13968 - APT - Advanced Photonic Technologies

Coordinating unit: 230 - ETSETB - Barcelona School of Telecommunications Engineering
Teaching unit: 748 - FIS - Department of Physics
Academic year: 2015
Degree: MASTER’S DEGREE IN PHOTONICS (Syllabus 2009). (Teaching unit Optional)
ERASMUS MUNDUS MASTER’S DEGREE IN PHOTONICS ENGINEERING, NANOPHOTONICS AND BIOPHOTONICS (Syllabus 2010). (Teaching unit Optional)
ECTS credits: 2,5
Teaching languages: English

Teaching staff

Coordinator: Adolfo Esteban-Martin
Others: Jordi Martorell, Valerio Pruneri

Teaching methodology


Learning objectives of the subject

The course is focused on several advanced applications of photonic technologies providing an overview in recent advances and state of the art of the art of devices. In particular it will try to bridge basic and fundamental science and industrial potentials. Additionally, students will visit ICFO labs to understand more deeply some of the concepts and to be in touch with some of the advanced photonics technologies under development.
### Content

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<tr>
<th>Topic</th>
<th>Degree competences to which the content contributes:</th>
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<td><strong>Frequency Conversion Processes</strong></td>
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<tr>
<td><strong>Frequency conversion devices</strong></td>
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<td><strong>Integrated electro-optic devices for the telecom and sensing industry</strong></td>
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<td><strong>Spontaneous parametric processes and entangled photons for quantum</strong></td>
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<td><strong>SHG in random media</strong></td>
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<td><strong>SHG in the whispering gallery modes of spherical micro-resonators. Applications to sensing</strong></td>
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### Qualification system

Attendance (60%) and multiple-choice exam (40%)

### Bibliography

**Basic:**
