1. Descriptive information on the subject

- **Name of the subject:** Introduction to the ICTs
- **Academic year:** 2011 - 2012 **Year:** 1st **Term:** 1st
- **Degree/Course:** Bachelor's degree in Computer Sciences
  Bachelor's degree in Audiovisual Systems Engineering
  Bachelor's degree in Telematics Engineering
- **Subject code:** 21591
- **Number of credits (ECTS):** 6 **Total number of hours committed:** 150
- **Teaching language(s):** Catalan, Spanish
- **Teaching staff:** Michail Batikas, Jordi Bosch, Davinia Hernández-Leo[1] (coordinator), Javier Melero, Verónica Moreno, Miquel Oliver, Enric Peig, Gemma Piella, Ramon Sagarra, Johan Zuidweg

2. Presentation of the subject

This module ("Introduction to the ICTs") is common to all three degrees of the Polytechnic School at the UPF (Bachelor's degree in Computer Sciences, Bachelor's degree in Audiovisual Systems Engineering and Bachelor's degree in Telematics Engineering). As its name indicates, this course is an introductory one and is therefore taught during the first term of the above mentioned degrees.

It has two main themes. On the one hand, the *Introduction to University* presents the general characteristics of the University, the School and its syllabus as well as its study and consultation strategies, which are adapted to the European Higher Education Area (EHEA) and the degrees in Engineering and ICT. An equivalent course is taught in all UPF degrees.

On the other hand, the *Introduction to the field, business and marketplace of the ICTs* introduces some of the basic aspects of the ICTs from the point of view of a professional ICT engineer including the study of the ICT field and marketplace, the business organisation and the tendencies of socioeconomic sector.

In short, this module offers a global vision of the university, of its resources, the chosen studies and the professional world of the ICTs, in a way that enables students to understand and face their new stage of formation so that they can become familiar with the tools needed in order to complete it successfully.

[1] Room 408, edifici Tànger at the Campus de la Comunicació-Poblenou

3. Competences to be obtained in the subject

Transferable skills	Specific competences
Instrumental 1. Ability to adapt to the new formative situation both at university and at the School 2. Ability to recognise and identify diversity and multiculturalism. *Interpersonal* 3. Ability to work in groups *Systemic* 4. Ability to organise and plan 5. Ability to communicate, orally and in writing, both with specialised and non specialised public 6. Problem resolution	A. Basic knowledge of ITC engineering as a profession B. Knowledge of the general economic and business principles as well as the ICTs impact on society. C. Ability to develop and work on projects in their knowledge field. D. Ability to work with specialised documents of their knowledge field such as specifications, regulations and mandatory rules. E. Ability to use software tools to look for bibliography or pieces or information, which are related to the ICT.

Since it is an introductory course, only a basic level of proficiency will be required for some of the competences above. These competences will be further improved in higher grade subjects.

4. Contents

This course is organized into two sections that correspond to the two main themes of the course: 1) Introduction to the University and 2) Introduction to the field, industry and ICT market. The content taught and the teachers are specified in the following section[2,3]:

1. Introduction to the University

B1-1 (DHL, JM, VM, CRAI, Infor)

Introduction to the course and to the main resources of the field

Presentation of the teaching plan of the course and of the environment where the course will take place: the School and the Campus de la Comunicació-Poblenou.

E-learning platforms, email and the configuration of the web resources

What is the Campus Global and how do we get access to it? What is the Aula Global? How do we carry out academic processes and procedures? How do we get access to the structure and the main points of a course? The Novel network and the access to the email accounts. How to use the University printers and photocopiers. The available network resources: disk space and of to access it from outside the UPF network.

PCs, software and other informatics and audiovisual equipment

Software available on computer labs. *La Factoria*: available equipment and software. Laptops on loan: available software and terms of use. The Wifi and Eduroam. Antivirus software. How to create a PDF document.

How to find the materials and information resources needed for your courses. Library vs. Google. The library catalogue: contents and basic strategies of information search. How to find the recommended bibliography?: The Aula Global and the catalogue. Document loan.

B1-2. (MO)

General characteristics of the university

What is the university? History and origins of the Universitat Pompeu Fabra. Governing bodies. Structure and academic positions: Rector, Vice rector, Dean, Head of School, Department director. University Community. Social Council and the Ombudsman.

B1-3. (EP)

Structure and university syllabus

Academic regulations

What is the European Higher Education Area (EHEA)? Syllabus structure within the frame of the EHEA. Basic subjects, compulsory subjects and optional subjects. Free choice credits. Mobility programmes both on *inter* and *intra-university* basis. The Seneca and Erasmus programmes as well as the existing agreements with non European universities. Traineeship (Practicum) and stays at external institutions. The end of Degree Dissertation and the Action Plan for Multilinguism / Language Teaching Programme (*Programa d'Ensenyament d'Idiomes* – PEI).

Exams and assessment: number of examination sittings, terms and claims. The concepts of "academic progression" and "academic permanence" and their regulation. Characteristics of the fifth examination sitting. How to forgo an examination. Part time dedication rules.

Course structure according to the syllabus. General skills and compulsory courses. Specialisations available and national and international mobility. Exchange programmes with other universities. Traineeship (Practicum) characteristics. Assessment.

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[2] The order in which the contents are shown doesn't totally correspond with the time evolution of this course. See section 8 "Activities Planning"

[3] Michail Batikas (MB), Jordi Bosch (JB), Davinia Hernández-Leo (DHL), Javier Melero (JM), Verónica Moreno (VM), Miquel Oliver (MO), Enric Peig (EP), Mar Pérez (MP), Gemma Piella (GP), Ramon Sagarra (RS), Johan Zuidweg (JZ), Personal del servei de biblioteca (CRAI), informàtica (Inf) i del SACU (SACU).

B1-4 (MO, SACU) Ethical code. Services and activities to the University Community

Ethical code at the UPF. Presentation of the SACU (Servei d'Atenció a la Comunitat Universitària – Attention Service to the University Community). Presentation of other services available (PEI, OIL). Solidarity engagement, social, cultural and sports activities: possibility of academic recognition. Taking part in the student life: possibilities at the UPF, Student Council, kinds of associations, grants for student activities. Student life at the UPF.

B1-5. (DHL, VM) Teaching System at the EHEA

Different teaching systems and the EHEA. Lectures and Seminars. Seminar activities. Continuous assessment and final exam. Importance of the consistent dedication and work towards the final assessment. Teaching systems' application to the Degrees on the ICTs. Skills acquisition through competences.

B1-6. (DHL, VM, JM) The Syllabus

The syllabus as a guide document or roadmap to teach. The syllabus as a tool that lets the students know about the working process and that that helps them organise and plan their study plan and attendance to lessons.

B1-7. (DHL, JM, VM) The EHEA Teaching activities

A series of activities carried out in small groups will let the students know about possible career prospects as ICT Engineers and to get used to how Seminar sessions work.

B1-8. (DHL, JM, VM) Participating in the University

Reflection and debate about students' participation in the University in a broad sense, from representational aspects to participating in sport, cultural and solidarity activities.

Developing general or transversal competences

Reflection and debate about the role of developing transversal competences. Introduction to the elaboration of the Portfolio.

B1-9 (DHL, VM) How to work in groups

The importance of teamwork in engineering. Difference between cooperation and collaboration. Basic elements involved in an effective teamwork and tools to solve problems that may arise (organising a, solving conflicts and problems, etc.).

B1-10 (VM) Oral Communication

Oral communication techniques, presenting a topic in front of specialised and non specialised public.

B1-11 (VM) Study Strategies

Study Techniques (or learning strategies), which are appropriate to university studies. Knowing and analysing the own way of studying in order to find solutions to address the difficulties that arise in the teaching/learning process.

B1-12. (CRAI) Preparing an academic paper(1)

How to draw up the paper plan. Contextualization of the subject: search sources of general information. Justification of the subject choice. Parts of a paper: introduction, body, conclusions and bibliography. Citation of bibliography: citation styles and bibliography managers.

Finding the needed information: magazines, books, audiovisual material. Finding articles and current news: the "metasearcher" and the main thematic databases. Finding resources on the Internet: the subject guides and the main search engines. How to evaluate the quality of the chosen resources. Copyright: how to avoid copying and plagiarism.

B1-13. (CRAI, DHL, JZ, EP, GP) Preparing an academic paper (2)

Tutoring sessions about the academic paper of the second part of the course.

B1-14. (VM, JM) Problem solution techniques

Essential steps to solve a problem: understanding it, outlining a plan to solve it, putting the plan into practice, checking the results. Troubleshooting techniques.

2. Introduction to the field, the business and the market of the ICTs

B2-1. (DHL) Introduction to discussion and work on the core sector of the ICTs
Introduction to the second bloc. Special emphasis will be put on the explanation of the procedure to be followed during the three debates (see D-BA and D-P2P) and the carrying out of a paper on an ICT sector (see B2-TT, B2-PT).

B2-2. (MO, JB) Socio-professional profile of an ICT engineer
Career prospects of the ICT engineering, the FOBSIC study, role of professional associations.

B2-3 (RS, JB) Agents and structure of the ICT sector
Overview of the telecommunications market, in which the main national and private agents and their role in the market configuration are identified. Structuring and running of the ICT companies.

B2-4. (JZ) Market and services organization
General information about the ICT sector. Main ICT services and their actual situation and evolution in the Spanish, European and Worldwide ICT. Identification of the existing trends in the evolution of this market.

B2-5. (RS, MO) ICT Market and Services: Internet and Mobile services
Situation and tendency in the field of the Internet and mobile services

B2-6 (RS, JB) ICT Market and Services: Fixed and Broadcasting Services
Situation and tendency in the field of the fixed and broadcasting services.

B2-7 (DHL, KB) Finding and selecting pieces of information
Criteria and sources to find and select information about the ICT marked

B2-P1 (MO, RS) Structure of the ICT sector
Laboratory practise with PCs about the structure of the ICT sector. Notions about the way to find and select information from specialised sources included.

B2-P2 (GP, RS, JB) Market and Services
Laboratory practice with PCs about the ICT Market and Services.

D-BA (DHL, EP, MB) Debate on the price of broadband connections

D-P2P (GP, RS, JB) Debate on the use of P2P applications

DF (DHL, GP, EP, MB, JB, RS) Feedback session on the first debate

B2-TT (DHL, JZ, EP, GP) Tutoring on the ICT sector paper

B2-PT (DHL, JZ, EP, GP) Presentation of the papers on the ICT sector

B-Final (DHL) Course conclusions
End of course session, review/overview of the course topics and general conclusion. Comments on the portfolio activity and on the theory test of the second bloc.

5. Evaluation of the level of competences accomplishment

Competencias evaluadas (ver sección 3)	Actividades de evaluación (ver sección 8)	Criterios de evaluación	Mínimo requerido para aprobar la asignatura	Peso en la nota final
1, 4, 6	TEST1 on the basic aspects on information and computer science	**0-10** points depending on the correct answers and the criteria stated in the tests and tasks. The teacher's perception on the student's work on class or during the lab sessions may be taken into account.	In other to pass this course, the student must have completed all the exercises with an average grade of more than 5. Activities should be delivered according to the deadlines	25%
	TEST1 on the university, the degree structure, the academic regulations i and the ESUP degrees curricula			
	TASK1 on the syllabus, the organisation and the students planning			
	TASK2 on the EHEA methodologies, competences, and competence profiles for ICT engineers			
	TASK3 on study strategies			
	PROBLEMS. Application of the troubleshooting strategies			
A, D, E	ASSIGMENT1 "Structure of the ICT sector"	**0-10** points depending on the correct answers and the criteria stated in the tests and tasks. The teacher's perception on the student's work on class or during the lab sessions may be taken into account.	In other to pass this course, the student must have: - handed all the exercises in time - obtained an average grade of more than 5 in the assignments and - obtained an average grade of more than 5 in the assignments	25%
	ASSIGMENT2 "Market and Services			
	TEST3 on the B2 theory (from B2-2 to B2-4)	**0-10** points according to what is indicated on the test's statement		
	TEST4 on the B2 theory (from B2-5 to B2-6)	**0-10** points according to what is indicated on the test's statement		
B, C, D, E **2, 3, 4, 5**	REPORT on an ICT sector	**0-10** points according the criteria stated in the **guide to write a report** and to the oral presentation	To pass the course, the student must have handed all the exercices on time, obtained an average grade of more than 5 por the report, and participated in person at least in one of the two debates	40%
	DEBATE-P2P. Debate on the use of P2P applications	**0-10** points according the criteria stated in the **guide to prepare a debate**		
	DEBATE-BA. Debate on the price of broadband connection			
Todas	PORTFOLIO. Validation and critical reflection on the learning progress achieved during this course (see "Methodology – Section 7")	**FAIL** (the student fails the course) **PASS GRADE-Adequate** (0,5 point added to the cumulative grade) **PASS GRADE-Excellent** (one point added to the cumulative grade)	In other to pass this course, the student must hand in the self-assessment on time and obtain at least a PASS GRADE-adequate.	10%

The student assumes that it is hiss/her responsibility to keep backup copies of the different activities and assessed work.

