230552 - BUSINE - Business and Patents in Photonics

Degree competences to which the subject contributes

Transversal:
1. EFFECTIVE USE OF INFORMATION RESOURCES: Managing the acquisition, structuring, analysis and display of data and information in the chosen area of specialisation and critically assessing the results obtained.
2. ENTREPRENEURSHIP AND INNOVATION: Being aware of and understanding how companies are organised and the principles that govern their activity, and being able to understand employment regulations and the relationships between planning, industrial and commercial strategies, quality and profit.
3. FOREIGN LANGUAGE: Achieving a level of spoken and written proficiency in a foreign language, preferably English, that meets the needs of the profession and the labour market.
4. SUSTAINABILITY AND SOCIAL COMMITMENT: Being aware of and understanding the complexity of the economic and social phenomena typical of a welfare society, and being able to relate social welfare to globalisation and sustainability and to use technique, technology, economics and sustainability in a balanced and compatible manner.
5. TEAMWORK: Being able to work in an interdisciplinary team, whether as a member or as a leader, with the aim of contributing to projects pragmatically and responsibly and making commitments in view of the resources that are available.

Learning objectives of the subject

The purpose of this course is to provide the students with the fundamental entrepreneurial and management skills required to successfully start and develop a technology based business. Special attention is paid to train engineers and scientists who are interested on the practical use of photonics technology in the development of photonic inventions and innovations, including their intellectual property right protection through patents.

The second purpose is to incite business awareness and to explore how scientific and technical concepts might be translated into real-life industrial applications.
Program will include lectures given by entrepreneurs that have the experience of starting-up a spin-off company. Participants will be also exposed to a highly interactive process of analysis and discussion, including case studies and small-group learning activities, such as the analysis of a business opportunity. Fundamental concepts on the effective writing and use of patents in business will be also discussed through several examples of photonic patents and company cases that have effectively used patents to leverage a successful technology based business.

BIBLIOGRAPHY:
· Melissa A. Schilling (2008)
· Harnessing Light. Optical Science and Engineering for the 21st Century
· MONA, Merging Optics and Nanotechnologies (2008). UE Report
· Guy Kawasaki (2004), "The Art of the Start", Penguin Group (USA)
· Guy Kawasaki (2011), "Enchantment", Penguin Group (USA)
· Examples of photonics patents at Google Patents, http://www.google.com/patents
· Examples of photonics patents at Esp@cenet, http://ep.espacenet.com/

Updated topical specific bibliography and teaching materials will be distributed through the ATENEA web platform.

**Study load**

<table>
<thead>
<tr>
<th>Total learning time: 125h</th>
<th>Hours large group: 37h 30m</th>
<th>30.00%</th>
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</thead>
<tbody>
<tr>
<td>Hours medium group: 0h</td>
<td>0.00%</td>
<td></td>
</tr>
<tr>
<td>Hours small group: 0h</td>
<td>0.00%</td>
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<tr>
<td>Guided activities: 3h 45m</td>
<td>3.00%</td>
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<tr>
<td>Self study: 83h 45m</td>
<td>67.00%</td>
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Content

1. Business in Photonics

Degree competences to which the content contributes:

Description:
- Entrepreneurship and Intrapreneurship.
- Organization of a technology based company.
- Strategic and Product Marketing
- Photonics Business and Photonics Clusters.
- Basic of Start-up Finance and Accounting.
- Gathering Resources. Venture Capital.

2. Patents in Photonics

Degree competences to which the content contributes:

Description:
- Strategy in the Patent and Technology Business Ecosystem.

Qualification system

- As an Individual:
  Weekly Assignments, participation in lectures, workshops and case studies (15%)
  Short final Exam (15%)

- As a Team:
  Course Project: Opportunity Analysis in Photonics (35%)
  Course Project: Patent Writing in Photonics (35%)

Bibliography