230088 - SSIS - Signals and Systems

Coordinating unit: 230 - ETSETB - Barcelona School of Telecommunications Engineering
Teaching unit: 739 - TSC - Department of Signal Theory and Communications
Academic year: 2018
Degree: BACHELOR'S DEGREE IN TELECOMMUNICATIONS TECHNOLOGIES AND SERVICES ENGINEERING (Syllabus 2015). (Teaching unit Compulsory)
ECTS credits: 6
Teaching languages: Catalan, Spanish

Teaching staff
Coordinator: Salavedra Moli, Josep
Others: FRANCESC VALLVERDÚ BAYÉS - ANTONI GASULL LLAMPALLAS - JOSEP SALAVEDRA MOLI - M. ASUNCION MORENO BILBAO - ELISA SAYROL CLOLS - CLIMENT NADEU CAMPRUBI - FRANCESC REY NICOLAU

Requirements
MATEL

Degree competences to which the subject contributes

General:
12 CPE N2. They will be able to identify, formulate and solve engineering problems in the ICC field and will know how to develop a method for analysing and solving problems that is systematic, critical and creative.

Teaching methodology
Theoretical classes as well as practical ones using Matlab

Learning objectives of the subject
Signals and systems in the time and frequency domains

Study load

<table>
<thead>
<tr>
<th>Total learning time: 150h</th>
<th>Hours large group:</th>
<th>52h</th>
<th>34.67%</th>
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<tbody>
<tr>
<td></td>
<td>Hours small group:</td>
<td>13h</td>
<td>8.67%</td>
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<tr>
<td></td>
<td>Self study:</td>
<td>85h</td>
<td>56.67%</td>
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Content

1. Introduction. Signals and systems in the time domain
   Learning time: 36h
   Theory classes: 12h
   Laboratory classes: 4h
   Self study: 20h

   Description:
   Time-domain Signal Processing

2. Signals and systems in the frequency domain. The Fourier Transform
   Learning time: 54h
   Theory classes: 20h
   Laboratory classes: 4h
   Self study: 30h

   Description:
   Fourier Transform of analog signals and systems. Sampling Theorem.

3. Fourier Transform of discrete-time signals. DFT
   Learning time: 42h
   Theory classes: 14h
   Laboratory classes: 4h
   Self study: 24h

   Description:
   Fourier Transform of discrete-time signals. Discrete Fourier Transform (DFT)

   Learning time: 16h
   Theory classes: 4h
   Laboratory classes: 1h
   Self study: 11h

   Description:
   Correlation function and power spectrum.

Qualification system

Continuous assessment (40%)
Final exam (60%)
Students with an excellent continuous assessment are eligible to do not take the final exam and completing the course evaluation with a specific activity.
Bibliography

Basic:


Complementary:
