

# CPSC 351: Recommended References

It is not required (and should not be necessary) to use material that is not freely provided on the course web site, in order to do well in this course. Furthermore, material that you find online can be **highly unreliable**: Sometimes technical terms, used in this course, are used in inconsistent (and, very different) ways. The internet includes many misleading — and, sometimes, downright *false* — claims about things that are being studied here.

## In Case You Need to Review

- S. S. Epp, *Discrete Mathematics with Applications*  
Fifth Edition, Brooks Cole, 2019
- K. H. Rosen, *Discrete Mathematics and Its Applications*  
Eighth Edition, McGraw Hill, 2018

One of these is frequently used as a textbook or recommended reference for MATH 271, while the other is frequently used as a textbook or recommended reference for CPSC 251. They are both readable references for the material, in discrete mathematics (as well as logic and proofs), that are covered in prerequisite courses and that will be assumed as background for CPSC 351.

The editions listed, above, are the most recent editions available. Older editions should also be useful, if you already have one of these instead.

## Automata and Computability Theory

- M. Sipser, *Introduction to the Theory of Computation*  
Third Edition, CENGAGE Learning, 2013
- J. E. Hopcroft, R. Motwani, and J. D. Ullman, *Introduction to Automata Theory, Languages, and Computation*  
Third Edition, Pearson/Addison-Wesley, 2007

The first reference is the favourite of many people, partly because it is very well written (and easy to read). Unfortunately it sometimes lacks details — just giving intuition when proofs

might be expected, instead. The second is an update of a “classic” textbook in this area that is a little bit more challenging to read, but includes the proofs that the first book sometimes omits. Unfortunately, North American editions of both of these books are quite expensive. Fortunately, much less expensive “international” editions of these books seem to include everything that is needed, and are available online (including at [amazon.ca](http://amazon.ca)).

## **Discrete Probability Theory**

- D. Stirzaker, *Probability and Random Variables: A Beginner's Guide*  
Cambridge University Press, 1999.

A readable introduction to the material on discrete probability theory covered in this course — which also includes a considerable amount of additional information about this topic that students might find to be interesting. This is freely available to University of Calgary students, as an ebook provided by the University of Calgary library, and a link to this ebook is available on the course web site.