Course guides
230722 - PID - Photonic Integrated Devices for Telecom & Iot

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: 2019 ECTS Credits: 5.0 Languages: English

LECTURER
Coordinating lecturer: José Antonio Lázaro
Others: Sandra Bermejo

PRIOR SKILLS
Basic knowledge from 1st-2nd years of Bachelor in Physics, Electronics or Telecommunications.

TEACHING METHODOLOGY
Theoretical Introduction & Lab Practice - Design

LEARNING OBJECTIVES OF THE SUBJECT
Conceiving and Designing new Photonic Integrated Devices,
Introduction to fabrication in Clean Room and Lab characterization of Devices.

STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours large group</td>
<td>26,0</td>
<td>20.80</td>
</tr>
<tr>
<td>Hours small group</td>
<td>13,0</td>
<td>10.40</td>
</tr>
<tr>
<td>Self study</td>
<td>86,0</td>
<td>68.80</td>
</tr>
</tbody>
</table>

Total learning time: 125 h

CONTENTS

Unit 1

Description:
Overview of the current and future demands for photonic integrated devices

Full-or-part-time: 38h
Theory classes: 10h
Self study: 28h
Unit 2

Description:
Current and future technologies addressing the demands: Silicon Photonics, additional technologies to expand Silicon Photonics functionalities as: graphene, III-V materials, nano-materials, etc.

Full-or-part-time: 34h
Theory classes: 5h
Self study: 29h

Unit 3

Description:
Introduction to Clean Room Fabrication Technologies

Full-or-part-time: 34h
Theory classes: 5h
Self study: 29h

GRADING SYSTEM

Continuous assessment (60%) + Control examination (40%)

BIBLIOGRAPHY

Basic:

Complementary: