



Faculty of Tourism & Finance

Degree in Finance & Accounting

First semester

First year

Fundamentals of Operations Management



Teaching guide
Academic year 2016/2017



**Departamento de Economía Financiera y
Dirección de Operaciones**
<http://www.defdo.us.es>

Fundamentals of Operations Management

Academic year 2016/17

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I. COURSE DETAILS

Degree:	Finance & Accounting
Implementation year:	2009
Institution:	Faculty of Tourism & Finance Avda. San Fco. Javier s/n. 41018 Sevilla
Course:	Fundamentals of Operations Management
Course code:	1610004
Type:	Compulsory
Year:	1st
Term:	1st
ECTS:	6.0
Hours:	150
Knowledge area:	Business Organization
Department:	Financial Economy & Operations Management
Department address:	Faculty of Economy and Business Administration Avda. Ramón y Cajal, 1. 41018 Sevilla
Department website:	http://www.defdo.us.es

II. DIRECTORY AND TEACHING STAFF

DPTO. DE ECONOMÍA FINANCIERA Y DIRECCIÓN DE OPERACIONES			
	PHONE	E-MAIL	OFFICE
Head of Department			
Del Pozo Barajas, Rafael	9545 57533	pozo@us.es	7 - CEYE
Secretary			
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TEACHING STAFF ON THIS COURSE			
Alfalla Luque, Rafaela	9545 56456	alfalla@us.es	3 - CEYE
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García Gragera, Juan Antonio	9545 56168	juangar@us.es	2.3 - FTF
Garrido Vega, Pedro (Course coordinator)	9545 56968	pgarrido@us.es	4 - CEYE
Medina López, Carmen	9545 56181	cmedina@us.es	2.4 - FTF
Ruiz Orcaray, Victoria E.	9545 51616	orcaray@us.es	2.2 - FTF
Sacristán Díaz, Macarena	9545 56968	macarena-sd@us.es	4 - CEYE

CEYE: Facultad de Ciencias Económicas y Empresariales (Faculty of Economy and Business Administration)
FTF: Facultad de Turismo y Finanzas (Faculty of Tourism and Finance).

Distribution of teaching staff by group during the present academic year:

Group	Unit of the Syllabus							
	U1	U2	U3	U4	U5	U6	U7	U8
Group 1 Tuesday 11:30-13:30 Thursday 09:30-11:30	Miguel Ángel Domínguez Machuca							
Group 3 Tuesday 09:30-11:30 Thursday 11:30-13:30	Miguel Ángel Domínguez Machuca							
Group 5 Wednesday 09:30-11:30 Friday 11:30-13:30	Pedro Garrido Vega							
Group 7 Tuesday 11:30-13:30 Friday 11:30-13:30	Pedro Garrido Vega							
Group 9 Tuesday 09:30-11:30 Thursday 11:30-13:30	Macarena Sacristán Díaz							
Group 11 (ENGLISH) Tuesday 11:30-13:30 Thursday 9:30-11:30	Macarena Sacristán Díaz							
Group 2 Tuesday 18:00-20:00 Thursday 16:00-18:00	Carmen Medina López						Rafaela Alfalla Luque	
Group 4 Tuesday 16:00-18:00 Thursday 18:00-20:00	Carmen Medina López						Rafaela Alfalla Luque	
Group 6 Wednesday 16:00-18:00 Friday 18:00-20:00	Victoria E. Ruiz Orcaray							
Group 8 Wednesday 18:00-20:00 Friday 16:00-18:00	Juan Antonio García Gragera							
Group 10 Tuesday 18:00-20:00 Thursday 16:00-18:00	Juan Antonio García Gragera							

Morning shift: Groups 1, 3, 5, 7, 9 and 11

Evening shift: Groups 2, 4, 6, 8 and 10

III. TEACHING PLAN

“Operations management is about the way organizations produce goods and services. Everything you wear, eat, sit on, use, read or knock about on the sports field comes to you courtesy of the operations managers who organized its production. Every book you borrow from the library, every treatment you receive at the hospital, every service you expect in the shops and every lecture you attend at university, all have been produced.” (Slack, Chambers and Johnston, 2010-6th ed. *Operations Management*. Prentice Hall, p. 2).

