

## 230681 - IR - Introduction to Research

Coordinating unit:	230 - ETSETB - Barcelona School of Telecommunications Engineering
Teaching unit:	710 - EEL - Department of Electronic Engineering
Academic year:	2017
Degree:	MASTER'S DEGREE IN ELECTRONIC ENGINEERING (Syllabus 2013). (Teaching unit Optional)
ECTS credits:	15
Teaching languages:	English

### Teaching staff

Coordinator: Isidro Martín García

### Requirements

This subject is oriented to students that have demonstrated the highest levels in their academic development. For this reason, a minimum performance of the student along his studies in the master will be required. In particular, this subject can be enrolled only by students whose ratio of passed subjects respect to enrolled ones is higher than 90 %. Typically, a maximum of 5 students per semester will be admitted in the subject. If there are more applications, students will be prioritized by their average qualifications in the Master. Additionally, a description of the project must be sent to the Master's Academic Coordinator. The Academic Commission of MEE must approve the student enrolment in this subject.

### 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.

### Teaching methodology

- Application classes
- Laboratory practical work
- Group work (distance)
- Individual work (distance)
- Exercises
- Oral presentations

### Learning objectives of the subject

Learning objectives of the subject:

The objective of this course is to introduce the student into the scientific research methodologies. In this regard, and under the supervision of a research advisor, the student will carry out a research project in the area of Electronic Engineering.

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If the advisor is not a UPC member, a co-advisor belonging to UPC academic staff must be proposed. Both the advisor and co-advisor must hold a PhD degree.

Learning results of the subject:

- To provide the ability of analysing the state of the art of a research subject.
- To provide the ability of formulating hypothesis, propose models and/or experimentally validate any of those.
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Planning of Activities:

- The student must sign up within the allocated normal period for enrolment of the MEE.
- At the moment of enrolment the student must provide a form with the acceptance of the advisor (and co-advisor if this is the case) specifying the title and a brief description of the contents of the work to be performed. The form must be endorsed by the Academic Commission of the MEE. If the advisor is not a UPC member, a co-advisor belonging to UPC academic staff must be proposed. Both the advisor and co-advisor must hold a PhD degree.
- An evaluating committee will be assigned to the student to present the research results. The evaluation must be performed before the final deadline for the submission of grades within the same semester.

### Content

<p>It will depend on the specific contents of the proposal</p>	<p>Learning time: 0h Laboratory classes: 0h Guided activities: 0h Self study : 0h</p>
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### Qualification system

- The evaluation committee will be composed of three professors belonging to a PhD program at UPC.
- The student will prepare a 6-10 pages report in the form of a journal research paper, and will make it available to the evaluating committee at least one week before the presentation.
- The student will make a short presentation (20 minutes maximum) of the work to the evaluating committee which will then evaluate the student.
- Explicit mention of the original research results obtained by the student must be made both in the report and in the presentation to the evaluating commission. Failure to do so may result in a negative evaluation of the course.

### Bibliography