DESCRIPTION OF ENGINEERING DISCIPLINES

Acoustics

Acoustics involves the engineering of sound and vibration to reduce unwanted sounds, generate useful sounds and to use sound as an indication of some other physical property.

Agricultural Engineering

Agricultural engineering involves the development of solutions to problems relating to both the use and conservation of soil, water, and forest resources as well as the development of technologies to improve crop and livestock production, improve food processing techniques, or extend the storage-life of perishable products like produce or flowers.

Building Services

Building services encompasses the design, installation and maintenance of all kinds of systems in new and existing buildings such as electricity and lighting, heating, ventilation and air-conditioning, lifts and escalators, fire and safety, plumbing and sanitation, acoustics and telecoms.

Chemical Engineering

Chemical Engineering involves the changing of raw materials into products by the application of the principles of science and engineering.

Civil Engineering

Civil Engineering involves the planning, design, construction and maintenance of structures such as roads, railways, airports, docks, tunnels, dams, water supply and sewerage systems.

Development Engineering

Development engineering involves the planning, design and implementation of engineering infrastructure for low income housing, informal trade facilities, urban renewal, rural areas and industrial development projects.

Electrical Engineering

Electrical engineering is concerned with research, design, development and operation of electrical machinery and equipment, as well as lighting and heating of offices, factories and homes.

Electronic Engineering

Electronic engineering involves low-power electricity to control equipment such as: telecommunications equipment, radio and television, computer applications, communications systems, hospital diagnostic equipment and control systems.

Environmental Engineering

Environmental engineering involves the development and management of pollution control measures, ecological processes, conservation measures, solid waste disposal systems, environmental impact assessments and the preparation and implementation of environmental management plans.

Geotechnical Engineering

Geotechnical engineering involves the investigation, analysis, design and prediction of the properties, characteristics and performance of naturally occurring materials such as soils, aggregates and rock.

Industrial Engineering

Industrial engineering involves the development and implementation of plans to maximize the efficiency and effectiveness of an organization by examination of how people, machines, energy, resources and information are used to accomplish management's goals and devise ways to improve those methods.

Marine Engineering

Marine engineering involves the planning, design, construction and maintenance of structures such as quay walls, jetties, breakwaters and revetments, in the ocean or other large water bodies.

Mechanical Engineering

Mechanical engineering involves the research, design, manufacture, and testing of all kinds of mechanical things such as tools, engines and machines. The study of materials, heat and energy transfer, manufacturing technologies, so as to design machines and tools that will meet all the requirements for the particular function intended.

Mining Engineering

Mining engineering involves the planning, design, development and operation of underground or open cast extraction and materials recovery operations in the earth’s surface.

Process Engineering

Process engineering involves the planning, design and development of activities and operations intended to convert material from one state to another in order to improve its usefulness or value.

Project Management

Project Management is a formalised and structured method of managing change in a rigorous manner. It focuses on producing specifically defined outputs by a certain time, to a defined quality and with a given level of resources so that planned outcomes are achieved.

Structural Engineering

Structural engineering involves the planning, analysis and design of the elements of structures such as buildings, bridges and silos, so as to be able to resist predetermined loads and forces.

Transportation Engineering

Transportation engineering involves the analysis, prediction and design of moving systems of people, goods and vehicles.