



## Teaching Guide

| Teaching Guide      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |        |            |                                            |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|--------------------------------------------|
| Identifying Data    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |        |            | 2024/25                                    |
| Subject (*)         | Econometrics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        | Code       | 611G02019                                  |
| Study programme     | Grao en Administración e Dirección de Empresas                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |            |                                            |
| Descriptors         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |        |            |                                            |
| Cycle               | Period                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Year   | Type       | Credits                                    |
| Graduate            | 2nd four-month period                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Second | Obligatory | 6                                          |
| Language            | Spanish                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        |            |                                            |
| Teaching method     | Face-to-face                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |            |                                            |
| Prerequisites       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |        |            |                                            |
| Department          | Economía                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |        |            |                                            |
| Coordinador         | Rey Graña, Carlota                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        | E-mail     | carlota.rey@udc.es                         |
| Lecturers           | Lodeiro Hermida, Maria Jose<br>Rey Graña, Carlota                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        | E-mail     | maria.lodeiro@udc.es<br>carlota.rey@udc.es |
| Web                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |        |            |                                            |
| General description | Esta materia, fortemente relacionada coa teoría e a política económica, a estatística e as matemáticas, é unha continuación da Introducción á Econometría impartida no primeiro cuadrimestre, e céntrase, basicamente, en proporcionar un soporte axeitado que permita unha posterior ampliación dos coñecementos no marco da disciplina. A utilización de técnicas de inferencia estatística e a valoración da posible aplicación dos modelos con fins predictivos constitúen unha parte fundamental do temario. |        |            |                                            |

## Study programme competences / results

| Code | Study programme competences / results                                                                                                                                                                                                                                                 |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A3   | Evaluate and foreseeing, from relevant data, the development of a company.                                                                                                                                                                                                            |
| A4   | Elaborate advisory reports on specific situations of companies and markets                                                                                                                                                                                                            |
| A6   | Identify the relevant sources of economic information and to interpret the content.                                                                                                                                                                                                   |
| A8   | Derive, based on from basic information, relevant data unrecognizable by non-professionals.                                                                                                                                                                                           |
| A9   | Use frequently the information and communication technology (ICT) throughout their professional activity.                                                                                                                                                                             |
| A10  | Read and communicate in a professional environment at a basic level in more than one language, particularly in English                                                                                                                                                                |
| A11  | To analyze the problems of the firm based on management technical tools and professional criteria                                                                                                                                                                                     |
| A12  | Communicate fluently in their environment and work by teams                                                                                                                                                                                                                           |
| B1   | CB1-The students must demonstrate knowledge and understanding in a field of study that part of the basis of general secondary education, although it is supported by advanced textbooks, and also includes some aspects that imply knowledge of the forefront of their field of study |
| B2   | CB2 - The students can apply their knowledge to their work or vocation in a professional way and have competences typically demonstrated by means of the elaboration and defense of arguments and solving problems within their area of work                                          |
| B3   | CB3- The students have the ability to gather and interpret relevant data (usually within their field of study) to issue evaluations that include reflection on relevant social, scientific or ethical                                                                                 |
| B4   | CB4-Communicate information, ideas, problems and solutions to an audience both skilled and unskilled                                                                                                                                                                                  |
| B5   | CB5-Develop skills needed to undertake further studies learning with a high degree of autonomy                                                                                                                                                                                        |
| B10  | CG5-Respect the fundamental and equal rights for men and women, promoting respect of human rights and the principles of equal opportunities, non-discrimination and universal accessibility for people with disabilities.                                                             |
| C1   | Express correctly, both orally and in writing, in the official languages of the autonomous region                                                                                                                                                                                     |
| C4   | To be trained for the exercise of citizenship open, educated, critical, committed, democratic, capable of analyzing reality and diagnose problems, formulate and implement knowledge-based solutions oriented to the common good                                                      |
| C5   | Understand the importance of entrepreneurial culture and know the means and resources available to entrepreneurs                                                                                                                                                                      |
| C6   | Assess critically the knowledge, technology and information available to solve the problems and take valuable decisions                                                                                                                                                               |
| C7   | Assume as professionals and citizens the importance of learning throughout life.                                                                                                                                                                                                      |
| C8   | Assess the importance of research, innovation and technological development in the economic and cultural progress of society.                                                                                                                                                         |



