



## Teaching Guide

| Teaching Guide      |                                                                                                                                                                                                                                                                                                                                                          |        |                                                                                  |           |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------------------------------------------------------------------------------|-----------|
| Identifying Data    |                                                                                                                                                                                                                                                                                                                                                          |        |                                                                                  | 2021/22   |
| Subject (*)         | Industrial Management                                                                                                                                                                                                                                                                                                                                    |        | Code                                                                             | 730G03024 |
| Study programme     | Grao en Enxeñaría Mecánica                                                                                                                                                                                                                                                                                                                               |        |                                                                                  |           |
| Descriptors         |                                                                                                                                                                                                                                                                                                                                                          |        |                                                                                  |           |
| Cycle               | Period                                                                                                                                                                                                                                                                                                                                                   | Year   | Type                                                                             | Credits   |
| Graduate            | 1st four-month period                                                                                                                                                                                                                                                                                                                                    | Third  | Obligatory                                                                       | 6         |
| Language            | Spanish                                                                                                                                                                                                                                                                                                                                                  |        |                                                                                  |           |
| Teaching method     | Face-to-face                                                                                                                                                                                                                                                                                                                                             |        |                                                                                  |           |
| Prerequisites       |                                                                                                                                                                                                                                                                                                                                                          |        |                                                                                  |           |
| Department          | EconomíaEmpresa                                                                                                                                                                                                                                                                                                                                          |        |                                                                                  |           |
| Coordinador         | Crespo Pereira, Diego                                                                                                                                                                                                                                                                                                                                    | E-mail | diego.crespo@udc.es                                                              |           |
| Lecturers           | Crespo Pereira, Diego<br>Garcia del Valle, Alejandro<br>Pernas Álvarez, Javier                                                                                                                                                                                                                                                                           | E-mail | diego.crespo@udc.es<br>alejandro.garcia.delvalle@udc.es<br>javier.pernas2@udc.es |           |
| Web                 | www.gii.udc.es                                                                                                                                                                                                                                                                                                                                           |        |                                                                                  |           |
| General description | This course teaches Operations Management from the point of view of Industrial Engineering.                                                                                                                                                                                                                                                              |        |                                                                                  |           |
| 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                                                                                                                                                                                                                                                 |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A17  | CR11 - Coñecementos aplicados de organización de empresas.                                                                                                                                                                                                                  |
| B2   | CB02 - Que os estudantes saiban aplicar os seus coñecementos ao seu traballo ou vocación dunha forma profesional e posúan as competencias que adoitan demostrarse por medio da elaboración e defensa de argumentos e a resolución de problemas dentro da súa área de estudo |
| B3   | CB03 - Que os estudantes teñan a capacidade de reunir e interpretar datos relevantes (normalmente dentro da súa área de estudo) para emitiren xuízos que inclúan unha reflexión sobre temas relevantes de índole social, científica ou ética                                |
| B4   | CB04 - Que os estudantes poidan transmitir información, ideas, problemas e solucións a un público tanto especializado como leigo                                                                                                                                            |
| B5   | CB05 - Que os estudantes desenvolvan aquelas habilidades de aprendizaxe necesarias para emprenderen estudos posteriores cun alto grao de autonomía                                                                                                                          |
| B7   | B5 - Ser capaz de realizar unha análise crítica, avaliación e síntese de ideas novas e complexas                                                                                                                                                                            |
| C1   | C3 - Utilizar as ferramentas básicas das tecnoloxías da información e as comunicacións (TIC) necesarias para o exercicio da súa profesión e para a aprendizaxe ao longo da súa vida.                                                                                        |
| C4   | C6 - Valorar criticamente o coñecemento, a tecnoloxía e a información dispoñible para resolver os problemas cos que deben enfrontarse.                                                                                                                                      |
| C6   | C8 - Valorar a importancia que ten a investigación, a innovación e o desenvolvemento tecnolóxico no avance socioeconómico e cultural da sociedade.                                                                                                                          |



| Learning outcomes                           |  |                             |       |
|---------------------------------------------|--|-----------------------------|-------|
| Learning outcomes                           |  | Study programme competences |       |
| Knowledge of operations management methods. |  | A17                         | B2 C1 |
|                                             |  |                             | B3 C4 |
|                                             |  |                             | B4 C6 |
|                                             |  |                             | B5    |
|                                             |  |                             | B7    |
| Knowledge of manufacturing systems.         |  | A17                         | B2 C1 |
|                                             |  |                             | B3 C4 |
|                                             |  |                             | B4 C6 |
|                                             |  |                             | B5    |
|                                             |  |                             | B7    |

