MASTER DEGREE IN INFORMATICS ENGINEERING

The syllabus of the Master Degree in Informatics Engineering is set up in the Resolution of June 8th, 2009 of the General Secretary of Universities that establishes the recommendations for the official degrees in the field of the Informatics Engineering.

Competences	1st course													2nd course														
	Management Module		Information Technologies Module							Information Technologies Specialization Module				Information Technologies Specialization Module							Optional Subjects Module							
										BD	VG	ERP		BD		VG		ERP			Informatics Technology							
	IT Project Management	Technological Business Management and Entrepreneurship	ICT Project: Development and Implementation	Computer Graphics and Multimedia	Intelligent Systems	Embedded and Ubiquitous Systems	High Performance Computing	ICT Project: Communication Services and Security	Evaluation Techniques and Usability Testing	Massive Data processing	Video Game Programming Techniques and Fundamentals	Business Vision in ERP Systems	Mobility	Data Mining	Big Data Project	Mobile Game Developing	Video Game Development for High Performance Platforms	Management and Functional Areas in ERP Systems	Business Process Integration with ERP Systems	Mobility	Data Mining	Mobile Game Developing	Management and Functional Areas in ERP Systems	Trending Topics in Computer Science	Work Placement in a Company	Research	Mobility	Master Thesis
CG1																												
CG2																												
CG3																												
CG4																												
CG5																												
CG6																												
CG7																												
CG8																												
CG9																												
CG10																												
UdL1																												
UdL2																												
UdL3																												
UdL4																												
EPS1																												
EPS2																												
EPS3																												
EPS4																												
EPS5																												
CB1																												

CB2																												
CB3																												
CB4																												
CB5																												
CE1																												
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CE3																												
CE4																												
CE5																												
CE6																												
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CE11																												
CE12																												
CE13																												
CE14																												
CE15																												
CE16																												

BD	**BIG DATA ANALYTICS**
VG	**VIDEO GAME DEVELOPMENT**
ERP	**ENTERPRISE RESOURCE PLANNING SYSTEMS**

General Competences that the students have to acquire according to Resolution June 8th, 2009, of the General Office of Universities.

CG1. Capacity to project, calculate and design products, processes and installations in all fields of Computer Engineering.

CG2. Capacity to manage computing systems works and installations, in compliance with current regulations, and assure quality service.

CG3. Capacity to manage, plan and supervise multidisciplinary teams.

CG4. Capacity to mathematically model, calculate and simulate in technological companies and engineering centres, particularly with regard to research, development and innovation tasks in all fields related to computer engineering.

CG5. Capacity to elaborate, strategically plan, manage, coordinate and technically and economically manage projects in all fields of computer engineering following quality and environmental criteria.

CG6. Capacity to work as general directors, technical directors and research, development and innovation project directors in computer engineering companies and technology centres.

CG7. Capacity to implement and manage computer equipment manufacturing processes, guaranteeing personal and material safety, the final quality of products and their homologation.

CG8. Capacity to apply the knowledge acquired for solving problems in new and unfamiliar situations within broader and more multidisciplinary contexts, and to be capable of integrating this knowledge.

CG9. Capacity to understand and apply ethical responsibility, legislation and professional ethics in computer engineering activities.

CG10. Capacities to apply economic principles, manage human resources and projects, and comply with computer legislation, regulation and normalization.

Strategic Competences of UdL according to the "Plan Director de la Docencia" approved by the Council of Government of UdL on July 10th, 2007.

UdL1. Appropriate skills in oral and written language.
UdL2. Command of a foreign language.
UdL3. Mastering ICT's.
UdL4. To respect the fundamental rights of equality between men and women, the promotion of the Human Rights and the principles of a culture of peace and democratic values.

Cross-disciplinary Competences approved by the Plenary Commission of the Degrees of Industrial Engineering, Computer Engineering and Building Engineering, gathered on June 16th, 2008

EPS1. Capacity of planning and organizing the personal work.
EPS2. Capacity to consider the socioeconomic context as well as the sustainability criteria in engineering solutions.
EPS3. Capacity to convey information, ideas, problems and solutions to both a specialized and no specialized public.
EPS4. Capacity to conceive, design and implement projects and/or contribute to new solutions, using engineering tools.
EPS5. To be motivated for the quality and steady improvement.

Basic Competences that the students have to acquire according to the real ordinance 861/2010, Annex I section 3.3.

CB1. Possess knowledge and understanding that provide a basis or opportunity for originality in developing and / or applying ideas, often in a research context.
CB2. That the students can apply their knowledge and their ability to solve problems in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study.
CB3. Students are able to integrate knowledge and handle complexity, and formulate judgments based on information that was incomplete or limited, include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgments.
CB4. Students can communicate their conclusions -and the knowledge and rationale underpinning these, to specialist and non-specialist audiences clearly and unambiguously.
CB5. Students should possess learning skills that enable them to continue studying in a way that will be largely self-directed or autonomous.

Specific competences that the students have to acquire according to Resolution June 8th, 2009, of the General Office of Universities

CE1. Capacity for the integration of technologies, applications and computer engineering systems, in general and in wider and multidisciplinary contexts.
CE2. Capacity for the strategic planning, preparation, direction, coordination, and technical and economic management in the fields of the computer engineering in: systems, applications, services, networks, infrastructures or computer installations and centres or factories of software development, complying with the suitable fulfilment of the quality criteria and multidisciplinary working environments.
CE3. Capacity for the direction of research, development and innovation projects, in companies and technological centres, with guarantee of security for people and resources, the final quality of the products and his certification.
CE4. Capacity to model, design, define the architecture, implant, manage, operate, administer and keep applications, networks, systems, services and computer contents.
CE5. Capacity to understand and know how to apply the operation and organisation of the Internet, the technologies and new generation network protocols, the models of components, middleware software and services.
CE6. Capacity to ensure, manage, audit and certify the quality of the developments, processes, systems, services, applications and computer products.
CE7. Capacity to design, develop, manage and evaluate mechanisms to certificate and guarantee the security in the treatment and access to the information in a processing or distributed local system.
CE8. Capacity to analyse the information needs that arise and to carry out all the stages of the process of construction of an information system.
CE9. Capacity to design and evaluate operating systems and servers, and applications and systems based on distributed computing.
CE10. Capacity to understand and apply advanced knowledge in high-performance computing and numerical or computational methods to problems of engineering.
CE11. Capacity to design and develop systems, applications and computer services in embedded and ubiquitous systems.

CE12. Capacity to apply mathematical, statistical and artificial intelligence methods, design and develop applications, services, intelligent systems and systems based on knowledge.

CE13. Capacity to use and develop methodologies, methods, techniques, specific use programmes, rules and graphic computation standards.

CE14. Capacities to conceptualise, design, develop and evaluate the person-computer interaction of products, systems, applications and computer services.

CE15. Capacity for the creation and exploitation of virtual surroundings, and for the creation, management and distribution of multimedia contents.

CE16. Capacity to develop an original and individual project, and to present and defend it in front of a university court once all the other subjects of the syllabus have been passed. It has to be a project within the computer sciences and of professional nature in which all the competences learned are synthesised.