230816 - BDR - Big Data and R Programming

Coordinating unit: 230 - ETSETB - Barcelona School of Telecommunications Engineering
Teaching unit: 749 - MAT - Department of Mathematics
Academic year: 2019
Degree: BACHELOR'S DEGREE IN TELECOMMUNICATIONS SCIENCE AND TECHNOLOGY (Syllabus 2010). (Teaching unit Optional)
BACHELOR'S DEGREE IN AUDIOVISUAL SYSTEMS ENGINEERING (Syllabus 2009). (Teaching unit Optional)
BACHELOR'S DEGREE IN ELECTRONIC SYSTEMS ENGINEERING (Syllabus 2009). (Teaching unit Optional)
BACHELOR'S DEGREE IN TELECOMMUNICATIONS SYSTEMS ENGINEERING (Syllabus 2010). (Teaching unit Optional)
BACHELOR'S DEGREE IN NETWORK ENGINEERING (Syllabus 2010). (Teaching unit Optional)
BACHELOR'S DEGREE IN TELECOMMUNICATIONS TECHNOLOGIES AND SERVICES ENGINEERING (Syllabus 2015). (Teaching unit Optional)
ECTS credits: 6
Teaching languages: English

Teaching staff
Coordinator: Josep M. Aroca Farrerons
Others: Josep M. Aroca Farrerons

Prior skills
Probability and Statistics

Teaching methodology
Lectures
Application classes
Laboratory classes

Learning objectives of the subject
Programming in R. Data modeling. Big Data methods and examples.

Study load

<table>
<thead>
<tr>
<th>Total learning time: 150h</th>
<th>Hours small group:</th>
<th>52h</th>
<th>34.67%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Self study:</td>
<td>98h</td>
<td>65.33%</td>
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## Content

<table>
<thead>
<tr>
<th>Section</th>
<th>Learning time:</th>
<th>Description:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduction to R</strong></td>
<td>8h</td>
<td>The R project. Basic operations. Reading data. Graphics.</td>
</tr>
<tr>
<td><strong>Data modeling</strong></td>
<td>12h</td>
<td>Statistics in R. Linear models, regression. Using factors. Visualizing data.</td>
</tr>
<tr>
<td><strong>Big Data overview</strong></td>
<td>8h</td>
<td>A general description of the Big Data paradigm/problems/methods.</td>
</tr>
<tr>
<td><strong>Big Data methods</strong></td>
<td>10h</td>
<td>Predictive analytics, machine learning, data mining.</td>
</tr>
<tr>
<td><strong>Examples</strong></td>
<td>14h</td>
<td>Case example problems</td>
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## Qualification system

Laboratory assessments: 100%
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Bibliography

Basic:
