

?Clinical Sciences: (All the clinical Specialties) dentistry, maxillofacial, neurosurgery, obstetrics and gynecology, ophthalmology, orthopedics, plastic and reconstructive surgery, thoracic and cardiovascular surgery, veterinary medicine and surgery, etc. Science and engineering: (Materials Science) structure-property relationships of synthetic and biological materials including metals, ceramics, polymers, composites, tissues (blood and connective tissues), etc. Biology and Physiology: Cell and molecular biology, anatomy, animal and human physiology, histopathology, experimental surgery, immunology, etc. Many millions of patients have enjoyed alleviation of pain, increased function and an improved quality of life due to the success of biomedical materials and the implants and devices made from them. Bio-compatibility: Acceptance of an artificial implant by the surrounding tissues and by the body as a whole. Biomaterials are used to make devices to replace a part or a function of the body in safe, reliably economically, and physiologically acceptable manner. Commonplace examples include suture needles, plates, teeth fillings, etc. 1- Standard Specifications: Many standard specification tests of both national and international standards organizations (ISO) are now available, which effectively maintain quality levels. Such specifications normally give details for: (a) the testing of certain products, (b) the method of calculating the results (c) the minimum permissible result, which is acceptable. Biomaterial: A synthetic material used to make devices to replace part of a living system or to function in intimate contact with living tissue. A variety of devices and materials are used in the treatment of disease or injury. The worldwide number of implanted devices is in the range of 4 000 000 to 5 000 000 per year. Fields of Knowledge to Develop Biomaterials ? More than 40 different materials are currently used to replace more than 40 different parts of the body. Biomaterials ? Biological Material: A material that is produced by a biological system. ??????