Course Syllabus:
F18 PHY 2004 - Applied Physics 1

Course Description

PHY2004 - Applied Physics 1: Emphasizes the practical applications of basic physics to a range of professions, including architecture, agricultural sciences, building construction and forest resources. Mechanics of motion, forces, energy, momentum, wave motion and heat. 3 credits

Instructor: Dr. Kathryn McGill

Contact: via Canvas mail (see far left blue navigation pane)

Class (NPB 1001): MWF Per. 8 (3:00-3:50 pm)

Office Hours (NPB 2112): WR Per. 6 (12:35-1:55 pm)

Course Objectives

By the end of this course, students will have improved their existing foundation in the concepts, principles, terminology, and methodologies used to describe motion (translational, rotational and combined) of simple objects, the basic properties of matter, harmonic oscillations, and wave motion. Specifically, students will be able to:

1. **Analyze** particular physical situations, and thus identify the fundamental principles pertinent to those situations to make successful predictions of system behavior,
2. **Apply** fundamental principles to formulate mathematical equations describing the relation between physical quantities in these particular situations,
3. **Solve** mathematical equations to find the values of physical quantities, and
4. **Communicate** unambiguously both the principles that apply to a situation and the results of specific calculations resulting from the steps above.

Student Expectations

To achieve the learning outcomes, students are expected to:

- Visit the weekly module page at the beginning of the week to understand the module learning objectives and to plan your engagement with course content for the week ahead.
- Read the assigned chapters in the textbook and to view the corresponding lecture videos.
- Work through the examples presented in the text and in the practice problem videos in order to learn the physics concepts, principles, and problem-solving techniques of introductory physics.
- Complete homework assignments to self–assess your understanding of the module's concepts and problem solving strategies on a weekly basis.

- To seek help from your instructors and other students when specific content does not make sense, and to seek out additional practice when needed to gain mastery before moving on to future modules. These additional materials should include problems at the end of the chapter that are not assigned as part of your homework.

This course requires an extensive amount of time to do all of the above, and students should plan accordingly to spend 12 hours per week on course preparation and practice.

Required Materials

The required text is ***Physics: Principles with Applications by Douglas Giancoli*, 7th ed**, published by Pearson. The course is set up for an All-Access opt-in to purchase the text online for students who have registered in the course. The opt-in procedure begins with this link: https://www.bsd.ufl.edu/G1CO/IPay1f/start.aspx?TASK=INCLUDED, and a complete walk-through of the setup process is provided here.

The required online homework system is *MasteringPhysics*, access to which is included in the purchase of the online textbook described above. Access *MasteringPhysics* using the link provided in the Canvas website menu item "MyLab and Mastering".

N.b. While a loose-leaf edition of the book is available in the bookstore for $37.50, it does not include the *MasteringPhysics* subscription, which you will need in order to complete the homework for this course.

Make sure you work through all of the steps on the Orientation page, which will bring you up to speed using the Canvas/*MasteringPhysics* software.

Optional, but strongly encouraged: H-ITT clicker for in-class participation; registration information here. You will receive 2 points for a correct answer, 1 point for an incorrect answer, and 0 points for no answer. I will drop the lowest 20% of your H-ITT clicker scores, after which your overall H-ITT clicker score will give you up to 3% extra credit in your final grade.

Canvas & *MasteringPhysics* Information

Canvas is the place where course content, grades, and communication will reside for this course. *MasteringPhysics* is integrated into Canvas and is the source of your homework problems.

- Canvas: ufl.instructure.com
- *MasteringPhysics*: access through Canvas, "MyLab and Mastering" menu item
- For Canvas, passwords, or any other computer-related technical support contact the UF Help Desk:
  - phone: (352) 392-HELP (4357)
  - website: http://helpdesk.ufl.edu
  - email: helpdesk@ufl.edu

- Brad Maynard from Pearson is hosting a help desk on Tuesday, August 28th from 10:00 am to 4:00 pm. He can answer any and all questions you may have about UF All Access and *MasteringPhysics* registration and software usage.

Course Policies

ATTENDANCE POLICY: You are expected to attend lecture MWF from 3:00 pm to 3:50 pm in NPB 1001. You are also encouraged to attend office hours with Dr. McGill in NPB 2112, which will be announced in class Fri. Aug. 24 and updated here.

I will be posting my lecture notes here after class; however, I will not answer requests to explain any notation, etc. If you are attending class, they should largely make sense. I strongly encourage you to explore Dr. Acosta's videos (provided in each module) to supplement our work in class.

HOMEWORK POLICY: Homework sets are completed online through *MasteringPhysics* at any time between the opening of the assignment and the deadline announced in the course calendar. These assignments are not timed or proctored, but they are subject to the UF Policy on Academic Misconduct (see below).

It is permissible to seek assistance or collaborate on homework with your instructor or your classmates. This assistance may include help with interpreting the problem, identifying relevant information in the textbook or course videos, or identifying one's errors. No credit is available for late assignments. (See "Getting Help" below for what to do in the event of technical problems with the Canvas e-Learning system.)

Late homework will receive 50% of the raw score points, unless it is a "did or didn't do it" kind of task. (For example, the "Physics & Your Field" question.)

EXAM POLICY: Three mid-term exams and a cumulative final exam will be administered during the course. All midterms will be administered in class, and tentative dates for all of the exams are listed below. Exams are not collaborative and will be completed alone.

You may use any scientific or graphing calculator on the exams, as long as it does not have the ability to communicate with other devices electronically. Mobile devices and laptops are not permitted. Use of them constitutes academic fraud.

I will provide you with a formula sheet (to be posted) and scratch paper for your exam. Private formula sheets are not allowed, and use of them constitutes academic fraud.

MAKE-UP POLICY: Requirements for class attendance and make-up exams, assignments, and other work are consistent with university policies that can be found here. For a foreseeable absence, it is your responsibility to identify yourself as requiring an accommodation at least one week prior to the absence.

Grade Calculation

Grades in the course are awarded based on an overall course score calculated as follows:

Assignment	Grade Percentage
Exam 1 (Modules 1-4)	20%
Exam 2 (Modules 5-8)	20%
Exam 3 (Modules 9-11)	20%
Exam 4 (Modules 12-14; cumulative)	30%
Homework	10%
HITT Participation (extra credit)	up to 3%

(Approximate) Grade Scheme

The following are the **approximate** grading standards used in this class:

Grade	Range
A	100% to 85.0%
A-	< 85.0% to 80.0%
B+	< 80.0% to 75.0%

B	< 75.0% to 70.0%
B-	< 70.0% to 65.0%
C+	< 65.0% to 60.0%
C	< 60.0% to 55.0%
C-	< 55.0% to 50.0%
D+	< 50.0% to 45.0%
D	< 45.0% to 40.0%
D-	< 40.0% to 35.0%
F	<35% to 0.0%

Institutional Policies and Procedures

UNIVERSITY POLICY ON ACCOMMODATING STUDENTS WITH DISABILITIES: Students requesting accommodation for disabilities must first register with the Disability Resource Center (352-392-8565, http://www.dso.ufl.edu/drc/) by providing appropriate documentation. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. **Accommodations are not retroactive**, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

UNIVERSITY POLICY ON ACADEMIC MISCONDUCT: Academic honesty and integrity are fundamental values of the University community. Students should be sure that they understand the UF Student Honor Code at https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/.

****NETIQUETTE: COMMUNICATION COURTESY:** All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats. http://teach.ufl.edu/wp-content/uploads/2012/08/NetiquetteGuideforOnlineCourses.pdf

COURSE EVALUATION: You will be asked to evaluate the course by completing online evaluations at https://evaluations.ufl.edu/. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results/

ATTENDANCE AND MAKE-UP POLICY: Excused absences and allowances for make-up work are consistent with university policies in the undergraduate catalog (https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx) and require appropriate documentation.

(Approximate) Course Schedule and Calendar

Module/Exam	Starting Date/Exam Date	Topics
Module 1	8/22/18	**Orientation, Math Review, Scientific Notation, Units** *Reading: 1.1-1.8*
Module 2	8/27/18	**Describing Motion in One Dimension** *Reading: 2.1-2.8*
Module 3	9/3/18	**Motion in Two Dimensions** *Reading: 3.1 –3.7*
Module 4	9/10/18	**Newton's Laws of Motion** *Reading*: *4.1-4.8*
Exam 1	**9/19/18** **(in-class)**	**Modules 1-4**
Module 5	9/17/18	**Circular Motion and Gravity** *Reading*: *5.1-5.3;5.5-5.7*
Module 6	9/24/18	**Work and Energy** *Reading*: 6.1,6.3-6.10

Module 7	10/1/18	**Linear Momentum** *Reading: 7.1-7.8*
Module 8	10/8/18	**Rotational Motion** *Reading: 8.1-8.6, 8.8*
Exam 2	**10/17/18** **(in-class)**	**Modules 5-8**
Module 9	10/15/18	**Equilibrium** *Reading: 9.1-9.6*
Module 10	10/22/18	**Oscillations and Waves** *Reading: 11.1-11.9*
Module 11	10/29/18	**Sound** *Reading: 12.1,12.2, 12.4,12.7,12.8*
Module 12	11/5/18	**Temperature and Kinetic Theory** *Reading: 13.1-13.12*
Exam 3	**11/14/18** **(in-class)**	**Modules 9-11**
Module 13	11/12/18	**Heat** *Reading 14.1-14.8*

Thanksgiving Week: No assignments due		
Module 14	11/19/18	**Laws of Thermodynamics** *Reading: 15.1-15.9*
Final Exam	**12/10/18 10:00 am**	**Cumulative across all modules**

Disclaimer: This syllabus represents my current plans and objectives. As we go through the semester, those plans may need to change to enhance the class learning opportunity. Such changes, communicated clearly, are not unusual and should be expected, and this syllabus will be updated accordingly.