“To many people, the term production conjures up images of factories, machines, and assembly lines. Interestingly enough, the field of production management in the past focused almost exclusively on manufacturing management, with a heavy emphasis on the methods and the techniques used in operating a factory. In recent years, the scope of production management has broadened considerably. Production concepts and techniques are applied to a wide range of activities and situations outside manufacturing; that is, in services such as health care, food service, recreation, banking, hotel management, retail sales, education, transportation, and government. This broadened scope has given the field the name of production/operations management, or more simply, operations management, a term that more closely reflects the diverse nature of activities to which its concepts and techniques are applied.” (Stevenson, 1999, p.4).

“Operations is an exciting area of management that has a profound effect on the productivity of both manufacturing and services. Indeed, few activities have as much impact on the quality of our lives. [...] Operations Management includes a blend of topics from accounting, industrial engineering, management, management science, and statistics. Even if you are not planning on a career in the operations area, you will likely be working with people who are. Therefore, having a solid understanding of the role of operations in an organization is of substantial benefit to you.” (Heizer and Render, 2008, Pearson Education, p. XXI)

“Operations management is important, exciting, challenging... and everywhere you look! It is crucial for the success of every organization, whether large or small because it enables organizations to provide services and products that we all need; because it is central to constant changes in customer preference, networks of supply and demand, and developments in technology; because solutions must be financially sound, resource-efficient, as well as environmentally and socially responsible; because in our daily lives, whether at work or at home, we all experience and manage processes and operations ...” (Slack, Chambers and Johnston, 2010-6th ed. *Operations Management*. Prentice Hall, back cover).

1. COURSE OBJECTIVES

a) *Specific teaching goals*

As is made evident from the above quotations, Operations Management deals with an important area for the way all organisations work: the Operations Subsystem. This subsystem is responsible for managing the processes for creating the goods and services with which firms compete in the market. The development of these processes has a clear effect on accounts and finances. In fact, the Operations area is an important generator of investments and costs, and its performance has a considerable effect on company profitability. For these reasons it is crucial for the students that this course is for to have knowledge of OM's internal workings and of the interrelationships between this Subsystem and the one in which they are to shape their careers, Finance and Accounting. Furthermore, it is a fact that all work of any type requires the management of operations and processes. We therefore strongly believe that a basic knowledge of Operations Management will be important for these students.

Bearing this in mind, the fundamental goal of this course is to provide the future graduates in Finance and Accounting with a suitable level of understanding of Operations Subsystem management in a company that aids and improves their decision making processes in their area of specialisation. Broadly-speaking, the aim is that this subject will help students to have a clear vision of Operations Management, the decisions entailed and the techniques and tools that can be used to solve problems.

As the students that this course is for specialise in Finance and Accounting, a focus has been adopted that aims to make it more useful for professionals in that field. Although Operations is not the area in which students will forge their career, the company is an integrated system with a unique set of problems which means that any actions or decisions taken in any area involve and affect other areas. We therefore aim at providing students with an umbrella, albeit introductory, view of the Operations area and its interrelationships with other company areas, and especially Finance and Accounting. The main issues and tools that might be of interest have thus been chosen and highlighted, with an economic-financial slant being put on them whenever possible. Nevertheless, students are made aware that other important angles and criteria also exist that need to be taken into account when making business decisions, and this is especially true for decisions in the Operations area.

We shall show the planning, programming and production control process and decision capacity at different time levels: long, medium, short and very short term, being mindful of a hierarchical and integrative focus which allows for consistency between different plans and aids decision making in the company. A balanced mixture of strategic and tactical-operational, operations and services and manufacturing topics and issues has been included.

