PHZ 4710 Introduction to Biological Physics
(Spring 2020: Class Number 18694, Section 3812, 3 credits)

Tentative Syllabus (Version of 06 January 2020)
http://www.phys.ufl.edu/~meisel/PHZ4710-Spring2020.html

Instructor:
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Office Hours: posted online, http://www.phys.ufl.edu/~meisel/schedule.htm, and by appointment.

Email Correspondence with Instructor:
Professor Meisel will attempt to respond, within 24 hours, to email (**from UF email accounts**) if the message contains the name of the student. **Email will only be sent to UF Email addresses.**

Prerequisites:
One year of introductory physics (PHY2053/PH2054, PHY2048/PHY2049, or the equivalent) and one year of calculus (MAC2311/MAC2312, or the equivalent), or permission of instructor.

Meeting Times and Place:
Tuesdays and Thursdays: 5^{th}-6^{th} periods (11:45 am – 1:40 pm) in NPB 1216. Please note: although the schedule indicates 4 hrs per week, only 3 hrs per week will be in the classroom. In other words, we will start promptly at 11:45 am and end nominally by 1:15 pm on each day. The remainder of 6^{th} period can be used for group work, if desired, or for conversations/appointments with the Instructor. Students are expected to attend the lecture sessions.

Attendance:
Attendance in class is definitely expected since material outside the textbook will be presented. You are responsible for all material covered in the text and in class. All of this material is relevant for any graded exercise, unless otherwise stated.

Textbook:
Required "Textbook" [available only as hardcopy from Target Copy (W. Univ. location)]:
PHZ4710 - Biological Physics Lecture Notes by Prof. Stephen J. Hagen.

Posting:
Materials and information concerning the course, including important dates and an *"in vivo"* schedule will be posted on the Course Webpage, see
http://www.phys.ufl.edu/~meisel/PHZ4710-Spring2020.html

Subject and Focus of the Course:
From the UF Course Catalog: "The physics of biological systems, including physics of proteins and nucleic acids, biomolecular motors and diffusional signaling and sensing. Important experimental tools such as magnetic resonance and synchrotron x-ray crystallography are also discussed. (WR)"

More specifically and for this version: This course aims to introduce and survey the physical principles that underlie a variety of important biological, biophysical, biochemical phenomena, as well as a number of modern laboratory techniques and probes. The course combines physical, biological, and chemical perspectives in order to explore a wide range of topics in a way that is not usually possible in standard undergraduate science and engineering courses. The presentation is aimed at the undergraduate level and is designed for students who seek to expand their horizons.

In addition to some "traditional" topics, the course will survey some current interests of the instructor and of the students. In addition, some graded exercises are designed to provide experience with gaining insight by reading articles published in journals and by attending professional seminars given by visiting experts.

General Education:
This course is not designated to meet the General Education Requirement at the University of Florida.

Writing Requirement (WR):
This course is designated "WR", see the Physics Course Catalog entry for PHZ4710. This designation means this course confers 2000 words towards the Writing Requirement (WR), which ensures students both maintain their fluency in writing and use writing as a tool to facilitate learning. Specifically, the writing assignments for this course focus on "science writing". In addition to evaluating and providing feedback on students' written assignments with respect to grammar, punctuation, clarity, coherence, and organization, the context of the scientific message will also be evaluated.

Grading Policy:

Homework: Homework problems will be assigned on a regular basis. Students are expected to work on the problems and submit their work individually. Discussion with your colleagues are encouraged but should not be used as a shortcut to completing the assignments. Work must be complete, concise, and clear for full credit.
Assignments submitted late will not be graded.

Term Paper: Students will choose one topic out of the suggested topics in consultation with the instructor and write a comprehensive research paper. All papers should be submitted electronically in PDF and will be checked by Turnitin. Students are encouraged to use LaTeX to generate PDF files but MS Word is also acceptable. The topics and detailed structure of the paper will be announced in class. Grammar and logical organization will be elements of the grade. The term paper will be graded by the letter grade system: A (30%, full score), B (20%), C (10%), and E (0%).

Seminars/Colloquia: Students will get credit for attending various biophysics related seminars or colloquia held in various departments around campus. These seminars or

colloquia may be used for this course if and only if they are not part of a grade for another course for the student. Each student will submit a 300 word summary of the talk with his/her own questions on the subject (or his/her questions asked during the seminar or colloquium). Three reports will be 10% of the total grade.

Additional details about the UF grading policies can be found at found at: https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx.

Summary	
Homework	30%
Term Paper	30%
Seminars/Colloquia	10%
Class Participation/Work	30%
Total	100%

Final Course Grade Scale	
A	85% - 100%
A-	80% - 84.9%
B+	75% - 79.9%
B	70% - 74.9%
B-	65% - 69.9%
C+	60% - 64.9%
C	55% - 59.9%
C-	50% - 54.9%
D+	45% - 49.9%
D	40% - 44.9%
D-	35% - 39.9%
E	0% - 34.9%

Make-Up of Graded Material:
Consistent with university policies described elsewhere (here), students will be allowed to make-up graded material. In most circumstances, the reason for the make-up will need to be documented by a note typically from a medical doctor, an attorney, or a UF official. Notes from family members are not acceptable. When possible, the student should inform the Instructor in advance of absences or delays in completing graded assignments.

Academic Honesty:
Each student is expected to generate graded work by an individual and original effort. It is understood that some students benefit from "group study". However, all quizzes, tests, and the final examination will be individual efforts, using only the materials authorized by the Instructor. Any violation of this policy will be treated according to UF policy (e.g. usually a zero grade is given on the assignment). Please review the University Policies on Academic Honesty, and helpful links are: https://sccr.dso.ufl.edu/process/student-conduct-code/ and https://dso.ufl.edu/resources/student-handbook/.

> ***"Academic honesty and integrity are fundamental values of the University. Students commit to holding themselves and their peers to the high standard of honor required by the Student Honor Code. Any Student who becomes aware of a violation of the Student Honor Code is encouraged to report the violation to the appropriate University Official."***

Accommodations and Advising:
Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, https://disability.ufl.edu/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Advising and Counseling:
Due to the nature of the environment at the university, it is not uncommon for students to experience stressful situations, and "study harder" sometimes does not seem to work. If you find yourself in this situation, you are encouraged to seek confidential counseling, see: http://www.counseling.ufl.edu/cwc/.

Incomplete Policy:
A grade of incomplete is typically given to students who endure a situation in which they are incapable of completing the coursework. The I-grade is not to be given to students who are simply dissatisfied with their performance in the course. If you find you are in a situation that might qualify you for an I-grade and you want to pursue this potential option, then you must contact the Instructor as soon as possible. A PDF of the policy is posted at: http://www.phys.ufl.edu/downloads/gradepolicy.pdf.

Final Exam and Special Notes about the Syllabus:
Please note that the dates for all graded materials, except the Final Exam, are TENTATIVE. The schedule will be finalized during the course,announced in class, and posted to the *"in vivo"* schedule, http://www.phys.ufl.edu/~meisel/PHZ4710-Spring2020.html.
The Final Exam is not tentative and is listed as "5/1/2020 @ 12:30 PM - 2:30 PM". There is no final exam for this course, but any "make-up" work must be completed and submitted by the end of this Final Exam window.

Comments on Knowing Your Grades:
It is expected that graded material will be returned to each student in a timely fashion, usually at the start of the first class period after which it was submitted. Students should NOT mark on the graded sheets. The material and rubric will be reviewed in lecture. After the review, if a student has any question about the grading of the work, it should be returned to the Instructor. In a timely manner, the student should meet with the professor to review the grading. If a student decides that the work is correctly graded, then the student may keep the graded work. At that point, the student yields any opportunity to debate how the work was graded. The student should keep the hardcopy until the end of the semester in case there is any dispute about the total number of points earned during the course. The E-Learning system is used to electronically post the grades, http://elearning.ufl.edu/. If you have any questions about your points on any material or for the course, please contact the Instructor.

General Classroom Behavior:
At all times, a safe, welcoming, and inclusive atmosphere is expected to be established in the classroom. All participants are required to conduct themselves in a professional manner that is free from any form of discrimination, harassment, or retaliation. If any concerns or issues arise, please reach out to the Instructor or to other confidential services on campus (https://hr.ufl.edu/forms-policies/policies-managers/sexual-harassment/). In order to create a focused environment that is free of distractions, the reading of newspapers, the working of puzzles, and the use of electronic devices such as cell phones, laptops, and tablets are not permitted unless approved for use to make classroom accommodations or to engage in a classroom assigned PHZ 4710 exercise. Please mute your personal electronic device, and if you need to attend to an emergency, please quietly exit the classroom to handle the text message or phone call in the atrium or hallway.

Acknowledgements:
The general approach of the course is based on the one designed by Prof. Stephen J. Hagen, who kindly allowed his notes to be used as a course.