









**Strategic Competences of the UdL** according to the “Plan Director de la Docència” approved by the Government Council of UdL on July 10th, 2007.

- CT1.** Acquire a suitable understanding of written, oral Catalan and Spanish.
- CT2.** Mastering a foreign language, especially English.
- CT3.** Training Experience in the use of the new technologies and the information and communication technologies.
- CT4.** Acquire basic knowledge of entrepreneurship and professional environments.
- CT5.** Acquire knowledge in scientific thinking.

**Cross-disciplinary competences. EPS:** approved by the Plenary Commission of the Degrees of Industrial Engineering, Computer Engineering and Building Engineering, gathered on June 16th, 2008: positive verification by Secretaria General del Consejo de Coordinación Universitaria, 1st April 2009..

- EPS1.** Capacity to solve problems and prepare and defence arguments inside the area of studies.
- EPS2.** Capacity to gather and interpret relevant data, within the area of study, to judge and think about relevant subjects of social, scientific and ethical nature.
- EPS3.** Capacity to convey information, ideas, problems and solutions to both a specialized and no specialized public.
- EPS4.** To have the skills required to undertake new studies or improve the training with self-direction. **FDE5.** Capacity for working and learning autonomously, and for interacting with other people by means of cooperation and collaboration.
- EPS5.** Capacity of abstraction and of critical, logical and mathematical thinking. **FDE3.** Capacity for critical judgement and self-appraisal.
- EPS6.** Capacity of analysis and synthesis. **FDE1.** Capacity for analysis and synthesis.
- EPS7.** Capacity to work in situations with a lack of information and/or under pressure.
- EPS8.** Capacity of planning and organizing the personal work. **FDE2.** Capacity for organization and planning.
- EPS9.** Capacity for unidisciplinary and multidisciplinary teamwork. **FDE4.** Capacity for teamwork and leadership.
- EPS10.** Capacity to take part in the structure of a company.
- EPS11.** Capacity to understand the needs of the user expressed in a no technical language.
- EPS12.** To be motivated for the quality and steady improvement. **FDE6.** Capacity for acting with rigor, making a personal commitment and upholding quality standards.
- EPS13.** Capacity to consider the socioeconomic context as well as the sustainability criteria in engineering solutions.

**Specific competences** that the students have to acquire in the degree in Computer Engineering set in the Royal decree 1393/2007, of October 29th

**Module of basic training. Specific competences.**

- GII-FB1.** Capacity to solve mathematical problems arisen in the engineering field. Aptitude to apply knowledge on: linear algebra; differential and integral calculus; numerical methods; algorithmic, numerical; statistics and optimisation.
- GII-FB2.** Understanding and commanding basic concepts of fields and waves and electromagnetism, theory of electrical circuits, electronic circuits, physical principle of the semiconductors and logical families, electronic and photonic devices, and his application for the resolution of problems in the engineering.
- GII-FB3.** Capacity to understand and master the basic concepts of discreet mathematics, logical, algorithmic and computational complexity, and its application to solve engineering problems.
- GII-FB4.** Basic knowledge of the use and programming of computers, operating systems, databases and computer programs with applications in engineering.
- GII-FB5.** Knowledge of the structure, organisation, operation and interconnection of the computer systems, the basics of programming, and its application to solve engineering problems.
- GII-FB6.** Suitable knowledge of the concept of company, institutional and legal framework of the company. Business organisation and management.

**Module of common training in the computer branch. Specific competences.**

- GII-CRI1.** Capacity to design, develop, select and evaluate applications and computer systems, ensuring its reliability, security and quality, according to ethical principles and to the legislation.
- GII-CRI2.** Capacity to plan, conceive, deploy and direct projects, services and computer systems in all the fields, leading his set up and his continuous improvement and evaluation his economic and social impact.
- GII-CRI3.** Capacity to understand the importance of negotiations, the efficient work, the leadership and the skills of communication in all the software development environments.
- GII-CRI4.** Capacity to write the technical conditions of a computer installation that fulfil the legal standards.

**GII-CRI15.** Knowledge, manage and maintain systems, services and computer applications.

**GII-CRI16.** Knowledge and application of the basic algorithmic procedures of the computer technologies to design problem solving, analysing the suitability and complexity of the algorithms proposed.

**GII-CRI17.** Knowledge, design and efficient use of the types and data structure more suitable for solving a problem.

**GII-CRI18.** Capacity to analyse, design, build and keep safety and efficiency in applications, choosing the paradigm and the most suitable programming languages.

**GII-CRI19.** Capacity to know, comprise and evaluate the structure and architecture of computers, as well as the basic components that conform them.

**GII-CRI10.** Knowledge of the characteristics, functionalities and structures of the operating systems and design and implement applications based in their services.

**GII-CRI11.** Knowledge and application of the characteristics, functionalities and structure of the Distributed Systems, the Networks of Computers and Internet and design and implement applications based in them.

**GII-CRI12.** Knowledge and application of the characteristics, functionalities and structure of the databases, that allow their suitable use, and the design and the analysis and implementation of applications based in them.

**GII-CRI13.** Knowledge and application of the necessary tools for the storage, processing and access to the Systems of information, including those based in web.

**GII-CRI14.** Knowledge and application of the basic principles and basic techniques of the parallel, concurrent, distributed and of real time programming, .

**GII-CRI15.** Knowledge and application of the basic principles and basic techniques of the intelligent systems and his practical application.

**GII-CRI16.** Knowledge and application of the principles, methodologies and life cycle of the software engineering.

**GII-CRI17.** Capacity to design and evaluate person-computer interfaces that guarantee the accessibility and usability of systems, services and computer applications.

**GII-CRI18.** Knowledge of the rules and the regulations of computing in national, European and international level.

**Degree in Business Administration and Management. Specific competences** that the students have to acquire in the degree in Business administration and management, positively verified by the Secretaría General del Consejo de Coordinación Universitaria, 1<sup>st</sup> april 2009.

**ADE1.** To set up and manage a company based on and in response to the changes that occur in the context in which it operates.

**ADE2.** To perform the aforementioned functions in the different functional areas of a company or institution.

**ADE3.** To draw up, interpret and audit financial reports for organizations and individuals, and to give advice about them.

**ADE4.** To apply instrumental techniques to the analysis and resolution of business problems, and to the decision-making process.

**ADE5.** To identify and interpret economic, environmental, political, sociological and technological factors within local, national and international contexts, and their effects on organizations.

**ADE6.** To know the moral and ethical principles that apply to businesses, as well as the legal and social responsibilities arising from personal conduct and business practices.

**ADE7.** To intervene in operations inherent to businesses and financial markets.

**Module of training of specific technology: Systems of Information. Specific competences** that the students have to acquire in the degree in Computer Engineering set in the Royal decree 1393/2007, of October 29th.

**GII-SI1.** Capacity to integrate information and communication technology solutions and business to satisfy the needs of information of the organisations, allowing them to reach their aims effectively and efficiently, giving them a competitive advantage.

**GII-SI2.** Capacity to determine the requirements of the information and communication systems of an organisation taking into account security issues and fulfilment of the rules and regulations.

**GII-SI3.** Capacity to actively participate in the specification, design, implementation and maintenance of information and communication systems.

**GII-SI4.** Capacity to comprise and apply the principles and practices of the organisations, so that they can exert like a link between the technique and management communities of an organisation and participate actively in the users training.

**GII-SI5.** Capacity to understand and apply the principles of risks evaluation and apply them properly in the preparation and execution of plans of performance.

**GII-SI6.** Capacity to understand and apply the principles and the techniques of quality management and of technological innovation in organisations.