A textbook for students of food science and nutrition and a comprehensive reference volume for professional food scientists, practicing dietitians, and other medical professionals provides a detailed integration of food chemistry, biochemistry, and nutrition. The text consists of 3 major parts. The first part details the basic chemistry of food constituents, describes analytical methods for determining the nutrient composition of foods, and provides detailed discussions of nutritional energetics, photosynthesis, and food industry colloidal food systems. The second part outlines the integrated metabolism of all food constituents and discusses trace elements, food toxicants, nutritional and etiological factors related to various disease states, the effects of hormonal control on nutritional biochemical sequences, and food-drug interactions. The final part of the book provides basic information on molecular genetics as a basis for the application of engineering to the development of new foods. An extensive use of tabular data and illustrations is made throughout the book, and reference information is provided in 3 appendices.