ELECTRONICS AND COMMUNICATIONS ENGINEERING

Electronic engineering (also called **electronics and communications engineering**) is an electrical engineering discipline which utilizes nonlinear and active electrical components (such as semiconductor devices, especially transistors and diodes) to design electronic circuits, devices, integrated circuits and their systems. The discipline typically also designs passive electrical components, usually based on printed circuit boards.

Electronics is a subfield within the wider electrical engineering academic subject but denotes a broad engineering field that covers subfields such as analog electronics, digital electronics, consumer electronics, embedded systems and power electronics. Electronics engineering deals with implementation of applications, principles and algorithms developed within many related fields, for example solid-state physics, radio engineering, telecommunications, control systems, signal processing, systems engineering, computer engineering, instrumentation engineering, electric power control, robotics, and many others.

The Institute of Electrical and Electronics Engineers (IEEE) is one of the most important and influential organizations for electronics engineers based in the US. On an international level, the International Electrotechnical Commission (IEC) prepares standards for electronic engineering, developed through consensus and thanks to the work of 20,000 experts from 172 countries worldwide.

Electronics is a subfield within the wider electrical engineering academic subject. An academic degree with a major in electronics engineering can be acquired from some universities, while other universities use electrical engineering as the subject. The term electrical engineer is still used in the academic world to include electronic engineers.[1] However, some believe the term *electrical engineer* should be reserved for those having specialized in power and heavy current or high voltage engineering, while others consider that power is just one subset of electrical engineering similar to electric power distribution engineering. The term *power engineering* is used as a descriptor in that industry. Again, in recent years there has been a growth of new separate-entry degree courses such as systems engineering and communication systems engineering, often followed by academic departments of similar name, which are typically not considered as subfields of electronics engineering but of electrical engineering.