From social networks such as Facebook, the World Wide Web, and the Internet, to the complex interactions between proteins in the cells of our bodies, we constantly face the challenge of understanding the structure and development of networks. The theory of random graphs provides a framework for this understanding, and in this book the authors give a gentle introduction to the basic tools for understanding and applying the theory. Part I includes sufficient material, including exercises, for a one-semester course at the advanced undergraduate or beginning graduate level. The reader is then well prepared for the more advanced topics in Parts II and III. A final part provides a quick introduction to the background material needed.

All those interested in discrete mathematics, computer science, or applied probability and their applications will find this an ideal introduction to the subject.

Alan Frieze is a Professor in the Department of Mathematical Sciences at Carnegie Mellon University, Pennsylvania, USA. He has authored more than 300 publications in top journals and was invited to be a plenary speaker at the Seoul ICM 2014. In 1991 he received the Fulkerson prize in discrete mathematics.

Michał Karoński is a Professor in the Departments of Mathematics and Computer Science at Adam Mickiewicz University in Poznań, Poland and Emory University, Atlanta, USA. He is founder of the Discrete Mathematics group in Poznań and since 1990 has served as co-Editor-in-Chief of *Random Structures and Algorithms*.