Physics 111: Introductory Physics I Syllabus
Fall 2014

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Office Hours: Monday 10-12
Tuesday 9-10
Wednesday 10-11
Thursday 10-11

Text: Physics for Scientists and Engineers, 13th edition by Young and Freedman, ISBN# 0321696867
DO THE ASSIGNED READINGS PRIOR TO CLASS- this will allow you to become familiar with the terms and topics and have questions about the material prepared before lecture

Course Description:
An introduction to the fundamentals of physics, specifically heat and thermodynamics, waves and oscillations, and mechanics in one and two dimensions, including kinematics, dynamics, rotational motion, energy and conservation laws and statics.

Course Goals:
The main goal of this course is for students to gain a comprehensive understanding of basic concepts and laws of physics. Students will develop a mathematical ability to describe these laws using formulas and equations that allows the student to perform calculations and solve problems relating to the course. The lab element of the course will provide a hands-on methodology of testing and analyzing these principles through laboratory work.

Grading:
Your letter grade is determined by a minimum weighted average which is as follows: A/93, A-/90, B+/87, B/83, B-/80, C+/77, C/73, C-/70, D+/67, D/63, D-/60, F/0. The breakdown of the grading will be as follows:

Exam 1	10%
Exam 2	10%
Exam 3	10%
Homework	15%
Attendance	5%
Quizzes	10%
Labs	25%
Final	15%

Course Materials:
All course materials will be made available on blackboard. These materials include this syllabus, laboratory procedures, practice problem sets, practice exams, and any solutions I may provide.

Exams and Quizzes:
There will be three exams during the semester. Each will be 50 minutes long. There will also be a final exam which will be cumulative. The exams will include problem solving questions, but there will also be conceptually based questions to be answered with words. You will be able to use an equation sheet that will be provided for you. You will not be allowed to use any outside materials (notes, books or cell phones) during exams. **The final exam will be cumulative.** Ten minute quizzes will be given on a regular basis. They will be based on exam questions and will be given under the same conditions as exams. The same equation sheet used for exams will be used for quizzes. You will be allowed **ONE** make-up quiz per semester if you miss class or if you arrive late to class after the quiz has started. The make-up quiz **must be taken the same day** that the original quiz is administered.

Homework:
Homework assignments will be given weekly and will be **due at the beginning of class on the day specified in the syllabus**. You can receive full credit up until 7:50 AM the day the assignment is due. You will still be able to work on assignments after the due date, but some credit will be lost. After 7:50

AM on the due date you will lose 2% for each hour after this deadline. For any submissions over 24 hours after the deadline, you may still earn up to 50% of the credit for the question until the last day of class. You will be allowed to attempt homework questions up to 10 times. After this you will receive no credit for the question. If you do not understand or are having trouble with the questions, save some of your attempts for after you have been to class or gotten help, some points is better than no points. You are encouraged to work with other students on the assignments, but each student must complete and submit their own work. Time will be available for questions about homework during the problem solving sessions if you are having trouble with the homework questions. Homework is very important. There is a strong correlation between completing the homework assignments and doing well on quizzes and exams.

Attendance:
Attendance is mandatory and counts towards your final grade. If you cannot attend class for any reason, it is your responsibility to contact me with the reason for your absence and to obtain any material you missed. An absence will be considered excused and not count against your attendance grade if it is due to reasons such as illness, death in the family, etc. **Missed quizzes and exams will only be excused in the event of excused absences, in which case another time can be scheduled to take the exam.** This does not count as the one make-up discussed under the exams and quizzes section.

Important Notes:
Education is all about open communication. My responsibility is to communicate information and problem solving techniques to you. However, communication works both ways. You must also communicate to me if are having trouble with or questions about any material. Your questions are always welcome. I do not know what you do not know. The explanations and examples I give make perfect sense to me, but you may need further clarification. To that end, please feel free to email me or attend my office hours with any questions you may have. If you cannot attend any of the available office hours, please email me and we can schedule another time to meet.

The equation sheet will only help you if you know the meaning of all the variables and the proper context in which a specific equation can be used. E does NOT always mean energy and velocity may be determined using different equations in different situations. It is very important that you review and become familiar with the equation sheet before any quiz or exam.

Lab Schedule:
Date   Topic

Date	Topic
8/25-8/26	Log onto homework, Math review, and Error Analysis Exercise
9/1-9/2	Graphing Using Graphical Analysis and Graph Matching
9/8-9/9	Picket Fence Free Fall
9/15-9/16	Newton's Second Law of Motion
9/22-9/23	Kepler's 3rd Law: Determining the Mass of Jupiter
9/29-9/30	Conservation of Energy of the Simple Pendulum
10/6-10/7	Conservation of Momentum in Two Dimensions
10/13-10/14	**FALL BREAK**
10/20-10/21	Rotational Motion and Moment of Inertial
10/27-11/28	Torsion
11/4-11/5	Liquid Viscosity
11/10-11/11	Simple Harmonic Motion
11/19-11/20	Speed of Sound from Resonance Tube
11/24-11/25	Standing Waves on a String
12/1-12/2	Catch Up/ Review

Class Schedule

Date	Topic	Reading before class	Due
8/25	Kinematics in 1-D: Displacement, Speed, Velocity		
8/27	Kinematics in 1-D: Acceleration and Free Fall	2.1-2.7	
8/29	Vector Review	3.1-3.3	
9/1	Vector Review	3.4-3.6	HW 1
9/3	Kinematics in 2-D: Vectors and Projectile Motion	3.7-3.9	Quiz 1
9/5	Dynamics: Newton's 1st and 2nd Laws	4.1-4.4	
9/8	Dynamics: Newton's 3rd Law and Free-Body Diagrams	4.5-4.8	HW 2
9/10	Using Newton's Laws: Friction	5.1	Quiz 2
9/12	Using Newton's Laws: Circular Motion	5.2-5.4	
9/15	Gravitation: Newton's Law of Universal Gravitation	6.1-6.3	HW 3
9/17	Gravitation: Kepler's Laws	6.4-6.6	Quiz 3
9/19	Work and Energy	7.1-7.4	
9/22	**EXAM 1**	**CH 2, 3, 4, 5**	
9/24	Conservation of Energy: Potential and Mechanical Energy	8.1-8.4	HW 4
9/26	Conservation of Energy: Dissipative Forces	8.5-8.8	
9/29	Linear Momentum: Conservation of Momentum	9.1-9.3	HW 5
10/1	Linear Momentum: Collisions	9.4-9.6	Quiz 4
10/3	Linear Momentum: Center of Mass	9.7-9.9	
10/6	Rotational Motion: Kinematics	10.1-10.3	HW 6
10/8	Catch up/ Review		
10/10	**EXAM 2**	**CH 6, 7, 8, 9**	
10/13	FALL BREAK		
10/15	Rotational Motion: Torque and Dynamics	10.4-10.6	
10/17	Rotational Motion: Moment of Inertia and Energy	10.7-10.9	
10/20	Angular Momentum: Rotating Objects	11.1-11.3	HW 7
10/22	Angular Momentum: Torque	11.4-11.6	Quiz 5
10/24	Static Equilibrium: Conditions of Equilibrium	12.1-12.3	
10/27	Fluids: Phases and Pressure	13.1-13.6	HW 8
10/29	Fluids: Buoyancy	13.7-13.8	Quiz 6
10/31	Fluids: Bernoulli's Principle	13.9-13.10	
11/3	Oscillations: Simple Harmonic Motion	14.1-14.3	HW 9
11/5	Oscillations: Pendulum	14.4-14.6	Quiz7
11/7	Oscillations: Damped Harmonic Motion	14.7-14.8	
11/10	**EXAM 3**	**CH 10, 11, 12, 13**	
11/12	Wave Motion: Wave speed and Energy	15.1-15.3	HW 10
11/14	Wave Motion: Wave Equation and Superposition	15.4-15.6	
11/17	Wave Motion: Reflection, Transmission and Interference	15.7-15.9	HW 11
11/19	Wave Motion: Standing Waves and Resonance		Quiz 8
11/21	Sound: Waves. Speed, Intensity	16.1-16.3	
11/24	Sound: Vibrating Strings, Air Columns and Beats	16.4-16.6	HW 12
11/26	THANKSGIVING BREAK		
11/28	THANKSGIVING BREAK		
12/1	Sound: Doppler Effect	16.7-16.9	
12/3	Sound: Sonar		HW 13
12/5	Review/Catchup		Quiz 10

What to Do if You Have Questions or Need Help:
- ❀ Ask me before or after class
- ❀ Visit my office hours
- ❀ Email me at malendar@moravian.edu
- ❀ Ask another student
- ❀ Work in a group
- ❀ Attend the Society of Physics Students tutoring
- ❀ Get at tutor (I can help you get in contact with a tutor)

Disabilities and Medical Conditions:
Moravian College adheres to the principles and mandates of the Americans with Disabilities Act of 1990 and the Rehabilitation Act of 1973.

Students who wish to request accommodations in this class for a disability should contact Elaine Mara, assistant director of learning services for academic and disability support located on the first floor of Monocacy Hall, or by calling 610-861-1401. Accommodations cannot be provided until authorization is received from the Academic Support Center.

Special classroom set-ups, alternate testing, physical plant (campus) alterations, and other accommodations for students with documented disabilities are available on a case-by-case basis. It is the responsibility of students with disabilities to self-identify and request accommodation through the appropriate office.

It is the responsibility of the student to request accommodation well in advance of the need in order to give the College a reasonable amount of time to evaluate the documentation and implement the request. Classroom accommodation requiring notification to faculty must be requested for each semester for which it is needed.

Please see Disability Support Services in the Campus Offices and Services section elsewhere in the Moravian College Student Handbook for further information, and check the College's website for periodic updates concerning services for students with disabilities.

Academic Honesty Statement:
Academic integrity is the foundation on which learning at Moravian College, Moravian Theological Seminary, and the Comenius Center is built. Students are expected to perform their academic work honestly and fairly. In addition, students should neither hinder nor unfairly assist the efforts of other students to complete their work successfully.

In an academic community, students are encouraged to help one another learn. Because no two students learn in exactly the same way or absorb exactly the same things from a lecture, students are encouraged to study together. The boundaries on what is or is not acceptable work may not always be clear; thus, if at any point in academic work at Moravian, students are uncertain about their responsibility as scholars or about the propriety of a particular action, please see Academic Honesty in the Academic Life section elsewhere in the Moravian College Student Handbook for further information, and check the College's website for periodic updates.