



## Course guide

### 300020 - PE - Probability and Statistics

Last modified: 22/01/2024

|                            |   |                                    |
|----------------------------|---|------------------------------------|
| <b>Unit in charge:</b>     | Castelldefels School of Telecommunications and Aerospace Engineering  |                                    |
| <b>Teaching unit:</b>      | 749 - MAT - Department of Mathematics.  |                                    |
| <b>Degree:</b>             | BACHELOR'S DEGREE IN NETWORK ENGINEERING (Syllabus 2009). (Compulsory subject).<br>BACHELOR'S DEGREE IN TELECOMMUNICATIONS SYSTEMS ENGINEERING (Syllabus 2009). (Compulsory subject). |                                    |
| <b>Academic year:</b> 2023 | <b>ECTS Credits:</b> 6.0  | <b>Languages:</b> Catalan, Spanish |

#### LECTURER

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**Coordinating lecturer:** Definit a la infoweb de l'assignatura.

**Others:** Definit a la infoweb de l'assignatura.

#### PRIOR SKILLS

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X

#### REQUIREMENTS

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X

#### DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

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**Specific:**

1. CE 1 TELECOM. Students will acquire the ability to solve mathematical problems for engineering. An aptitude for applying knowledge of linear algebra, geometry, differential geometry, differential and integral calculus, differential equations and partial differential equations, numerical methods, numerical algorithms, statistics and optimisation. (CIN/352/2009, BOE 20.2.2009)

**Transversal:**

2. SELF-DIRECTED LEARNING - Level 1. Completing set tasks within established deadlines. Working with recommended information sources according to the guidelines set by lecturers.

3. TEAMWORK - Level 1. Working in a team and making positive contributions once the aims and group and individual responsibilities have been defined. Reaching joint decisions on the strategy to be followed.

#### TEACHING METHODOLOGY

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X

#### LEARNING OBJECTIVES OF THE SUBJECT

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X



## STUDY LOAD

| Type               | Hours | Percentage |
|--------------------|-------|------------|
| Self study         | 84,0  | 56.00      |
| Hours large group  | 36,0  | 24.00      |
| Hours medium group | 12,0  | 8.00       |
| Hours small group  | 6,0   | 4.00       |
| Guided activities  | 12,0  | 8.00       |

**Total learning time:** 150 h

## CONTENTS

### (ENG) Introducción a la combinatoria

**Description:**

x

**Full-or-part-time:** 17h

Theory classes: 3h

Practical classes: 1h

Guided activities: 2h

Self study : 11h

### (ENG) Conceptos básicos de la probabilidad

**Description:**

x

**Full-or-part-time:** 24h 30m

Theory classes: 4h 30m

Practical classes: 2h

Laboratory classes: 1h

Guided activities: 2h

Self study : 15h

### (ENG) Variables aleatorias

**Description:**

x

**Full-or-part-time:** 30h

Theory classes: 9h

Practical classes: 3h

Laboratory classes: 1h

Guided activities: 2h

Self study : 15h

### (ENG) Vectores aleatorios

**Description:**

x

**Full-or-part-time:** 27h 30m

Theory classes: 7h 30m

Practical classes: 2h

Laboratory classes: 2h

Guided activities: 2h

Self study : 14h

### (ENG) Procesos estocásticos

**Description:**

x

**Full-or-part-time:** 33h

Theory classes: 9h

Practical classes: 3h

Guided activities: 2h

Self study : 19h

### (ENG) Muestras y estimación

**Description:**

x

**Full-or-part-time:** 18h

Theory classes: 3h

Practical classes: 1h

Laboratory classes: 2h

Guided activities: 2h

Self study : 10h

## ACTIVITIES

### (ENG) ACTIVIDADES DIRIGIDAS 1,3

**Full-or-part-time:** 4h

Guided activities: 2h

Self study: 2h

### (ENG) ACTIVIDADES DIRIGIDAS 2

**Full-or-part-time:** 4h

Guided activities: 2h

Self study: 2h



#### (ENG) ACTIVIDADES DIRIGIDAS 4,5

**Full-or-part-time:** 4h

Guided activities: 2h

Self study: 2h

#### (ENG) ACTIVIDADES DIRIGIDAS 6

**Full-or-part-time:** 4h

Guided activities: 2h

Self study: 2h

#### (ENG) ACTIVIDADES DIRIGIDAS 7,8

**Full-or-part-time:** 4h

Guided activities: 2h

Self study: 2h

#### (ENG) ACTIVIDADES DIRIGIDAS 9

**Full-or-part-time:** 2h

Guided activities: 1h

Self study: 1h

#### (ENG) Minitab Project Presentations

**Full-or-part-time:** 6h

Guided activities: 2h

Self study: 4h

#### (ENG) CONTROL 1

**Full-or-part-time:** 10h 30m

Theory classes: 0h 30m

Self study: 10h

#### (ENG) CONTROL 2

**Full-or-part-time:** 10h 30m

Theory classes: 0h 30m

Self study: 10h

## GRADING SYSTEM

XX



## EXAMINATION RULES.

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X

## BIBLIOGRAPHY

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### Basic:

- Leon-Garcia, Alberto. Probability, statistics, and random processes for electrical engineering. 3rd ed. Upper Saddle River, N.J.: Pearson Education, 2009. ISBN 9780137155606.
- Burillo, Josep; Miralles, Alícia; Serra, Oriol. Probabilitat i estadística [on line]. Barcelona: Edicions UPC, 2003 [Consultation: 15/04/2020]. Available on: <http://hdl.handle.net/2099.3/36808>. ISBN 8483016869.

### Complementary:

- Grimmett, Geoffrey; Stirzaker, David. Probability and random processes. 3rd ed. Oxford: Oxford University Press, 2001. ISBN 0198572220.