| Learning outcomes                                                                                                                           |                                       |                |                      |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|----------------|----------------------|
| Learning outcomes                                                                                                                           | Study programme competences / results |                |                      |
| Coñecer e utilizar axeitadamente algunhas técnicas de inferencia estatística e comprender os resultados da súa aplicación empírica.         | A3<br>A4<br>A6<br>A8                  | B3<br>B4<br>B5 | C1                   |
| Coñecer e valorar a utilidade dos modelos econométricos no campo da predición.                                                              | A3<br>A4<br>A6<br>A8                  | B1             | C1<br>C5<br>C6       |
| Coñecer e aplicar os procedementos do software apropiado para estimar, contrastar e predicir cun modelo de regresión lineal múltiple.       | A3<br>A4<br>A8<br>A9<br>A10           | B2             | C8                   |
| Analizar, dende un punto de vista crítico, os resultados da aplicación das técnicas e instrumentos que se utilizan no ámbito da disciplina. | A11<br>A12                            | B10            | C1<br>C4<br>C7<br>C8 |

| Contents                                 |                                                                                                                                                                                                                                                |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Topic                                    | Sub-topic                                                                                                                                                                                                                                      |
| 1. O modelo de regresión lineal clásico. | <ul style="list-style-type: none"> <li>- Revisión das hipóteses e do proceso de estimación.</li> <li>- Propiedades dos estimadores.</li> <li>- Análise da bondade do axuste.</li> </ul>                                                        |
| 2. Inferencia no modelo clásico.         | <ul style="list-style-type: none"> <li>- Hipótese de normalidade.</li> <li>- Distribucións de probabilidade dos estimadores.</li> <li>- Contrastes de hipóteses para os parámetros.</li> <li>- Estimación por intervalo.</li> </ul>            |
| 3. Predición no modelo clásico.          | <ul style="list-style-type: none"> <li>- A predición: concepto e clases.</li> <li>- Predición óptima no modelo clásico.</li> <li>- Medidas avaliadoras da capacidade predictiva.</li> <li>- A estabilidade no período de predición.</li> </ul> |
| 4. Multicolinealidade.                   | <ul style="list-style-type: none"> <li>- Concepto.</li> <li>- Causas e consecuencias.</li> <li>- Procedementos para detectala.</li> <li>- Posibles formas de actuar.</li> <li>- Selección de regresores.</li> </ul>                            |

| Planning                       |                                                    |                                      |                               |             |
|--------------------------------|----------------------------------------------------|--------------------------------------|-------------------------------|-------------|
| Methodologies / tests          | Competencies / Results                             | Teaching hours (in-person & virtual) | Student?s personal work hours | Total hours |
| Introductory activities        | A9 B10 C7 C8                                       | 1                                    | 0                             | 1           |
| Guest lecture / keynote speech | A11 B1 B2 B3 B4 B5<br>B10 C5 C6 C7 C8              | 17                                   | 34                            | 51          |
| Workshop                       | A3 A6 A8 A11 A12 B3<br>B5 B10 C1 C4 C5 C6<br>C7 C8 | 17                                   | 42.5                          | 59.5        |



|                                                                                                                                 |                                      |     |    |     |
|---------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-----|----|-----|
| ICT practicals                                                                                                                  | A4 A6 A10 A11 A12<br>B5 B10 C1 C4 C8 | 8   | 16 | 24  |
| Objective test                                                                                                                  | A3 A8 A11                            | 2   | 6  | 8   |
| Personalized attention                                                                                                          |                                      | 6.5 | 0  | 6.5 |
| (*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students. |                                      |     |    |     |