Under no circumstances will the breach of ethical aspects related to copying, plagiarism or wrong citation be tolerated.

In order to pass this course, the student must have obtained a **final mark of 5/10 or more**.

The students who do not obtain a passing grade (either because they have not reached the minimal grade required in some of the parts of the course or because they have obtained a final grade which is not equal or greater than 5/10) have the possibility to re-sit the exam the September session through a process of tutoring sessions, on which there must an agreement with the teaching staff by the December exam critique, which takes place during the ordinary exam session.

6. Bibliography and didactic resource

The learning resources available and the basic readings for the subjects will be stated in each session.

7. Methodology

This course's methodology is based on a combination of lectures, where teachers introduce the basic theory needed, and the medium and small group sessions where students work individually. The work inside and outside the class will be organised as follows:

- **Lectures**: Presentation of the main information and theory-related aspects of the course. Students are expected to participate in lectures by asking questions and making comments.
- **Seminar Sessions**: These are small groups sessions for the students to work individually or in small groups, depending on the activities planned by the teaching staff. These activities are diverse and aim at the fact that students actively practise, revise and discuss the aspects introduced during the lectures, as they are normally part of the continuous assessment. Students are asked to do the previous work needed to prepare the seminar sessions. The work started during seminar sessions may be finished after class.
- **Practical Sessions with PC's:** Students work on the computer room under the supervision of the teacher. These sessions help the students consolidate what they learnt during the lectures and through the individual work. These sessions are organised in a way so that students work in groups of 2 people.
- **Reports on an ICT sector:** It is a group project (initially 3-5/6 students, although this will be confirmed later on during the course) that must be carried on outside the class and whose aim is to have a deeper knowledge on a specific point about the ICT market based on the aspects introduced during the course sessions. Each group will present the work done in a specific seminar. Each Project will be supervised by a teacher, who will act as a tutor. A more specific description about the methodology to be followed can be found on the **Guide to write a report"**.

- **Academic debates:** These are on class sessions that the students need to have prepared (in groups of 3-5/6 people). They will play the role of an institution in order to discuss a controversial question on the ICTs. A more specific description about the methodology to be followed can be found on the **Guide to prepare a debate"**.
- **Portfolio**: By the end of the course, students are expected to reflect critically on their results for the different blocks and activities of the subject. They will also be asked to compare and analyse the changes on their learning process during this period of time and to describe their achievements for each of the competences of the subject. Students are advised to take notes regularly so that they can easily put these comments on the final portfolio document.

The student groups both for the academic debates and the paper on an ICT section will be constituted as follows. They will have the opportunity to form provisional groups in which all members belong to the same seminar group and to volunteer for some of the roles considered in the debates. The teaching staff will be responsible for the final constitution of the groups and to assure that every student has a different role in each debate. (For example, if a student plays the role of a judge during the first debate, s/he will have to be speaker in one of the roles the next time).

Introduction to the ICTS has 6 ECTS credits corresponding to 150 hours of student work, of which 50 are in class sessions. These 50 hours are divided into Lectures (28 hours), medium-group sessions (8 hours) and seminar sessions with a small group of students (14 hours). The distribution of hours of content blocks is detailed in the following table.

Groups of contents and preparation for test 3	Hours in the classroom			Hours out of the classroom	
	Big group	Medium group	Small group		
Theory revision, tests and exercises (B-1)	10	4	5	16+4	
B-2 theory revision,	17	-	-	20	
Practical exercises	-	4	-	4	
Debates	-	-	5	22	
Project	-	-	4	26	
Portfolio	1	-	-	8	
Total	28	8	14	100	# of hours in total (ECTS*25)

8. Activities planning

- Classroom training planning

	XXXX XX:XX-XX:XX	XXXXX XX:XX-XX:XX	XXXXX XX:XX-XX:XX
X week			

- List of activities

Activity	Starting date	Deadline	Date of results