| Contents                                                                                              |                                                                                 |
|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| Topic                                                                                                 | Sub-topic                                                                       |
| The following topics develop the contents established in the tab of the Verification Memory that are: | The Production System. Operations management. Planning, management and control. |
| 1. Introduction                                                                                       |                                                                                 |
| 2. Technical and economic analysis of decision alternatives                                           |                                                                                 |
| 3. Selection, design and process analysis                                                             |                                                                                 |
| 4. Forecasting and demand planning                                                                    |                                                                                 |
| 5. Aggregate Production Planning                                                                      |                                                                                 |
| 6. Inventory Management                                                                               |                                                                                 |
| 7. LEAN and JIT Production                                                                            |                                                                                 |
| 8. Enterprise Resource Planning ERP                                                                   |                                                                                 |
| 9. Scheduling jobs                                                                                    |                                                                                 |

| Planning                                                                                                                        |                                |                      |                               |             |
|---------------------------------------------------------------------------------------------------------------------------------|--------------------------------|----------------------|-------------------------------|-------------|
| Methodologies / tests                                                                                                           | Competencies                   | Ordinary class hours | Student's personal work hours | Total hours |
| Guest lecture / keynote speech                                                                                                  | A17 B2 B3 B5                   | 30                   | 30                            | 60          |
| ICT practicals                                                                                                                  | B4 B7 C1 C4 C6                 | 15                   | 15                            | 30          |
| Supervised projects                                                                                                             | A17 B2 B3 B4 B5 B7<br>C1 C4 C6 | 2                    | 20                            | 22          |
| Problem solving                                                                                                                 | A17 B2 B3 B4 B5 B7<br>C1 C4 C6 | 13                   | 13                            | 26          |
| Mixed objective/subjective test                                                                                                 | A17 B2 B3 B4 B5 B7<br>C1 C4 C6 | 3                    | 6                             | 9           |
| 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 | Lectures in large groups                                                                     |
| ICT practicals                 | Classes in medium and small groups using ICT (Excel, ExtendSim and other appropriate tools). |
| Supervised projects            | Team based work proposed by the teacher at the beginning of the course.                      |
| Problem solving                | Classes for solving problems using a computer.                                               |



|                                 |            |
|---------------------------------|------------|
| Mixed objective/subjective test | Final exam |
|---------------------------------|------------|

| Personalized attention                                                                                                        |                                                    |
|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| Methodologies                                                                                                                 | Description                                        |
| Guest lecture / keynote speech<br>ICT practicals<br>Mixed objective/subjective test<br>Supervised projects<br>Problem solving | Personal attention will be made in tutorial hours. |

| Assessment                      |                                |                                                                   |               |
|---------------------------------|--------------------------------|-------------------------------------------------------------------|---------------|
| Methodologies                   | Competencies                   | Description                                                       | Qualification |
| Mixed objective/subjective test | A17 B2 B3 B4 B5 B7<br>C1 C4 C6 | Final exam.                                                       | 70            |
| Supervised projects             | A17 B2 B3 B4 B5 B7<br>C1 C4 C6 | Submission and presentation of a project proposed by the teacher. | 30            |

| Assessment comments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The "students with recognition of a part-time academic and exemption of assistance" will communicate at the beginning of the course your situation to the teachers of the subject, as established by the "Standard that regulates the dedication to the study of undergraduates in the UDC "(Art.3.be 4.5) and the" Standards for evaluation, review and claim of the qualifications of undergraduate and master's degree (Art. 3 and 8b).Students in this situation will be assessed on the date approved by the School Board, by an objective test consisting of solving exercises on the contents of step 3 of the Guide.The students will be graded according to the weights assigned to each methodology in the previous table. In the second chance exam the students can resit the mixed test. |

| Sources of information |                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Basic</b>           | <ul style="list-style-type: none"> <li>- Collier, David Alan; Evans, James R. (). OM4. CENGAGE Learning</li> <li>- Heizer, Jay and Render, Barry (). Operations Management. Prentice Hall</li> <li>- Slack, Nigel; Chambers, Stuart; Johnston, Robert (). Operations Management. Prentice Hall</li> <li>- García del Valle, Alejandro; Lamas, Adolfo; Crespo, Diego (). Apuntes de Organización de Empresas. Moodle</li> </ul> |
| <b>Complementary</b>   | <ul style="list-style-type: none"> <li>- Greasley, Andrew (2009). Operations Management. John Wiley</li> <li>- Askin, Ronald G and Jeffrey, B. Goldberg (2002). Desing and Analysis of Lean Production Systems. John Wiley</li> </ul>                                                                                                                                                                                          |

| Recommendations                                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Subjects that it is recommended to have taken before</b>                                                                                                                                                                                                |
| Statistics/730G03008<br>Business Management/730G03010                                                                                                                                                                                                      |
| <b>Subjects that are recommended to be taken simultaneously</b>                                                                                                                                                                                            |
|                                                                                                                                                                                                                                                            |
| <b>Subjects that continue the syllabus</b>                                                                                                                                                                                                                 |
|                                                                                                                                                                                                                                                            |
| <b>Other comments</b>                                                                                                                                                                                                                                      |
| There is an extensive literature on Operations Management in the library of the Polytechnic School (mostly in English).The chapters of the course are available as PDF documents in Moodle. Exams and solutions of previous years are available in Moodle. |



(\*)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.