Chapter 1

What is Engineering?

1.1 Fun Quotes

Thanks to Harry T. Roman of East Orange, N.J., USA, who compiled the following 21 definitions of Engineering.

The application of science to the common purpose of life.

Count Rumford (1799)

Engineering is the art of directing the great sources of power in nature for the use and convenience of man.

Thomas Tredgold (1828)

It would be well if engineering were less generally thought of, and even defined, as the art of constructing. In a certain sense it is rather the art of not constructing; or, to define it rudely but not inaptly, it is the art of doing that well with one dollar which any bungler can be with two after a fashion.

A. M. Wellington (1887)

Engineering is the art of organizing and directing men and controlling the forces and materials of nature for the benefit of the human race.

Henry G. Stott (1907)

Engineering is the science of economy, of conserving the energy, kinetic and potential, provided and stored up by nature for the use of man. It is the business of engineering to utilize this energy to the best advantage, so that there may be the least possible waste.
1.1. *FUN QUOTES*

Willard A. Smith (1908)

Engineering is the conscious application of science to the problems of economic production.

H. P. Gillette (1910)

Engineering is the art or science of utilizing, directing or instructing others in the utilization of the principles, forces, properties and substance of nature in the production, manufacture, construction, operation and use of things ... or of means, methods, machines, devices and structures ...

Alfred W. Kiddle (1920)

Engineering is the practice of safe and economic application of the scientific laws governing the forces and materials of nature by means of organization, design and construction, for the general benefit of mankind.

S. E. Lindsay (1920)

Engineering is an activity other than purely manual and physical work which brings about the utilization of the materials and laws of nature for the good of humanity.

R. E. Hellmund (1929)

Engineering is the science and art of efficient dealing with materials and forces ... it involves the most economic design and execution ... assuring, when properly performed, the most advantageous combination of accuracy, safety, durability, speed, simplicity, efficiency, and economy possible for the conditions of design and service.

J. A. L. Waddell, Frank W. Skinner, and H. E. Wessman (1933)

Engineering is the professional and systematic application of science to the efficient utilization of natural resources to produce wealth.

T. J. Hoover and J. C. L. Fish (1941)

The activity characteristic of professional engineering is the design of structures, machines, circuits, or processes, or of combinations of these elements into systems or plants and the analysis and prediction of their performance and costs under specified working conditions.
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M. P. O’Brien (1954)

The ideal engineer is a composite ... He is not a scientist, he is not a mathematician, he is not a sociologist or a writer; but he may use the knowledge and techniques of any or all of these disciplines in solving engineering problems.

N. W. Dougherty (1955)

Engineers participate in the activities which make the resources of nature available in a form beneficial to man and provide systems which will perform optimally and economically.

L. M. K. Boelter (1957)

The engineer is the key figure in the material progress of the world. It is his engineering that makes a reality of the potential value of science by translating scientific knowledge into tools, resources, energy and labor to bring them into the service of man ... To make contributions of this kind the engineer requires the imagination to visualize the needs of society and to appreciate what is possible as well as the technological and broad social age understanding to bring his vision to reality.

Sir Eric Ashby (1958)

The engineer has been, and is, a maker of history.

James Kip Finch (1960)

Engineering is the profession in which a knowledge of the mathematical and natural sciences gained by study, experience, and practice is applied with judgment to develop ways to utilize, economically, the materials and forces of nature for the benefit of mankind.

Engineers Council for Professional Development (1961/1979)

Engineering is the professional art of applying science to the optimum conversion of natural resources to the benefit of man.

Ralph J. Smith (1962)