The objective is to promote critical reasoning and a better capacity for adapting to new situations through the aspects of the subject that dealt are with, which would help to better develop the skill of problem solving.

b) *Competences*

• **Generic competences:**

- Becoming familiar with and understanding the contexts in which the areas of finance and accounts interact with other knowledge areas and with legal, economic, ethical, environmental and public environments (G01).
- Gaining the ability to organize, coordinate and plan activities and tasks in an organization (G04).
- Possessing the qualities and abilities that are typical of company administrators and that are usually seen in the preparation and defence of arguments and problem-solving (G19).
- Being motivated by quality (G22).

• **Specific competences:**

- Being able to identify basic aspects of the production area and understanding the differences between the main production systems and how they influence and interact with other areas, especially Finance and Accounts (E32)

2. SYLLABUS

Theory behind the topics in the syllabus can be studied using the core course textbooks referred to below (basic bibliography) and the materials specifically published for the course.

PART I. Operations Design (strategic decisions)

Unit 1. Operations Management and Operations Strategy

- 1.1. What is Operations Management (OM)?
- 1.2. A historical and current view of OM
- 1.3. How to achieve competitive advantage through Operations: goals and strategies
- 1.4. OM decisions: Design and Planning of Operations

Unit 2. The design of the Operations system: strategic decisions

- 2.1. Product selection and design
- 2.2. Process selection and design
- 2.3. Facility layout design
- 2.4. Capacity long-term decisions
- 2.5. Location decisions
- 2.6. Supply chain decisions
- 2.7. Quantitative techniques for strategic decision making

PART II. Operations Management (tactical & operational decisions)

Unit 3. Production and capacity planning process

- 3.1. Production and capacity planning process: levels and plans
- 3.2. Planning software
- 3.3. Using standard time to measure capacity

Unit 4. Inventory management

- 4.1. Introduction to inventory management
- 4.2. Inventory models for independent demand (fixed-quantity & fixed-period systems)
- 4.3. The basic Economic Order Quantity (EOQ) model in deterministic conditions

Unit 5. Aggregate planning and master scheduling

- 5.1. Aggregate planning
- 5.2. Master scheduling

Unit 6. Material requirements planning

- 6.1. Inventory management for dependent demand
- 6.2. MRP structure
- 6.3. MRP calculations: requirements explosion process
- 6.4. Process result: the Material Plan

Unit 7. Very short-term scheduling

- 7.1. Basic very short-term scheduling issues
- 7.2. Scheduling process-oriented facilities (batches)
- 7.3. Loading jobs (assignment)
- 7.4. Sequencing jobs
- 7.5. Detailed scheduling

PART III. Some particular approaches in Operations Management

Unit 8. Lean production

- 8.1. Introduction to lean production: origin and goals
- 8.2. Adjusting the Operations system to Lean Production
- 8.3. Production Planning in a lean environment

Unit 9. Project Management

- 9.1. Introduction to project management
- 9.2. Phases of project management: planning, scheduling and controlling
- 9.3. Project management techniques: PERT and CPM
- 9.4. Determining the project schedule with PERT/CPM
- 9.5. Project costs and duration trade-offs

3. BIBLIOGRAPHY

a) Basic

SACRISTÁN-DÍAZ, M. (2015): *Notes on Operations and Supply Chain Management*. Iriscopy.

b) Complementary

HEIZER, J.; RENDER, B. (2011): *Principles of Operations Management*. 8th edition. Pearson Education.

HILL, A.; HILL, T. (2011): *Essential Operations Management*. Palgrave MacMillan.

JACOBS, F.R.; CHASE, R.B.; AQUILANO, N. J. (2009): *Operations & Supply Management*. 12th edition. McGraw Hill Higher Education.

WALLER, D.L. (2003): *Operations Management: a Supply Chain Approach*. International Thomson Publishing.

