230722 - PID - Photonic Integrated Devices for Telecom & Iot

Coordinating unit: 230 - ETSETB - Barcelona School of Telecommunications Engineering
Teaching unit: 739 - TSC - Department of Signal Theory and Communications
Academic year: 2019
Degree: MASTER'S DEGREE IN TELECOMMUNICATIONS ENGINEERING (Syllabus 2013). (Teaching unit Optional)
MASTER'S DEGREE IN ADVANCED TELECOMMUNICATION TECHNOLOGIES (Syllabus 2019). (Teaching unit Optional)
ECTS credits: 5
Teaching languages: English

Teaching staff
Coordinator: José Antonio Lázaro
Others: Sandra Bermejo

Opening hours
Timetable: Tutoring sessions

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>Total learning time: 125h</th>
<th>Hours large group:</th>
<th>26h</th>
<th>20.80%</th>
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<tbody>
<tr>
<td></td>
<td>Hours small group:</td>
<td>13h</td>
<td>10.40%</td>
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<tr>
<td></td>
<td>Self study:</td>
<td>86h</td>
<td>68.80%</td>
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## Content

<table>
<thead>
<tr>
<th>Unit</th>
<th>Learning time: 38h</th>
<th>Description:</th>
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<tbody>
<tr>
<td>Unit 1</td>
<td>Theory classes: 10h</td>
<td>Overview of the current and future demands for photonic integrated devices</td>
<td>Self study : 28h</td>
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<td>Unit 2</td>
<td>Theory classes: 5h</td>
<td>Current and future technologies addressing the demands: Silicon Photonics, additional technologies to expand Silicon Photonics functionalities as: graphene, III-V materials, nano-materials, etc.</td>
<td>Self study : 29h</td>
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<td>Unit 3</td>
<td>Theory classes: 5h</td>
<td>Introduction to Clean Room Fabrication Technologies</td>
<td>Self study : 29h</td>
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## Qualification system

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

Basic:


Complementary: