L-Università ta' Malta

Bachelor of Science (Honours) in Computer Engineering

Course overview:

Computers control virtually any ICT aspect of our lives. Computer systems are found embedded in for example mobile phones, the internet, data storage systems, game consoles, manufacturing systems, home appliances, transport and naturally desktop and mobile computers. The pervasiveness of computer systems has led to an unprecedented growth in the demand for engineers that can design, configure, program, operate or improve computer systems. Computer systems engineers have expertise in both the hardware and software aspects. They can design and interface computer hardware and develop software to run on these systems. Computer systems engineers therefore play a central role in global industries such as telecommunications, data storage, cloud infrastructure, consumer electronics, microelectronics and manufacturing industries. The employment prospects for a Computer Systems Engineer both in Malta and around the world are high and the demand for this engineer is ongoing with a high probability of increasing as networked computer systems mushroom in society and as local industry develops higher value-added products and services.

The degree in Computer Engineering covers both the hardware and software aspects of computer systems. This program of studies covers the skills required to design a computing system that captures, transmits and processes information, typically but not limited to multimedia. This degree is suitable if you are interested in all aspects of computer engineering including computer systems infrastructure, telecommunications, multimedia signal processing, microelectronics and programming. Foundational topics and techniques are emphasised such that you will be able to learn new technologies as they materialize in the future.

Learning outcomes:

The first two years of the degree cover compulsory foundational topics, while in the last year students choose from a pool of elective units, spanning Telecommunications, ICT Infrastructure, Computer Systems Engineering, Multimedia Signal Processing and Microelectronics. Below are some more details on skills and outcomes.

• Scientific Knowledge of the underpinning theory, techniques, and methods that should form the arsenal of any Computer Engineer, allowing one to attain the necessary valid insight into real-world phenomena.

• Design and Engineering skills in planning micro, small and large computer and communication systems based on established and semi-formalised, or formalised, methodologies and tools.

• Hardware expertise in microelectronics and microsensor integrated circuit design

• Technology expertise and application: Knowledge, study, and use of existing technologies in specific fields of endeavour and the acquisition of skills pertaining to their effective application.

• Practical relevance: Clear appreciation and real mapping of theoretical knowledge to directly perceivable benefits in terms of practical situations and processes.

• Analytical, Critical and Computational Thinking Skills: The ability to learn and analyse an existing scenario and propose improvements and/or alternative solutions.

• Research methods: Knowledge and practice in the area of scientific exploration, discovery, representation and presentation of technological and scientific endeavour and propose clarifications, improvements and/or innovation.

• Basic process management: Knowledge and skills to assist in the correct monitoring and direction of modern concerted development effort.