Physics 122H Introductory Physics II
Preliminary Syllabus

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Office Hours: Mon/Wed/Fri 1:00-2:00

Class Meeting: Lecture: Mon/Wed/Fri 11:00 – 11:50 Engineering 027
Discussion: see Schedule of Classes for discussion times and locations
Semester exams are at 8 am on the dates listed on the *FlipIt Physics* calendar
This is the only use of the Monday 8 am time slot

Office Hours: I will be available in my office on Tuesday, Wednesday, and Friday from 1:00-2:00. You may also make an appointment to meet at another time by contacting me through email. Please come prepared to discuss your question or issue. You may come to the office either individually or in a group.

Course Overview: This course is the second semester of the four-credit, calculus-based, introductory physics courses. In general, this is the intro physics course physical science and engineering majors, not for life-sciences. The list of general topics covered in this class include: thermodynamics, electric and magnetic fields and potentials, Maxwell's equations, and dc and ac circuits. The goals of this course are (1) that you can demonstrate a conceptual understanding of the topics listed above, (2) that you are able to analyze, interpret, and model physical situations using the principles found in the above topics, and (3) that you can communicate your reasoning processes clearly through logical, coherent homework and exam solutions. I expect you to be able to work with these ideas and apply them to various physical situations by the end of the semester.

We will cover the appropriate chapters of the Tipler & Mosca textbook, Chapters 17-30) in the lecture. The schedule of topics for the course is listed on the *FlipIt Physics* site associated with the course. There will be 3 in-class exams and a final exam. The dates of the exams are on the schedule.

The discussion class for this course is a required part of the course. The discussion classes will address particular difficult concepts and will focus on the practical matters of analyzing problems. Working through the discussion material is a part of your final grade for the course.

There are the pre-lecture, animated PowerPoint documents that you need to examine before coming to the lecture. These pre-lecture assignments have a short set of questions that need to be answered and these electronic pre-lecture materials are part of your final grade.

Pre-requisites: PHYS121 and MATH151 are pre-requisites (with a C or better) and MATH152 is a pre-requisite (with a C or better) or co-requisite. No computer programming knowledge is required.

Textbook and Materials: *Physics for Scientists and Engineers*, by Tipler and Mosca, 6th ed., Volume 2: An electronic version of this textbook is available online when you enroll in this course — see the Blackboard site under course materials. For questions about how to obtain and access the online textbook contact the bookstore: textbook@umbc.edu or 410-455-2695.

Automated Response Clicker, Clickers (Turning Technologies RFC-03) will be used in class to record attendance and assess your understanding of the material through in-class questions. Clickers can be purchased from the UMBC bookstore. For questions/problems related to

Clickers submit an RT ticket here RT Ticket under the Computer & Technology Tab or go to the UMBC Bookstore.

No calculators, tablets, computers, or cell phones are permitted during exams.

This next bit is from the bookstore and describes the Course Material Initiative connection for this course. This gives you electronic access to the textbook and the electronic course material at a deep price discount. If you have difficulty with accessing the material, please contact Ms. Erin McGonigle in the Bookstore for assistance.

This course is a CMI Extension course.

A CMI extension course is a second or third semester course for which the first semester is a participating CMI course. This means that if a student has taken the first semester CMI course, they should still have access to their materials for the second and third semester. Any students that are entering the second and third semester without taking the first semester have the ability to OPT INTO CMI, by filling out the OPT IN Form and either returning it to the Bookstore or e-mailing it to textbook@umbc.edu by Feb 10th.

eTextbook - Through this program, all students receive immediate access to an electronic version of the required textbook (e-textbook) via the VitalSource Bookshelf link in Blackboard. You do not need to go to the bookstore or get a special code to access the book. You will have access to the e-book for three full years (from the beginning of the semester) and in most cases, when you download the VitalSource APP you will have perpetual access to the title offline. Make sure to download the VitalSource App for offline use and to maintain perpetual access! **Please access these materials BEFORE Monday, February 10th.**
Publisher Integration - As well as having automatic access to an electronic version of the required textbook, CMI also gives you access to publisher integrations. **Please access these materials BEFORE Monday, February 10th.**

Publisher Integration - As well as having automatic access to an electronic version of the required textbook, CMI also gives you access to FlipIt Physics. Please note the course is designated PHYS122S20 to access the course itself on FlipIt Physics.
Please make sure to access this prior to the add/drop date February 10th.

Library - There are copies of the textbook on reserve in the AOK Library.
Please visit the CMI webpage, bookstore.umbc.edu/cmi, for more information!

***FliptIt Physics*:** We will use an on-line system called *FliptIt Physics*. This system has many features and it includes pre-lecture material, pre-lecture questions, and electronic homework. Instructions on how to access *FlipIt Physics* are available on the Blackboard site. For questions about initial sign-on and accessibility contact *FlipIt Physics*: 1-800-936-6899 or FlipIt Physics Help. Please note that you can start off in *FlipIt Physics* with a 30-day, no-pay, grace period, however you need to pay for it either through their website or at the bookstore prior to the end of that period. If you fail to pay for it before your grace period expires all your material and grades for that part of the course will be lost. You need the course access key for this course: **Phys122S20** The course is now accessible, although the material for each assignment is not available until approximately a week before the due date. You need to enter an individual identifier and you must use your student ID number: the two-letter, five-digit on your student id card. Please be careful as you cannot change this once you have registered in *FlipIt Physics*.

Clickers: We will use the Turning Technology clickers (Turning Technologies RFC-03) during the lectures. Clickers can be purchased from the UMBC bookstore. For questions/problems related to Clickers submit an RT ticket under the Computer & Technology Tab or go to the UMBC Bookstore. You need to purchase or rent these. Once you have your clicker it must be registered in Blackboard for you to receive credit for answering questions in the lecture. There is a file to help you register

your clicker and prepare it for class located on the course Blackboard site under Other Bb Tools on the left sidebar. Also you can go to the UMBC Help page for clickers at:

https://wiki.umbc.edu/pages/viewpage.action?pageId=66159040

Please have your registered clicker with you at the first lecture. There will be graded clicker questions at the first lecture.

Grading:

3 one-hour in-class exams	45%
Final exam	20%
Electronic homework problems	15%
Written homework	5%
Discussion class	5%
Pre-lectures and Checkpoints	5%
Clicker response questions	5%

A: 90-100 B: 80-90 C: 70-80 D: 60-70 F: 0-60

I do not grade on a curve, I do not drop any assigned work or exams, nor do I have any extra-credit material. There is one unexcused clicker absence or clicker malfunction for the semester. Note that the electronic homework has a due date for full credit and a one-day-late date where you receive 75% credit. After one day, there is no credit for late electronic homework.

Textbook: Please do not ignore the textbook. You must read the appropriate sections of the text prior to the lecture. The best idea is to read the entire chapter first to see the entire picture. Then re-read the sections that will be covered in the lecture. After the lecture, look at the examples in the textbook that are part of the material covered. Knowing how to do all of the textbook example problems is helpful in doing the homework problems and the exams problems.

Pre-Lectures: These are very well done, animated, PowerPoint presentations with voice-over. It is important that you go through these pre-lectures when they are assigned, including answering the embedded questions. These and reading the textbook sections prepare you for the lecture. There are a set of questions that are separate from the pre-lectures and these are known as the pre-flight or Checkpoint questions. They ensure that you think through the material you have viewed and give me a chance to see the class' general understanding of the pre-lecture concepts.

Lectures: You are required to read the textbook material before coming to class. By this I do not mean that you should skim the material. You should read it, think about it, and formulate questions about the material. Cell phone, tablet, and laptop use during the lectures is prohibited. I expect class participation during the lecture. I hope you will quickly recognize the difference between a real question to the class and a rhetorical question, and respond accordingly. There will be clicker questions in many of the classes on the reading material and material we have already discussed, and questions meant to stimulate an active learning environment. Thus, you need to register your clicker in the Blackboard system to receive credit.

Discussion Classes: The discussion classes are a required part of the course, and you must attend the discussion class. There are no exceptions to this rule and you will not receive credit for your work if you are not attending the class. The work in the discussion class will be done in small groups (2-3 students), and so it is critical that you are not late for this class. If you arrive more than 5 minutes late you will lose 10% of the discussion class grade for that day. You can use a calculator and any notes you have, but you are not allowed to use any other electronic devices for the discussion class.

Homework: This is one of the most important aspects of this class for learning the material. Although you will learn a lot from my lectures and from studying the textbook, the only way to understand and integrate the material to the level that is expected is by personally working through the important material and applying it to various situations (problems). At times, the homework will be very challenging. Remember that it is the only time I can ensure that you examine a complicated problem. There is not enough time for this on exams. The homework is listed on the *FlipIt Physics* calendar.

Much of the homework is submitted electronically through the *FlipIt Physics* website. You are responsible for checking the *FlipIt Physics* calendar regularly to ensure you do not miss any of the assignments. Thus, you need to make sure that you have good access to the internet via a computer. This is available in the library and in the computer labs across campus, as well as your own home internet access. Most of the electronic homework problems are broken into multiple sections. You have five chances at supplying the correct answer in each part and you will not lose credit for the first attempt. It is good practice to write out the solution to each of the electronic homework problems on paper before submitting the answer, and then keeping the written solution to use in studying for exams.

There is written homework that is due prior to the beginning of the lecture on the days listed on the *FlipIt Physics* calendar. These assignments will be posted on the Blackboard site under Written Homework Assignments. Write neatly, staple the pages together, begin each problem on a new page, and make sure that your name is on each page. If it is illegible or does not have a logical flow that can be followed, it will not be accepted. There is no provision for late homework.

I imagine that you will get together on a regular basis in small groups. This is a good tool if used properly and a disaster if used incorrectly. Once you have done your own studying and worked out the problems, it is good to discuss the ideas with others. Please do not use it without working on the problems on your own. If you receive help on the written homework, please reference this in the margin of the work. Each person must submit the written homework in their own hand, and it must be their work.

Tutoring Help: The Academic Success Center has free tutors for this and many other 100- and 200-level courses. They are located on the third floor of Sherman Hall and more information is available at: http://lrc.umbc.edu

There is a Supplemental Instruction (SI) leader for the PHYS122 large-lecture course. They will make announcements on Blackboard to tell you where and when they will have meetings. These sessions have been extremely useful for students in the past semesters. These meetings will have problems that you work through with the assistance of the SI leader.

The Physics Department has a Physics Tutorial Center in Physics 225A that offers walk-in assistance Monday through Thursday afternoons. The schedule for the tutorial center is posted outside Physics 225A.

Other Policies: Do not forget to bring your clicker to every lecture class. You have two unexcused clicker absence or malfunction for the semester.

There are no discussion class make-ups.

If you will miss an exam due to a University-policy accepted absence, you must inform me of this at least two weeks before the exam.

If you are taking exams with Student Disability Services, they must inform me in the first two weeks of the semester. That requires you to inform them in the first week of the semester. Also, you must remind me via email that you need an exam given to them 48 hours before every exam.

If you have an issue with a grade on an exam, you have 48 hours after the exams are returned to contact me via email to resolve the issue.

Academic Integrity: I feel obligated to ensure that students know the repercussions of cheating. If you are found cheating, you will receive a zero for that work, and you will be reported to the Academic Conduct Committee. The University has a website that addresses the concepts of academic integrity: http://www.umbc.edu/undergrad_ed/ai/. Here is a statement from the Provost's Office:

UMBC Statement of Values for 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 UMBC policies.

Final Comments: I am always excited to teach this class. I have high expectations for all of us in this class. You will need to work hard to do well in this course, and I expect that you will work 8-12 hours outside of class per week on this course. This includes preparing for lecture, reviewing material, doing the assigned homework, and studying for exams. This course is not about memorization, but understanding and applying knowledge. Remember that getting help when you are having difficulty is part of life, but that exams are not a team sport. You must know the material. I promise you that I will be working just as hard as you to present the material and help you to understand it. Please, do not leave two days go by where you are in the dark about some concept or some method of approaching problems. See me for help.