

Theoretical Biophysics: Literature

- R. Zwanzig, Nonequilibrium Statistical Mechanics,
Chapters 1, 2, 4: Mathematically quite demanding, physically
very nice. No Biophysics, but otherwise among all the books the
one closest to the present lecture.
- J. Howard, Mechanics of Motor Proteins and the Cytoskeleton
Chapter 4: several central themes of this lecture
discussed on an easy level.
- H. Risken, The Fokker-Planck Equation
Chapters 1-6: The main themes of this lecture presented in
a somewhat different way together with further themes which
we do not treat. Moderate-high level. No Biophysics.
- C. W. Gardiner: Handbook of Stochastic Methods for Physics, Chemistry
and the Natural Sciences
Chapters 1-5, 9: The main themes of this lecture presented in
a somewhat different way together with further themes which
we do not treat. Moderate-high level. No Biophysics.
- P. Reimann, Brownian Motors: Noisy Transport far from equilibrium,
Chapter 2: Similar to parts of this lecture
Chapter 7: An important Biophysical application (motor enzymes)
which we may possibly not treat here due to lack of time.
- M. B. Jackson, Molecular and Cellular Biophysics,
Chapters 6-9: several central themes of this lecture discussed
on an moderate-easy level.
Rest of this book: Many further very nice topics in Theoretical
Biophysics, which we cannot treat in this lecture due to
time limitations.
- W. Paul & J. Baschnagel, Stochastic Processes, from Physics to Finance
Chapters 1-3.3: Some of the central themes of this lectures, but
presented in a quite different way. Moderate level. No Biophysics
-

All books are available in the library. They are collected into a
"Semester-Apparat". Everybody can take and read these books in the
library but not take them home. For some of the books there exist
further "ordinary copies", which you can borrow and take home as usual.

General advice: first try to understand your lecture notes. If you
cannot understand them to your satisfaction, ask somebody. Only in the
third place go into the literature. I believe that the literature will
most often be more difficult to understand than the lecture notes (more
mathematical "details" are omitted, and more material than in our
lecture is covered).

If you already understood the lecture and you are interested to
learn more, then the literature is a good starting point.