

310510 - Statistics Applied to Making Decisions

Coordinating unit:	310 - EPSEB - Barcelona School of Building Construction		
Teaching unit:	749 - MAT - Department of Mathematics		
Academic year:	2019		
Degree:	MASTER'S DEGREE IN BUILDING CONSTRUCTION MANAGEMENT (Syllabus 2015). (Teaching unit Optional)		
ECTS credits:	5	Teaching languages:	Spanish

Teaching staff

Coordinator:	Fernando Terrés de Ercilla
Others:	Fernando Terrés de Ercilla

Opening hours

Timetable:	To agree.
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Prior skills

The abilities acquired in a Degree of Building Construction, Engineering or Architecture.

Requirements

To have taken the subject Estadística Aplicada or be able to describe sets of one-dimensional and two-dimensional data, use regression tools, identify and estimate parameters of confidence and variance of random variables with continuous and basic discrete distributions.

Teaching methodology

The objective of the course is the application of the statistical concepts, avoiding as well as possible the mathematical expositions, emphasizing the utilization of these techniques, their application and interpretation and graphical exposition of the results. Although it's true that the basis of the statistics are mathematical, the course emphasizes the applications of the statistics in the management of the organisations. Therefore, during the development of the course there will be fulfilled:

- Master classes where on the basis of a specific management problem, there will be revised with rigour the concepts of the explained statistical methods, emphasizing the importance of understanding the method and its logic, its benefits and disadvantages, and its utilization and interpretation.
- Practical directed classes where there will be set out an exercise or practical case, so that the students will work in groups of three members, under the direction of the professor.
- Workshops, where the students will have more autonomy of resolution. Subsequently, after preparing the activity, the group will expound at class a presentation of the broached problem and their proposals or conclusions for the direction.

Learning objectives of the subject

After completing the course, students will be able to transform data into useful information for decision-making (Business Analytics) information. In particular you will be able to:

- Prepare a set of data for statistical analysis, detecting and treating missing data, and identifying extreme or erroneous values.
- Describe and display characteristics and interest amounts of multidimensional data sets, levels and variability.
- To detect significant relationships between data from the same or different kinds, numerically and graphically summarize these relationships.
- Use analytical techniques for unsupervised learning to describe, visualize and summarize relationships and

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multidimensional data.

- Using statistical models (decision trees, regression) to aid decision making.
- Analyze the risks of business management through simulation models using the Monte Carlo method in different areas of the company (sales, finance, marketing, operations) and project management (cost and time).

Study load

Total learning time: 125h	Hours large group:	15h	12.00%
	Hours medium group:	5h	4.00%
	Hours small group:	5h	4.00%
	Guided activities:	10h	8.00%
	Self study:	90h	72.00%

Content

Qualification system

The main evaluation systems are:

- Mark of proposed works during the practical classes.
- Mark of the workshops prepared and expounded by the students.
- Mark of the written test of control of knowledges.

Regulations for carrying out activities

For the works proposed during the practical classes (30%), there will be facilitated the most possible the delivery by telematic means, by Atenea.

In the case of the workshops (30%), the delivery of the works, previously to their exposition, will be done by telematic means, through Atenea; the exposition of the works will be done in-person.

Regarding the written test of control of knowldege (40%), it will be done in-person.

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Bibliography

Basic:

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Others resources: