This book is an introduction to biomedical engineering. Presented at a level accessible to all students it starts from the basics and gradually demonstrates the engineering principles that are used to create new diagnostic methods and therapies for human disease.

In the past decade biomedical engineering has grown to encompass a range of fields of specialization including bioimaging, biomechanics, bioinstrumentation, biomaterials, and biomolecular engineering. This book assembles foundational resources from molecular and cellular biology and physiology and shows how they link to various sub-specialties of biomedical engineering.

In the first two parts of the book basic information from molecular/cellular biology and human physiology is presented; quantitative concepts are stressed in these sections. These basic life science principles provide the framework in which biomedical engineers work.

The last part of the book is devoted to the sub-specialties in biomedical engineering, and emphasizes - through examples and profiles of people in the field - the types of problems biomedical engineers solve.