

Glossary of Terms For Consultants' Network Web Site

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Analog Circuit Engineers

An engineer involved in the design, manufacture, installation, operation, or maintenance of devices that operate with variables represented by continuously measured quantities such as voltages, resistances, rotations, and pressures.

Computer Engineering

Engineers in this specialty are involved with the design, manufacture, installation, operation and maintenance of digital computer systems for a wide range of applications. These applications may include, but are not limited to: data processing, industrial process control, aircraft flight control systems, point of sale systems, etc. Some individuals specialize further into the area of computer software and may be known as Computer Software Engineers. Others may specialize further into the area of computer hardware and may be known as Digital Hardware Engineers.

Computer Software Engineers

Engineers in this specialty are involved with the specification, design, implementation, testing and implementation of the "software", i.e., the sequences of instructions which enable a digital computer to carry out useful tasks.

Consulting Engineer

Consulting engineers perform engineering services for clients in some specialized area. The clients engage consulting engineers to accomplish engineering tasks which require knowledge, expertise and resources which is not available from the engineering staff of the client. For example a city government may engage a consulting engineer to study and make recommendations concerning improving the street lighting of some part of the community. A plastic products manufacturing firm may engage a consulting electrical engineer to study and make recommendations for upgrading the electrical distribution systems in their factory for greater reliability. An insurance company may engage an electrical engineering consultant to study the scene of a fire allegedly caused by an electrical failure and report on the proximate cause of this fire.

Control System Engineers

An engineer involved in the design, manufacture, installation, operation, or maintenance of devices an assemblage of control apparatus coordinated to execute a planned set of controls.

Digital Hardware Engineer

An engineer involved in the design, manufacture, installation, operation, or maintenance of devices that operate on the basis of discrete numerical techniques in which the variables are represented by coded pulses or states.

Forensic Engineering

Engineers are typically retained by attorneys to assist in prosecuting or defending legal actions. The engineer may contribute by analyzing the cause of accident which involves any one or all of the following: property damage/loss, personal injury, death. The cause of the accident may be for example: bad engineering design, failure to meet applicable codes, manufacturing defect, product abuse, lack of maintenance. The engineer may advise in terms of patent or copyright infringement, or other technical areas that are involved in a specific legal action. Engineers involved in forensic engineering are compensated for their time and expenses and do not accept engagements on a contingency fee basis where their compensation is based upon the financial judgement rendered in the case being litigated. < link to listing of forensic consultants >

IEEE - Institute of Electrical and Electronic Engineers

An international professional organization for electrical and electronic engineers which provides:

- 1) Quality technical publications that encompass the interests of the members worldwide;
- 2) Supports member activities at the region and section level for education, professional development and personal networking;
- 3) Supports standards activities in the areas of interest to the membership;
- 4) Lobbies for the interests of members in the political/legislative arena.

IEEE- History

The IEEE was formed by a merger in the 1960's of the AIEE, American Institute of Electrical Engineers, and the IRE, the Institute of Radio Engineers. The IRE had been formed in the early days of radio and wireless communication to provide a venue for publishing technical papers on this new industry which were not getting adequate press in the AIEE. The AIEE at that time catered more to the engineers engaged in the electric power, the telegraph and telephone industries.

IEEE Societies

In order to respond adequately to the specialized interests of its diverse membership, the IEEE has formed a number of technical societies such as the Power Engineering Society, the Computer Society, the Communications Society, the Power Electronics Society. For a complete listing and description of the Technical Societies (see www.ieeeusa.org). IEEE society membership is an indication of the areas of interest and specialization of IEEE members.

Power Engineering

Engineers in this specialty are involved with the design, manufacture, installation, operation and maintenance of apparatus involved in the generation, transmission, distribution of electrical energy.