IV. METHODS

1. PRACTICAL-THEORETICAL CLASSES

The core elements for the preparation of subject content are basic recommended bibliography and explanations given in class. Although not compulsory for sitting final exams, class attendance is highly recommended, indeed essential, as it permits a better following and understanding of course content, developing the competences to be acquired by the student.

The presentation of the units in class will not necessarily be exhaustive and students may be referred to the recommended reading, especially with regard to topics or areas of the syllabus that are less difficult. Nevertheless, the lecturer will usually go through the main points of the unit being studied in general terms, whilst going into more complex topics in greater detail. This analysis will often involve detailed explanations that may not be explicitly found in the bibliography, which is the reason why continued class attendance is so important.

Students are obliged to attend the classes for the Groups in which they are officially enrolled. **The only group in English in this course is Group 11.** All tests and examinations have to be done for their official Group as these will only be marked by the lecturer or lecturers responsible for the Group in which students are enrolled. The timetable and lecturer(s) for each Group for the 2016/2017 academic year can be found in the Table on page 4.

2. BIBLIOGRAPHY AND OTHER TEACHING MATERIALS

Recommended bibliography fully develops the content of the whole course and is a basic tool for student use. However, it is also recommended that other reading sources be consulted in order to broaden or contrast ideas and points-of-view.

The following materials for the subject will be also available in English in the photocopy shop and on the Virtual Teaching Platform:

- Slides of all units of the syllabus corresponding to presentations used in class. The sets of slides that are provided are intended to act as a guide to the explanations given by the lecturer in class and as an aid to help direct students' study on the topic in question. They are not a replacement for the content of the topic as set out in the subject syllabus which is, as indicated above, expanded upon in the recommended bibliography and the explanations given by the lecturer in class.
- Any other materials that lecturers consider appropriate for teaching such as readings and cases, other problems, tables for solving problems, exams examples, etc.

3. OFFICE HOURS

As a supplementary aid for the preparation of the subject, there are mandatory times set aside for student tutoring or consultations. **The corresponding schedule of the English Group lecturer and any future modifications will be usually posted on the virtual Secretary (<https://sevius.us.es/>) and/or on the virtual platform** (see next section).

Students are asked to observe these times as the presence of the lecturer cannot be guaranteed at other times nor his/her availability to attend to consultations. For their part, the teaching staff will undertake to keep to this schedule, although it must be borne in mind that on occasion this may not be possible due to tutorials being held at the same time as other tasks or responsibilities. Should this be the case, the member of staff in question will do everything in his/her ability to attend to students who would otherwise have attended at the earliest available time.

Students are required to have some knowledge of the topic that they wish to consult on and to not regard tutorials as a replacement for the lectures that take place in the classrooms or as a period for private classes which allow them to dispense with the personal effort that study requires.

Students are also able to contact the teaching staff through the e-mail system available on the virtual teaching platform. This system can be used to provide comments and/or suggestions on any topic related to the subject that might help to improve advancement and may also be used for consultations although, as far as is possible, these will be attended to during the times set aside for tutorials.

Finally, it is likewise especially advised that students should not leave consultation on all the points they are unsure about until the last few days before an upcoming examination.

4. VIRTUAL TEACHING PLATFORM

Fundamentals of Operations Management has its own virtual area on the University of Seville virtual teaching platform (<https://ev.us.es/>), where all the subject matter is available. The virtual teaching platform will also act as a means of publicly posting notices and announcing assignments to be done, examination dates, marks, etc.

The aim is for students to have a tool at their disposal to complement their following of the subject in class, not to replace their attendance, and which allows them to plan their work in the subject with greater autonomy and tailored to their own learning rate. The platform is an absolutely essential work tool for keeping up with the class for any students who in exceptional circumstances cannot attend class.

