

# MOLECULAR BIOLOGY AND BIOCHEMISTRY

## MBB 323-3

### Introduction to Physical Biochemistry

DAY Fall 2007

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<b>Instructor:</b>	Dr. E. Young Office: SSB 7155
<b>Description/topics:</b>	<p><b><u>General Course Description:</u></b> Several landmark theories of physics and chemistry, called <i>thermodynamics</i>, <i>kinetics</i>, and <i>statistical mechanics</i>, form the foundation for understanding biochemical reactions. This course introduces these theories at an elementary level, and then focuses on how they have been extended specifically for biochemical problems. Techniques for measuring physical properties of biological molecules are discussed, along with the models which are commonly invoked to explain the observed properties.</p> <p>3 lectures, 1 tutorial, 0 lab hours/week</p> <p><b><u>Key Theories and examples of biochemical applications</u></b></p> <ul style="list-style-type: none"><li>- Thermodynamics<ul style="list-style-type: none"><li>- folding/denaturation of proteins/nucleic acids</li><li>- ligand-receptor binding</li></ul></li><li>- Kinetics<ul style="list-style-type: none"><li>- enzyme catalysis</li><li>- diffusion and transport</li></ul></li><li>- Statistical mechanics<ul style="list-style-type: none"><li>- conformational dynamics</li></ul></li></ul>
<b>Grading:</b>	Problem Sets (30%), Midterm I (20%), Midterm II (20%), Final Examination (30%).
<b>Required texts:</b>	I. Tinoco, K. Sauer, J.C. Wang and J.D. Puglisi, <u>Physical Chemistry: Principles and Applications in Biological Sciences</u> . Fourth Edition. 2001. Prentice Hall. ISBN 0-13-095943-X.
<b>Materials/supplies:</b>	None.
<b>Prerequisite/corequisite:</b>	MATH 152 (or 155), PHYS 121 (or 102), CHEM 122 (or 102), MBB 222.

"Students requiring accommodations as a result of a disability, must contact the Centre for Students with Disabilities (604-291-3112 or e-mail: csdo@sfu.ca)."