| Methodologies                  |                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Methodologies                  | Description                                                                                                                                                                                                                                                                                                                            |
| Introductory activities        | Consisten na presentación da materia suxerindo a revisión dalgúns conceptos correspondentes a outras que xa se teñen cursado. Tamén se expoñen detalladamente os resultados da aprendizaxe, as actividades coas que se pretende acadalos e os criterios para a avaliación.                                                             |
| Guest lecture / keynote speech | Aínda que se fomentará a participación dos alumnos, cada sesión maxistral consiste na exposición oral dos conceptos e métodos por parte dos profesores. A exposición complementase coa utilización de medios audiovisuais e inclúe exemplos e exercicios que permiten destacar as limitacións e as posibilidades dos métodos expostos. |
| Workshop                       | Cada taller é unha sesión interactiva na que se realizan aplicacións, exercicios, problemas e tarefas prácticas que permiten aos alumnos comprender os fundamentos teóricos da materia e aprender a valorar, dende un punto de vista crítico, os resultados obtidos.                                                                   |
| ICT practicals                 | Son sesións interactivas dedicadas á aprendizaxe das ferramentas informáticas apropiadas para efectuar aplicacións empíricas dos métodos expostos nas sesións teóricas.                                                                                                                                                                |
| Objective test                 | É unha proba para avaliar o grao de aprendizaxe.                                                                                                                                                                                                                                                                                       |

| Personalized attention                       |             |
|----------------------------------------------|-------------|
| Methodologies                                | Description |
| Workshop<br>Objective test<br>ICT practicals | .           |

| Assessment     |                                                    |                                                                                                                                                                                                         |               |
|----------------|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| Methodologies  | Competencies / Results                             | Description                                                                                                                                                                                             | Qualification |
| Workshop       | A3 A6 A8 A11 A12 B3<br>B5 B10 C1 C4 C5 C6<br>C7 C8 | Nestas clases os alumnos deberán resolver e entregar as probas, controis, problemas e cuestións que lles sean propostos, na forma que se detallará ao comenzo do curso.                                 | 60            |
| Objective test | A3 A8 A11                                          | A proba obxectiva para a avaliación da aprendizaxe combina preguntas conceptuais e de razoamento con outras de contido practico coas que poden achegarse saídas de ordenador para a súa interpretación. | 40            |

| Assessment comments |
|---------------------|
|                     |

| Sources of information |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Basic                  | <ul style="list-style-type: none"> <li>- Rey Graña, C. y Lodeiro Hermida, M. (2021). Econometría para entender. <a href="https://fee.carlarey.es/">https://fee.carlarey.es/</a></li> <li>- Ramil, M.; Rey, C.; Lodeiro, M.; Arranz, M. (2013). Introducción a la econometría. Teoría y práctica. Reprografía Noroeste, S.L.</li> <li>- Carrascal, U.; González, Y.; Rodríguez, B. (2001). Análisis econométrico con Eviews. Ra-Ma.</li> <li>- Guisán, M.C. (1997). Econometría. McGraw-Hill.</li> </ul> |



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|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Complementary</b> | <ul style="list-style-type: none"><li>- Gujarati, D.; Porter, D. (2010). Econometría. McGraw-Hill.</li><li>- Wooldridge, J. (2012). Introducción a la econometría. Un enfoque moderno. Thomson.</li></ul> <p>A medida que se avanza no coñecemento das técnicas econométricas é recomendable a lectura de artigos enfocados a resolver problemas reais da economía, tales como os que poden atoparse en acceso libre en <a href="http://www.usc.es/economet">http://www.usc.es/economet</a> e <a href="http://ideas.repec.org">http://ideas.repec.org</a>. Utilizaranse, ademais, outros libros de texto, distintas fontes de datos e material dispoñible na rede, que se detallarán ao longo do curso.</p> |
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## Recommendations

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

Principles of Microeconomics/611G02001

Principles of Macroeconomics/611G02005

Statistics I/611G02006

Mathematics I/611G02009

Mathematics II/611G02010

Statistics and Introduction to Econometrics/611G02014

### 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.