Course guides
230808 - STAT - Statistics

Unit in charge: Barcelona School of Telecommunications Engineering
Teaching unit: 749 - MAT - Department of Mathematics.
Degree: BACHELOR’S DEGREE IN AUDIOVISUAL SYSTEMS ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR’S DEGREE IN ELECTRONIC SYSTEMS ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR’S DEGREE IN TELECOMMUNICATIONS SYSTEMS ENGINEERING (Syllabus 2010). (Optional subject).
BACHELOR’S DEGREE IN NETWORK ENGINEERING (Syllabus 2010). (Optional subject).
BACHELOR’S DEGREE IN TELECOMMUNICATIONS SCIENCE AND TECHNOLOGY (Syllabus 2010). (Optional subject).
BACHELOR’S DEGREE IN TELECOMMUNICATIONS TECHNOLOGIES AND SERVICES ENGINEERING (Syllabus 2015). (Optional subject).

Academic year: 2016  ECTS Credits: 6.0  Languages: English

LECTURER
Coordinating lecturer: JOSEP M. AROCA FARRERONS
Others: JOSEP M. AROCA FARRERONS

PRIOR SKILLS
Probability, random variables.

REQUIREMENTS
PPEE.

TEACHING METHODOLOGY
- Lectures.- Application classes.- Laboratory classes.- Exercises.- Short answer test (Control).- Short answer test (Test).- Extended answer test (Final Exam).

LEARNING OBJECTIVES OF THE SUBJECT
Basic concepts and methods of statistics. Data analysis, hypothesis testing, estimation.

STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Hours small group</td>
<td>26</td>
<td>17.33</td>
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<tr>
<td>Hours large group</td>
<td>26</td>
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<tr>
<td>Self study</td>
<td>98</td>
<td>65.33</td>
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Total learning time: 150 h
## CONTENTS

### 1. Random variables

**Description:**
Basic concepts of random variables. Parameters. Important variables in statistics: Gaussian, chi-squared, Student's t, Fisher's F.

### 2. Descriptive statistics. Theory of sampling

**Description:**
Populations and samples. Distribution of sample statistics. Sample mean value and variance. Distribution of proportions, differences and sums, ratio of variances.

### 3. Estimation Theory. Confidence Intervals

**Description:**

### 4. Statistical hypothesis testing

**Description:**

### 5. Regression

**Description:**

### 6. Analysis of variance

**Description:**

### 7. Non-parametric tests

**Description:**

## GRADING SYSTEM

The final grade is obtained from the works proposed by the professor (each one 10% to 35% of the total grade)
BIBLIOGRAPHY

Basic:

Complementary: