SYLLABUS

COURSE DESCRIPTION

Introductory Physics I - PHYS121 is the first semester of calculus-based introductory physics course. The focus is on mechanics.

PREREQUISITE

You must have passed MATH 151 or at least be enrolled in it this semester.
Basic college algebra is used extensively in this course, and the use of calculus will be phased into the course on pace with the MATH151 class.

CLASS MEETING

Lecture: MonTueThu 9:00-11:15, Physics 201
Discussion: TueThu 1:00-2:50, University Center 115D

INSTRUCTOR & TA

Instructor: Dr. Lili Cui lili@umbc.edu

- Office hour: MonTueThu 11:15 – 11:45 & 3:15-3:45, Physics 321
- *Visiting my office hour is the best way of contact*. The time is set aside for you and you will get individual attention. I'd love to use the time to know you in person.
- Physics related questions should be posted on the *Blackboard Discussion Board* instead of personal email so everyone in class can benefit from the discussion.
- Email is a great method for non-physics questions. Please include your full name, course number, and use your UMBC email address to ensure prompt response.

TA: Adam Goad wx55855@umbc.edu
Office hour: TueThu 12:00 – 1:00 & 3:00 – 4:00, University Center 115D
Grader: Rachel Woo rwoo1@umbc.edu

REQUIRED TEXTBOOK & OTHER MATERIAL

- *Physics for Scientists and Engineers*, by Tipler and Mosca, 6th ed., Volume 1
- *SmartPhysics* (electronic pre-lecture and homework assignments)
- *Clicker* Turning Technologies RFC-03 (can be purchased from UMBC bookstore)
- *Calculator*
- *A clear and focused mind, good attitude…*

SUCCESS STRATEGY

- Be sure you have the time required for the course. You are expected to attend all classes – lectures and discussions. In addition, experience shows that success requires at least 12 hours of intensive effort outside of class each week for this intensive summer course. If you typically spend much less than 12 hours of outside study, you are unlikely to be able to learn the material. If you typically spend much more than 20 hours of outside study, you should consult with the instructor about ways to study more efficiently.
- Physics is about understanding, not memorization. Instead of only paying attention to results, it is more important to understand how you get results.
- You have many resources including the textbook, study group, your friends, teaching assistants, me, YouTube and more. Use them wisely.
- It is essential to develop an ability to think and learn for yourself. You must be actively engaged to learn the material, you cannot passively watch me or your classmates and expect to understand the concepts and develop problem solving skills. Cognitive science has proven that the mind must interact to learn.

Success in the course is not "a piece of cake", but can be achieved with effort and the right study strategies.

GRADING POLICY

Type of Assignment	Percentage
Prelecture and checkpoint	5.0%
Class participation (clicker)	5.0%
Homework	15%
Discussion	10%
Quiz	15%
Exam (3 @ 10% each)	30%
Final Exam	20%
Total	100%

I do *not* grade on a curve. Why should I assume that x% of you will be failing this course? If you all do an excellent job, you all deserve an A. How well your neighbor is doing should not affect your grade. Help each other and learn from each other.

90% or Above	A
80% - 89%	B
70% - 79%	C
60% - 69%	D
59% or Below	F

I do not drop any assigned work or exams, nor do I have any extra-credit material. There is no unexcused clicker absence or clicker malfunction for the course.
Check your grades on Blackboard routinely. Please contact me or your TA for any grading questions within one day after grade is available.

PRE-LECTURE

- You are expected to read the related textbook sections and complete pre-lecture assignment via smartPhysics prior to every lecture; it makes for much more efficient learning. The class time will be spent on clarifying and applying the material.
- As a general rule, smartPhysics Prelecture and Checkpoint assignments will be due on Mondays, Tuesdays, and Thursdays at 8:30 AM, though the due dates may be adjusted on occasions.

LECTURES

- Clickers will be used to track attendance and promote active learning by providing instant feedbacks for both the instructor and students. If your clicker does not work or if you forget your clicker, you will not receive attendance credit.
- The lecture PowerPoint slides will be posted on Blackboard.
- Most lectures will begin with a written quiz that's based on the materials from the previous lecture and homework.
- If you miss one lecture, you are responsible for finding out what was done.

DISCUSSION

- The discussion classes are a required part of the course, and you must attend the discussion class in which you are registered.
- This work will be done in small groups (2-3 students), so full attendance is required for every discussion.
- Your discussion instructor will give specific guidelines.

HOMEWORK

- A major part of what I expect you to learn in this class will come as a result of doing homework. You need to fully *understand* how to solve the assigned homework problems to do well on the exams and to succeed in this course.
- Individual homework will be submitted via the smartPhysics online system. As a general rule, assignments will be due on Mondays, Tuesdays, and Thursdays at midnight, though the due dates may be adjusted on occasions.
- Homework questions are not easy and you will find yourself spend a lot of time on them. This is expected. *Don't put off assignments until the night before they are due.* Instead start your homework early enough so you have time to get help.
- Since the main purpose of homework is to prepare you for the exams, keep a careful written record of your work for future studying. Written homework might be collected and graded.

EXAM

- There will be three mid-term exams, see the schedule for the exact dates.
- If you must miss an exam due to officially-sanctioned UMBC activities, illness, family emergency, detention by authorities, or another insurmountable difficulty, contact me as soon as possible. At my discretion, I'll request written verification of the cause of your absence.

FINAL EXAM

The final exam will be comprehensive. There is no make-up exam for the final and no one will be allowed to take the final at a different time.

COURSE WEBSITE

I will put most of my teaching materials in our course site through Blackboard. After log in myUMBC, click on the "Blackboard" tab and then click on "PHYS 121 – SU 2015" in the "My Courses" area. You are responsible for all content delivered via Blackboard. You will use the website for:

- Checking the *Announcements*.
- Accessing *Syllabus* and *Course Documents*
- Checking the *Grades* that you have earned.
- Interacting with the instructor and others online using *Discussion Board*.

TUTORIAL CENTER

The Learning Resource Center supplies free tutors for this and many other 100- and 200-level courses. Please contact at (410) 455-2444 or visit http://www.umbc.edu/lrc/ for more information.

ACADEMIC INTEGRITY

"By enrolling in this course, each student assumes the responsibilities of an active participant in UMBC's scholarly community in which everyone's academic work and behavior are held to the highest standards of honesty. Cheating, fabrication, plagiarism, and helping others to commit these acts are all forms of academic dishonesty, and they are wrong. Academic misconduct could result in disciplinary action that may include, but is not limited to, suspension or dismissal." To read the full Student Academic Conduct Policy, consult the UMBC Student Handbook.

DISABILITIES

If you are taking exams with Student Support Services, I must be informed by them in the first week of the summer session. Also, you must remind me of this via email 24 hours before every exam.

SCHEDULE

Week	Date	Topics	Book Reading[1]
1	July 06 (M)	Introduction and 1-D Kinematics	Chapters 1 & 2
	July 07 (T)	Quiz 1 & 2-D Kinematics	Chapter 3
	July 09 (H)	Quiz 2 & Newton's laws	Chapter 4
2	July 13 (M)	Quiz 3 & Applications of Newton's laws	Chapter 5
	July 14 (T)	**Exam 1** & Work and Energy	Chapter 6
	July 16 (H)	Quiz 4 & Conservation of Energy	Chapter 7
3	July 20 (M)	Quiz 5 & Linear Momentum	Chapter 8:1-2
	July 21 (T)	Quiz 6 & Collisions	Chapter 8:3
	July 23 (H)	**Exam 2** & Rotational Kinematics	Chapter 9:1-3
4	July 27 (M)	Quiz 7 & Rotational Dynamics	Chapter 9:4-6
	July 28 (T)	Quiz 8 & Statics	Chapter 12
	July 30 (H)	Quiz 9 & Angular Momentum	Chapter 10:1-2
5	Aug 03 (M)	Quiz 10 & Angular Momentum Vector	Chapter 10:3
	Aug 04 (T)	**Exam 3** & Simple Harmonic Motion	Chapter 14:1-2
	Aug 06 (H)	Quiz 11 & Simple and Physical Pendula	Chapter 14:3
6	Aug 10 (M)	Quiz 12 & Fluid Statics	Chapter 13:1-3
	Aug 11 (T)	Quiz 13 & Fluid Dynamics	Chapter 13:4
	Aug 13 (H)	**Final Exam**	

[1] Readings are to be done before coming to class.