |                                                                   |               |
|---------------|------------------------|-------------------------------------------------------------------|---------------|
| Methodologies | Competencies / Results | Description                                                       | Qualification |
| Seminar       | A7 A1 B1               | Quality of interventions and demonstrated interest in the subject | 5             |



|                                   |                               |                                                                   |    |
|-----------------------------------|-------------------------------|-------------------------------------------------------------------|----|
| Laboratory practice               | A30 A31                       | A short test at the end of the lab sessions                       | 15 |
| Case study                        | A2 A4 A22 A32 B1 B6<br>B8 B12 | Quality of the personal collection of organisms will be evaluated | 15 |
| Guest lecture /<br>keynote speech | A1 A7 A19 A29 B1 B6<br>B8 B12 | Final exam with essay, short-answered and test questions          | 65 |

## Assessment comments

At least 70% of attendance. At least 4.5 over 10 in the final exam and seminars. At least 4 over 10 in the lab exam and case studies.

The student will have two opportunities at June and July, no qualifications will be kept for forthcoming years.

"No presentado" will be achieved only if the student has participated in less than 30% of the total activities.

For part time students and those with any disabilities, the attendance may be substituted by an essay proposed by the professor and evaluated in a personal meeting.

## Sources of information

|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Basic</b>         | Teoría: BARNES, C. (2001). Invitación a la Biología. Panamericana. DIAZ-GONZALEZ, T.E.; FERNÁNDEZ-CARVAJAL, M.C. & FERNÁNDEZ, J. A. (2004). Curso de Botánica. Ediciones Trea, Gijón. FONT I QUER, P. (1982). Iniciación a la Botánica. Editorial Fontalba. FONT I QUER (1987). Plantas medicinales. El Dioscórides renovado. Labor. FONT I QUER, P. (1993). Diccionario de Botánica. Labor, Barcelona. IZCO, J.; BARRENO, E.; BRUGUÉS, M.; COSTA M.; DEVEESA, J.; FERNÁNDEZ, F.; GALLARDO, T.; LLIMONA, X.; SALVO, E.; TALAVERA, S. & VALDÉS, B. (2004). Botánica. McGraw-Hill, Madrid. NABORS, M.W. (2006). Introducción a la Botánica. Pearson. REECE, C. et al. (2008). Biology. Pearson International Edition. SCAGEL, R.; BANDONI, R.J.; ROUSE, G.E.; SCHOFIELD, G.E.; STEIN, J.R. & TAYLOR, T.M. (1987). El Reino Vegetal. Omega, Barcelona. STRASBURGER, E., F. NOLL, H. SCHENCK & A.F.W. SCHIMPER. (2004). Tratado de Botánica (actualizado por P. SITTE et al.) Omega, Barcelona. Prácticas: |
| <b>Complementary</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

## Recommendations

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

### Subjects that are recommended to be taken simultaneously

### Subjects that continue the syllabus

Plant Systematics: Cryptogamia/610G02024

Plant Systematics: Phanerogamia/610G02025

Botanical Geography: Geobotany/610G02026

## Other comments

&lt;p&gt; &amp;amp;lt;p&amp;amp;gt;It is highly recommended that you take this course before any of other continuing subjects.&amp;amp;lt;/p&amp;amp;gt; &lt;/p&gt;

(\*)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.