
PREFACE

Our aim in previous editions of *Cell Biology: A Short Course* was to cover a wide area of cell biology in a form especially suitable for first-year undergraduates, keeping the book to a manageable size so that neither the content, the cost, nor the weight were too daunting for the student. We have remained true to this aim while thoroughly revising the book and introducing new sections on cancer and the immune system. Many more medical examples are included, and these concentrate on topics covered in medical courses rather than obscure genetic diseases.

The overall theme for the book is the cell as the unit of life. We begin (Chapters 1–3) by describing the components of the cell as seen under the microscope. We then (Chapters 4–8) turn to the central dogma of molecular biology and describe how DNA is used to make RNA, which in turn is used to make protein. The next section (Chapters 9–11) describes how proteins are delivered to the appropriate location inside or outside the cell, and how proteins perform their many functions. We then (Chapters 12–14) describe how cells manipulate and use chemical and electrical energy. Chemical signaling within and between cells is covered in Chapters 15 and 16. The cytoskeleton is described in Chapter 17 and plays a major role in the phenomenon of cell division that, together with cell death, is

the subject of Chapter 18. Chapter 19, new in this edition, describes the immune system. Finally Chapter 20 uses the example of the common and severe genetic disease cystic fibrosis to illustrate many of the themes discussed earlier in the book.

Boxed material throughout the book is divided into **examples** that illustrate the topics covered in the main text, explanations of the **medical relevance** of the material, and **in-depth** discussions that extend the coverage beyond the content of the main text. Extended matching questions at the end of each chapter help readers assess how well they have assimilated and understood the material, while each chapter also poses a thought question that tests concepts rather than facts.

A comprehensive website accompanies the book at www.wileyshortcourse.com/cellbiology. As well as giving additional self-test questions, the website includes a wealth of extra examples, in-depth explanations, and medical discussions for which there was no room in the printed book. The site also provides links to other Internet resources together with references to primary research publications to allow readers to trace the origin of statements in the text. The symbol  in the book indicates that a corresponding entry in the website can be consulted for more information.