Course guide
230632 - ARRAYS - Array Processing and Smart Antennas

Unit in charge: Barcelona School of Telecommunications Engineering
Teaching unit: 739 - TSC - Department of Signal Theory and Communications.
Degree: MASTER'S DEGREE IN TELECOMMUNICATIONS ENGINEERING (Syllabus 2013). (Optional subject). MASTER'S DEGREE IN ADVANCED TELECOMMUNICATION TECHNOLOGIES (Syllabus 2019). (Optional subject).
Academic year: 2022 ECTS Credits: 5.0 Languages: Spanish, English

LECTURER
Coordinating lecturer: Consultar aquí / See here: https://telecos.upc.edu/ca/estudis/curs-actual/professorat-responsables-coordinadors/responsables-assignatura
Others: Consultar aquí / See here: https://telecos.upc.edu/ca/estudis/curs-actual/professorat-responsables-coordinadors/professorat-assignat-idoma

PRIOR SKILLS
Signal Processing, Communications II.

TEACHING METHODOLOGY
master classes

LEARNING OBJECTIVES OF THE SUBJECT
Advanced front-end design for communication, location and navigation systems.
Basic contents of the course are: Networking and updating of reference codes in the space and time domains, multi-channel architectures, acquisition and monitoring, super-resolution.

STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Hours large group</td>
<td>39,0</td>
<td>31.20</td>
</tr>
<tr>
<td>Self study</td>
<td>86,0</td>
<td>68.80</td>
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</tbody>
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Total learning time: 125 h

CONTENTS

1. Introduction (6 hours)
2. Beamforming (14 hours)

3. Detection and estimation of arrival angle (8 hours)

4. Adaptive beamforming (7 hours)

5. Tx-Rx Array processing (10 hours)

GRADING SYSTEM
- Final Examen: 60%
- Participation and class assistance: 40%

RESOURCES
Other resources: