300314 - IGAT-OAT - Introducció a la Gestió d’Actius Tecnològics

Unitat responsable: 300 - EETAC - Escola d’Enginyeria de Telecomunicació i Aeroespacial de Castelldefels
Unitat que imparteix: 739 - TSC - Departament de Teoria del Senyal i Comunicacions
Curs: 2016
Titulació: GRAU EN ENGINYERIA DE SISTEMES DE TELECOMUNICACIÓ (Pla 2009). (Unitat docent Optativa)
GRAU EN ENGINYERIA DE SISTEMES AEROESPACIALS (Pla 2015). (Unitat docent Optativa)
GRAU EN ENGINYERIA D’AEROPORTS (Pla 2010). (Unitat docent Optativa)
GRAU EN ENGINYERIA D’AERONAVEGACIÓ (Pla 2010). (Unitat docent Optativa)
GRAU EN ENGINYERIA TELEMÀTICA (Pla 2009). (Unitat docent Optativa)
Crèdits ECTS: 3  Idiomes docència: Anglès

Responsable: Puente Baliarda, Carles

Capacitats prèvies
General Knowledge in Engineering and Physics

Requisits
General Knowledge in Engineering and Physics

Metodologies docents
Lectures, Homework and one Project

Objectius d’aprenentatge de l’assignatura
To introduce engineers and scientists into the management of technology assets, research and engineering teams. To understand the basic rules of the international patent system and to learn how to patent claims to secure and monetize the technology value of a corporation. To learn the basic technology and patent licensing models and the related business trade-offs. To develop the basic skills to plan and manage a technology and product roadmap, understanding the role of a technology department in a small or large corporation and its fit and interaction with other departments and government bodies within the organization. To review several strategies on how to introduce an innovation into the market, from the traditional product development cycle to a pure intellectual property licensing model.

Hores totals de dedicació de l’estudiantat

<table>
<thead>
<tr>
<th>Dedicació total: 75h</th>
<th>Hores grup gran: 0h 0.00%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hores grup mitjà: 33h 44.00%</td>
</tr>
<tr>
<td></td>
<td>Hores grup petit: 0h 0.00%</td>
</tr>
<tr>
<td></td>
<td>Hores activitats dirigides: 0h 0.00%</td>
</tr>
<tr>
<td></td>
<td>Hores aprenentatge autònòm: 42h 56.00%</td>
</tr>
<tr>
<td>Introduction to Technology Asset Management</td>
<td>Dedicació: 2h 24m</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td></td>
<td>Grup gran/Teòria: 1h</td>
</tr>
<tr>
<td></td>
<td>Aprenentatge autònom: 1h 24m</td>
</tr>
</tbody>
</table>

Descripció:
Part-I ? Background, Basic Knowledge and Skills

Technology Based Companies and a Knowledge Based Economy - What is a technology based company? The technology and the team as key assets of the corporation. Structure and organization of a technology based company. Examples of technology companies in the telecommunications/electronics industry (Qualcomm, ARM, Intel, Thomson, Rambus, Tessera, InterDigital, IBM, Immersion, WiLAN). Overview of Intellectual Property (IP) protection. The patent system worldwide: why patenting?

Project Oriented Management - The project as a business and engineering management tool. The project steering committee. The project leader and the project team. Project management tools: project definition, project planning, budget and resources planning and tracking, tracking tools (action item list, meeting minutes, reporting), closing meetings. Project planning examples with Microsoft Project.

Part-II ? Introduction to Patent Management


Licensing agreements - Dimensions of a licensing agreement: defining your IP product. Exclusivity. Rights to Sublicensing. Reservation of Rights. Term and termination. Royalties and other considerations. Prosecution and
Activitats vinculades:

Weekly Assignments (2h/week) - At the end of the week (6 out of 10 weeks), students will have to work on an assignment for the following week. Completing and delivering the exercises will be mandatory. Completion of work will be checked, and a few randomly selected assignments will be graded each week. Weekly assignments will be based on:

? Read and comment the patent of the week?
? Read selected material from reference books and papers.
? Quest on the content of the week sessions and material.
? Exercises based on the week sessions.

Course Project #1 (20h in 4 weeks)? Patent Drafting & Innovation: The paper airplane competition? Every student is invited to prepare a paper airplane in class and compete for the longest flight-time airplane. Then students are arranged in teams of two/three, and a time period for improving the plane and filing a provisional patent on the invention (including drawings and claims) is proposed. Entire prior-art will be defined by the professor. ?First to file? system is proposed. The winners are those who get to own an intellectual property right on the ?best flying airplane? (to be defined). The winning teams get 4 extra points in the final exam. (Teamwork)

Objectius específics:

1. To make engineers and scientists conscious on the potential value of a technology asset beyond its use in a traditional product development program.
2. To provide engineers and scientists with some basic tools and insights in the art of technology management.
3. To get engineers and scientists confident and familiar in managing patent information.
4. To get engineers and scientists understand the purpose of patenting and to provide them an insight on how to make an effective use of patents in a business context.
5. To get engineers and scientists familiar in the reading and wording of patent documents and interpreting its basic scope of protection.
6. To help engineers and scientists in protecting through patents broad technology concepts rather than narrow product lines.
7. To provide engineers and scientists with the tools to budget and monitor a patent portfolio and help in making a strategic plan for a patent asset development.
8. To provide engineers and scientists with the basic concepts on technology and patent licensing.
9. To provide engineers and scientists with a perspective on how to set up a technology and IP group inside a company whether a start-up or a large corporation.
10. To train engineers and scientists in the reading of technical documents (patents) in different fields where the student is not necessarily an expert.
### Content and Sessions

<table>
<thead>
<tr>
<th>Dedicació:</th>
<th>72h 36m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grup mitjà/Pràctiques:</td>
<td>32h</td>
</tr>
<tr>
<td>Aprenentatge autònom:</td>
<td>40h 36m</td>
</tr>
</tbody>
</table>

#### Descripció:

**Session #1.** Introduction to Technology Asset Management. Examples of technology corporation. What is a technology company? A technology and IP based business model. Overview of TAM course. Parts of TAM. Objectives of TAM. Who should take TAM? Why TAM: technology and IP related careers.

**Session #2.** An Intellectual Property (IP) based economy. Overview of IP protection: patents, trademarks, copyright rights, industrial designs, integrated circuit layouts. The patent system worldwide: national filings and rules, patent cooperation treaty. IP related information sources (websites, patent and trademark offices, associations).

**Session #3.** Organization of a Technology Company. Organization chart. The General Shareholders Meeting, Board of Directors and Executive Committee. Executives, roles, teams and functions in a Technology company. Matrix organization models: departments and business units. Professional roles in a Technology company. Examples. Project oriented management. Project definition. The project as an engineering tool. The project as business organization tool. The project steering committee. The project sponsor, the project leader and the project team.

**Session #4.** Project management tools: project definition, action item lists, meeting minutes, project reports. Project information system. Team building, team meetings: kick-off, follow-up and closing meetings. Project planning with Microsoft Project (I). Task definition and hierarchy. Task length and interdependence. Task margin and critical path. Project optimization. Example of Project Definition.

**Session #5.** Project planning with Microsoft Project (I). Task definition and hierarchy. Task length and interdependence. Task margin and critical path. Project optimization. Example.


**Session #9.** Introduction to Patent Engineering (I) - Structure of a patent document. Patent specification: background, summary of the invention, description of the preferred embodiments/best mode, list of figures, drawings and claims. Claim structure: limiting features and scope of protection.


**Session #11.** Introduction to Patent Engineering (III) - Introduction to Claim drafting - Independent claims in the EPO and in the US. Structure of a claim: preamble, limiting features and the two-part form. Basic and special types of claims (Markush, means plus function, product by process,..). Limiting words: ?comprising?, ?including? vs. ?consisting of? . Support according to EPO and USPTO rules. Independent and dependent claims: scope and validity. Claims as the skeleton of a patent specification. Ex...
Weekly Assignments (2h/week) - At the end of the week (6 out of 10 weeks), students will have to work on an assignment for the following week. Completing and delivering the exercises will be mandatory. Completion of work will be checked, and a few randomly selected assignments will be graded each week. Weekly assignments will be based on:

- Read and comment the patent of the week.
- Read selected material from reference books and papers.
- Quest on the content of the week sessions and material.
- Exercises based on the week sessions.

Course Project #1 (20h in 4 weeks)? Patent Drafting & Innovation: The paper airplane competition? Every student is invited to prepare a paper airplane in class and compete for the longest flight-time airplane. Then students are arranged in teams of two/three, and a time period for improving the plane and filing a provisional patent on the invention (including drawings and claims) is proposed. Entire prior-art will be defined by the professor. ?First to file? system is proposed. The winners are those who get to own an intellectual property right on the ?best flying airplane? (to be defined). The winning teams get 4 extra points in the final exam. (Teamwork)

Objectius específics:
1. To make engineers and scientists conscious on the potential value of a technology asset beyond its use in a traditional product development program.
2. To provide engineers and scientists with some basic tools and insights in the art of technology management.
3. To get engineers and scientists confident and familiar in managing patent information.
4. To get engineers and scientists understand the purpose of patenting and to provide them an insight on how to make an effective use of patents in a business context.
5. To get engineers and scientists familiar in the reading and wording of patent documents and interpreting its basic scope of protection.
6. To help engineers and scientists in protecting through patents broad technology concepts rather than narrow product lines.
7. To provide engineers and scientists with the tools to budget and monitor a patent portfolio and help in making a strategic plan for a patent asset development.
8. To provide engineers and scientists with the basic concepts on technology and patent licensing.
9. To provide engineers and scientists with a perspective on how to set up a technology and IP group inside a company whether a start-up or a large corporation.
10. To train engineers and scientists in the reading of technical documents (patents) in different fields where the student is not necessarily an expert.

Sistema de qualificació

- 40% Patent Drafting & Innovation (paper airplane project)
  - Winners (teams with exclusion rights) get 4 extra bonus points in final exam.
  - Best airplane builders get 2 extra bonus points in final exam.
  - Delivering all assignments and projects and obtaining at least 4/10 points in the final exam is a condition for the bonus to accrue.
- 30% Weekly Assignments
- 30% Final Exam
300314 - IGAT-OAT - Introducció a la Gestió d'Actius Tecnològics

Bibliografia

Altres recursos: