

NONE of the following texts is required for MATH 648M. The books are listed here only in case you are interested in pursuing further study. Optional reading from the recommended books will be assigned.

**Recommended textbooks** (from the perspective of applied mathematics and applications):

1. H. Cheng, *Advanced Analytic Methods in Applied Mathematics, Science, and Engineering*, Luban Press, 2005.
2. M. H. Holmes, *Introduction to Perturbation Methods*, Springer, 1998.
3. A. Chorin and O. H. Hald, *Stochastic Tools in Mathematics and Science*, Springer, 2005.
4. G. A. Pavliotis and A. M. Stuart, *Multiscale Methods: Averaging and Homogenization*, manuscript, January 2007; some copies may be distributed only after permission by the authors.
5. C. M. Bender and S. Orszag, *Advanced Mathematical Methods for Scientists and Engineers*, Springer, 1999.

**Other books, with emphasis on applications:**

6. G. F. Carrier, M. Krook, and C. E. Pearson, *Functions of A Complex Variable: Theory and Technique*, Hod Books, 1983.
7. E. J. Hinch, *Perturbation Methods*, Cambridge University Press, 2002.
8. A. H. Nayfeh, *Perturbation Methods*, Wiley, 1973.
9. C. W. Gardiner, *Handbook of Stochastic Methods*, Springer, 2004.
10. N. G. Van Kampen, *Stochastic Processes in Physics and Chemistry*, North Holland, 2001.

**Books at a more advanced level:**

11. A. Erdelyi, *Asymptotic Expansions*, Dover, 1956.
12. L. C. Evans, *Partial differential equations*, American Mathematical Society, 1998.
13. F. W. J. Olver, *Asymptotics and Special Functions*, Academic Press, 1974.
14. W. Wasow, *Asymptotic Expansions for Ordinary Differential Equations*, Dover, 2002.
15. K. Ito and H. McKean, *Diffusion Processes and Their Sample Paths*, Springer, 1974.