A Top-Down Pathway

Because most students today come to a networking class familiar with networked applications, a number of classes take the application as their starting point. While we do cover applications at a high level in Chapter 1, it is not until Chapter 9 that application layer issues are discussed in detail. Recognizing that some professors or readers may wish to follow a more top-down ordering, we suggest the following as a possible way to approach the material in this book.

- **Chapter 1.** This chapter describes applications and their requirements to set the stage for the rest of the material.

- **Chapter 9.** The sections on traditional applications (Section 9.1) and multimedia applications (Section 9.2) will introduce readers to the concepts of network protocols using the examples of applications with which they are already familiar. Section 9.3.1 (DNS) could also be covered.

- **Section 7.2** could be covered next to explain how the data that is generated by multimedia applications is encoded and compressed.

- **Chapter 5.** Transport protocol basics can now be covered, explaining how the data generated by the application layer protocols can be reliably carried across a network.

- **Chapter 3.** Switching, Internetworking, and Routing can be understood as providing the infrastructure over which transport protocols run.

- **Chapter 2.** Finally, the issues of how data is actually encoded and transmitted on physical media such as Ethernets and wireless links can be covered.

Clearly we have skipped quite a few sections in this ordering. For a more advanced course or comprehensive self-study, topics such as resource allocation (Chapter 6), security (Chapter 8), and the advanced topics in Chapter 4 could be added in towards the end. Security could be covered almost stand-alone, but all these advanced topics will make most sense after IP and TCP have been covered in Chapters 3 and 5 respectively.