Course guide
230724 - AI5G - Artificial Intelligence-Enabled 5G Radio Networks

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: 2023  ECTS Credits: 5.0  Languages: 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-idioma

PRIOR SKILLS

Fundamentals on radiocommunications

TEACHING METHODOLOGY

Use case-oriented

LEARNING OBJECTIVES OF THE SUBJECT

The main objective of this subject is to gain insight, understand the underlying technological foundations & market forces so that one can guess where 5G & AI will be in Gartner’s Technology Forecast 2025.

STUDY LOAD

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

ARTIFICIAL INTELLIGENCE-ENABLED 5G RADIO NETWORKS

Description:
1. 5G ecosystem
2. 5G system design
3. 5G New Radio
4. Radio network management in NG-RAN
5. Radio resource management in NG-RAN
6. Telemetry and data analytics

Specific objectives:
1. 5G ecosystem
2. 5G system design
3. 5G New Radio
4. Radio network management in NG-RAN
5. Radio resource management in NG-RAN
6. Telemetry and data analytics

Full-or-part-time: 39h
Theory classes: 39h

GRADING SYSTEM

Practical use case (80%)
Participation (20%)
No final exam

BIBLIOGRAPHY

Basic: