Sept. 8, 2010 **Course Information Sheet** **Physics 347: Biological Physics**

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Lectures: MWF 9:30—10:20 (AQ 5008)
Tutorial: Tu 9:30-10:20 (AQ 5005) (Note: There will be no tutorial the first week of classes.)

Prerequisites: 45 credit hours in a science program, including CHEM 122, MATH 152 (or 155), PHYS 121 (or 102 or 126 or 141). BISC 101 is recommended. Course is intended for those majoring in Physics, Biology, of Molecular Biology.

This is a relatively new course. We are trying a new text. It will probably be a demanding course; I hope that it will also be fun.

Course Website: http://www.sfu.ca/phys/347/
Course information, including homework assignments, solutions, and (time permitting) pdf versions of my lectures, will be available on the website.

Text: *Physical Biology of the Cell*, R. Phillips, J. Kondev and J. Theriot (Garland Sci., New York, 2009)
Website: http://www.garlandscience.com/textbooks/0815341636/resources/default.html
Comments:
We will NOT cover the whole book. I'll try to cover most material in Chs. 1—11 (except Ch. 4) and some material from a few of the remaining chapters.
Other Useful Books:
Biological Physics: Energy, Information, Life, Philip Nelson (W.H. Freeman, New York, 2008)
Random Walks in Biology, Howard Berg (Princeton U. Press, Princeton, 1993)
Zoological Physics, Boye Ahlborn (Springer-Verlag, Berlin, 2004)

Other Useful Resources:
Websites:
Biophysical Society On-Line Resources:
www.biophysics.org/ProfessionalDevelopment/SelectedTopicsInBiophysics/tabid/2311/Default.aspx
Books:
Biophysics:

- Cotterill, Rodney, **Biophysics: an Introduction**
- Hobbie, Russell K., **Intermediate Physics for Medicine and Biology**
- Benedek, George B., and Villars, Felix M.H., **Physics with Illustrative Examples from Medicine and Biology**, Vols. 1, 2, and 3.

Molecular Biology: (excellent general reference, "The Bible")

- Alberts et al., **Molecular Biology of the Cell** (Garland, 2007) Fifth Edition

What are you "responsible" for?
Assigned reading, lecture and tutorial material (including class notes and assigned problems).
This is an interdisciplinary course; you have different backgrounds. I am not going to try to draw sharp boundaries around what you should get out of this course. Different students will learn different "new" material. Nothing is "irrelevant" in science (or in life). But, some things are more important than others. I will always react negatively to the question "do I have to know this for the test." On the other hand, I will try to give you guidance about what is more important and what is less important.

Course requirements and grading:

Mid-term exam (in class): Mid-term: Friday, Oct. 29	(15% of grade)
Final Exam: Monday, Dec. 13, 3:30-6:30 pm	(45% of grade)
Homework assignments (biweekly):	(40% of grade)

Comments:

I will use the "Harvard" system for weighting the final exam. Thus, the midterm exam is worth 15%. Whatever fraction of that 15% you do not get by correctly on the midterm exam will be added to the final, i.e., if you get half credit on the midterm, the 7.5% that you did NOT get will be added to the final, making the total weight of the final exam 52.5%. Note that the homework is not included in this calculation.

I expect everyone to do all the homework. I strongly encourage you to talk to one another and to work together in figuring out how to do the problems. On the other hand, when you write out your solutions, *that must be your own work*. Duplicate assignments will be regarded as plagiarism.