Introduction

Chemical Engineering

is a branch of engineering that applies the natural (or experimental) sciences (e.g. chemistry and physics) and life sciences (e.g. biology, microbiology and biochemistry) together with mathematics and economics to produce, transform, transport, and properly use chemicals, materials and energy. It essentially deals with the engineering of chemicals, energy and the processes that create and/or convert them. Modern chemical engineers are concerned with processes that convert raw materials or chemicals into more useful or valuable forms. They are also concerned with valuable materials and related techniques - which are often essential to related fields such as nanotechnology and bioengineering.

Civil engineering

is a professional engineering discipline that deals with the design, construction, and maintenance of the physical and naturally built environment, including works like roads, bridges, canals and buildings. Civil engineering for Am is traditionally broken into several sub-disciplines including architectural engineering, environmental engineering, *g*eotechnical engineering, control engineering, structural engineering, transportation engineering, urban engineering, water resources engineering, materials engineering, aerospace engineering, quantity surveying, construction surveying, and construction engineering. Civil engineering takes place in the public sector from municipal through to national governments, and in the private sector from individual homeowners through to international companies.

Mechanics

is an area of science concerned with the behavior of physical bodies when subjected to forces or displacements, and the subsequent effects of the bodies on their environment. The scientific discipline has its origins in Ancient Greece with the writings of Aristotle and Archimedes (see History of classical mechanics and Timeline of classical mechanics). During the early modern period, scientists such as Galileo, Kepler, and especially Newton, laid the foundation for what is now known as classical mechanics. It is a branch of classical physics that deals with particles that are either at rest or are moving with velocities significantly less than the speed of light. It can also be defined as a branch of science which deals with the motion of and forces on objects.