What is Bioengineering?

The NIH says:
Bioengineering integrates physical, chemical, or mathematical sciences and engineering principles for the study of biology, medicine, behavior, or health. It advances fundamental concepts, creates knowledge for the molecular to the organ systems levels, and develops innovative biologics, materials, processes, implants, devices, and informatics approaches for the prevention, diagnosis, and treatment of disease, for patient rehabilitation, and for improving health. (http://www.becon.nih.gov/bioengineering_definition.htm)

The Oxford Dictionary of Biology says it is:
The use of artificial tissues, organs, or organ components to replace parts of the body that are damaged, lost or malfunctioning
(http://www.med.uwo.ca/ecosystemhealth/education/glossary.htm)

The Free Dictionary says it is:
1. The application of engineering principles to the fields of biology and medicine, as in the development of aids or replacements for defective or missing body organs. Also called biomedical engineering. 2. Genetic engineering.
(http://www.thefreedictionary.com/bioengineering)

People on Wikipedia say a few things:
**Biological Engineering** (including biological systems engineering and bioengineering) is a form of biotechnology that uses broad-based engineering disciplines of product design, sustainability and analysis to improve and focus utilization of biological systems. Biological Engineering is a discipline that applies engineering principles to biological systems for the purpose of developing new technologies of services to improve the living standards of societies. It exploits new developments in molecular biology, biochemistry, cell metabolism, microbiology, ecology and engineering principles and applies them in order to understand living systems and to bring solutions to various problems associated with these systems.

Biological Engineering employs knowledge and expertise from a number of pure and applied sciences, such as: mass and heat transfer, kinetics, biocatalysts, biomechanics, bioinformatics, separation, and purification processes, bioreactor design, surface science, fluid mechanics, thermodynamics, and polymer science that constitute the fundamentals of engineering, and couples them with knowledge in biological sciences such as genetics, molecular biology, protein chemistry, cytology, neurobiology, immunology, ecology, and pharmacology, aiming to solve the different problems of the various sectors of modern societies.

Because other engineering disciplines also address living organisms (e.g., prosthetics in mechanical engineering), the term biological engineering can be applied more broadly to include food engineering and biotechnology. Biological Engineering is called Bioengineering by some colleges and Biomedical engineering is called Bioengineering by others, and is a rapidly developing field with fluid categorization. However, the Main Fields of Biological Engineering may be categorized as:
Biological Engineers are engineers who use the principles of biology and the tools of engineering to create usable tangible products. In general, biological engineers attempt to 1) mimic biological systems in order to create products or 2) modify and control biological systems so that they can replace, augment, or sustain chemical and mechanical processes. 
(https://en.wikipedia.org/wiki/Biological_Engineering)

Bioengineering (also known as Biological Engineering) is the application of engineering principles to address challenges in the fields of biology and medicine. As a study, it encompasses biomedical engineering and it is related to biotechnology.

Bioengineering applies engineering principles to the full spectrum of living systems. This is achieved by utilising existing methodologies in such fields as molecular biology, biochemistry, microbiology, pharmacology, cytology, immunology and neuroscience and applies them to the design of medical devices, diagnostic equipment, biocompatible materials, and other important medical needs.

Bioengineering is not limited to the medical field. Bioengineers have the ability to exploit new opportunities and solve problems within the domain of complex systems. They have a great understanding of living systems as complex systems which can be applied to many fields including entrepreneurship.

Much as other engineering disciplines also address human health (e.g., prosthetics in mechanical engineering), bioengineers can apply their expertise to other applications of engineering and biotechnology, including genetic modification of plants and microorganisms, bioprocess engineering, and biocatalysis. However, the Main Fields of Bioengineering may be categorised as:
* Biomedical Engineering; Biomedical technology; Biomedical Diagnosis, Biomedical Therapy, Biomechanics, Biomaterials.
* Genetic Engineering; Cell Engineering, Tissue Culture Engineering.

The word was invented by British scientist and broadcaster Heinz Wolf in 1954. [1]

"Bioengineering" is also the term used to describe the use of vegetation in civil engineering construction.

The term bioengineering may also be applied to environmental modifications such as surface soil protection, slope stabilisation, watercourse and shoreline protection, windbreaks, vegetation barriers including noise barriers and visual screens, and the ecological enhancement of an area. (https://en.wikipedia.org/wiki/Bioengineering)