The content on the Platform will initially include this Teaching Guide for the subject, the slide sets for all the topics in the syllabus which provide diagrams, graphs and other teaching means used in class and links to some websites of interest. This content will be expanded to include further subject matter throughout the course. Students are therefore requested to pay attention and access the Platform on a regular basis.

5. STUDENT'S PERSONAL WORK

Art. 97 of the University of Seville Statutes state that students' duties include:

- a) Study and, in certain cases, initiation in research.
- b) Taking an active part in the full range of university learning activities programmed for the course for which they are to be assessed.
- c) Bearing responsibility for their own learning within the wider framework of their freedom to study as they see fit.

Students are therefore expected to attend class on a regular basis to the extent that they need to and depending on personal circumstances, and to take an active part in classes. They are also expected to duly plan their study of the course contents, to take advantage of the times set aside for tutorials, to refer to the recommended bibliography and materials, and to do the tasks assigned by course lecturers.

V. ASSESSMENT

In accordance with Art. 8 of the University of Seville Norms for Examination Regulation, Evaluation and Marking (NRECA) there are two ways in which subjects can be passed:

- a. By Final Examination
- b. By course

In both cases, assessment will be based on an examination and marks will be awarded on a scale of 0 to 10 points. Below are the regulations that will be in place for assessment systems during the current school year.

1. FINAL EXAMINATIONS

As a result of the agreement of 21/03/01 arrived at by the Governing Body (J.G.) which determines the process by which the dates for examinations and tests are set before the commencement of the academic year, the dates approved by the Faculty Committee in accordance with Art. 28.1.g) for the various sittings for the subject during the 2016-2017 academic year are as follows:

Sitting	Date
3rd Ordinary (December)	23/11/2016 (Wednesday)
1st Ordinary (February)	27/01/2017 (Friday)
2nd Ordinary (September)	07/09/2017 (Thursday)

In accordance with article 19 of the University of Seville Norms for Examination Regulation, Evaluation and Marking (NRECA), students must present their ID Card or Passport at each examination.

No examinations will be held other than on the approved dates, except in compliance with what is set out in the University of Seville NRECA, and Directives on Procedures to be followed when Examinations Coincide dictated by the FTF Faculty Committee. Students are reminded that, according to the first of these, if the date of a final examination should coincide with an examination in another subject from the first year of the degree, a change of date should be applied for at the departmental Secretary's Office at least two months in advance of the date set for the examination.

The subject contents are specified in the official published syllabus and the complete syllabus will be considered as subject matter that students can be examined on unless the teaching staff expressly indicates the contrary.

The definitive structure of each examination will be defined at the appropriate time when the examination in question is officially announced. Nevertheless, examinations will usually consist of an objective multiple-choice test (closed, with 30-40 practical-theoretical questions and 3 options).

Assessment criteria will depend upon the structure of the examination determined for each particular case. Said criteria will therefore be defined when official notice of the sitting is given.

Any student caught copying or speaking in any of the examinations by any of the invigilating teaching staff may have any materials involved in the incident confiscated and be expelled from the examination room. In accordance with Art. 20 of the NRECA, the Departmental Teaching Commission will be duly informed of the incident and this will be resolved by the Commission within the period of one month, with the Rector being informed directly if any indications of a disciplinary misdemeanour are perceived.

2. PASSING BY COURSE (BEFORE THE FINAL EXAMINATION IN FEBRUARY)

To pass by course in the 2016-2017 academic year: three partial examinations will be used to assess and mark students (the specific dates will be announced well in advance both in class and on the virtual platform). The three examinations will consist of the following:

- 1) **First partial examination (theoretical-practical) (25%):** multiple choice test (closed, with 30-40 theoretical-practical questions each with 3 possible answers) covering units 1 to 5 of the subject syllabus.
- 2) **Second partial examination (theoretical-practical) (15%):** multiple choice test (closed, with 30-40 theoretical-practical questions each with 3 possible answers) covering units 6 to 9 of the subject syllabus.
- 3) **Third partial examination (practical) (60%):** involving a set of problems to be solved. After solving the problems, a multiple choice test (closed, with 30-40 theoretical questions each with 3 possible answers) on the problem-solving process, the results and their interpretation will have to be answered in order for the problem to be assessed. This examination will be held in the last week of the course **and only students with an average mark of at least 4 points out of 10 for the previous partial examinations will be allowed to sit this last partial examination.**

The final mark of the examination by course will be calculated with the following weightings: first partial examination mark (P1): 25%; second partial examination mark (P2): 15%; third partial examination mark (P3): 60%. **Compulsory requirements for students to pass the course are:**

- 1) **A combined average mark of at least 4 points (out of 10) for the first and second partial exams** $((P1+P2) / 2 \geq 4)$.
- 2) **A total average mark of at least 5 points (out of 10)** $(P1*0.25+P2*0.15+P3*0.6 \geq 5)$.

In accordance with Article 58 of the University of Seville's General Teaching Regulations (RGAD) (BOUS, no. 2, 10th February, 2009), some other activities for assessment for this course can consist of:

- a) Taking part in practical-theoretical classes.
- b) Doing practical exercises.
- c) Written assignments relating to the course content.
- d) Periodic tests to examine knowledge.

3. OTHER ASSESSMENT-RELATED ISSUES

Students are permitted to sit two of the three ordinary examinations held throughout the academic year except in the case of students enrolling for the first time who can only sit the two examinations that follow immediately after the end of the teaching period for the course (RGAD Arts. 60 and 61).

Students will be marked individually with the competences, knowledge and abilities acquired with regard to the goals and contents specified in the course syllabuses being assessed (NRECA Art. 1). On this particular course, apart from the examinations and periodic tests, the other activities for continual assessment commented in the previous section may be taken into consideration when giving the mark.

As far as Student Records are concerned, according to Art. 23 of the NRECA, marks that can be entered into the official examination records are:

Fail (Suspenso):	0 – 4.9 points	Pass with merit (Notable):	7 – 8.9 points
Pass (Aprobado):	5 – 6.9 points	Pass with distinction (Sobresaliente):	9 – 10 points

- Provisional marks will be announced within the time periods established by Art. 25 of the NRECA. In accordance with these regulations (Art. 26) students have the right look over the exam he/she has done at a time and place set aside to this end. With regard to this checking of exams, students are reminded that, according to said regulations, the objective is to inform the student of how his/her mark was arrived at and what evaluation criteria were applied. Other channels exist for any issues other than these, many of which are dealt with in the EUS and in the NRECA.
- Once the examination has been checked, the teaching staff will publish the final marks within a period of 10 days. Once the final marks have been announced, they will be duly entered into the official records for each sitting, which will be deposited at the departmental Secretary's Office within the time period stipulated on the academic calendar. For this reason it is recommended that students check both provisional and final results in order to detect and correct any possible mistakes.
- Marks will be made public per group except for the examination sitting in December. Each lecturer will solely and exclusively evaluate those students who are officially enrolled in his/her groups. As a result, any examination paper with an incorrectly indicated Group reference number may lead to a delay in notice being given of examination results, or to a given student not appearing on any of the lists, or to a student appearing as not having attended an examination because his/her examination paper was not located until after his/her group's marks were announced.
- The mark of "Absent" or "Did not attend" (No Presentado) shall in no case be entered into the official examination records for any student who has sat any of the final examinations, whatever the number of sittings he/she has exhausted. To conclude, it must be reminded that the mere fact that a student enters into an examination room in order to do a duly-called examination evidently implies that he/she has sat said examination, even though he/she leaves the examination room as soon as the examination starts. This will be counted as a final examination sitting that has been used when determining the number of examination sittings the student has remaining, both with regard to the Academic Year and to the total reckoning for the subject.

VI. INSTRUCTION IN ENGLISH

All students who take the course in English must have an intermediate/advanced knowledge of both the written and spoken language.