Physics 112: Introductory Physics II Syllabus

Spring 2014

Dr. Ruth Malenda
Office: Collier Hall of Science 110
Phone: 610-861- 1639
Email: malendar@moravian.edu

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

Text: University Physics, 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 Fridays** (or as specified in the syllabus). You can receive full credit up until 7:50 AM the day the assignment is due.

Until the last day of class, any late assignments may be submitted and earn up to 50% of the credit. 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 summaries at the end of the chapters are an excellent resource to help you keep in mind the important concepts and equations covered in each chapter.

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.

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)

Class Schedule

Date	Topic	Reading before class	Due
1/13	Geometric Optics, Reflection		
1/15	Refraction, Thin Lenses	34.1-34.4	
1/17	Ray Tracing		
1/20	MARTIN LUTHER KING DAY		
1/22	Wave Nature of Light, Refraction	33.1-33.3	
1/24	Dispersion, Polarization, Huygen's Principle	33.4-33.7	
1/27	Interference	35.1-35.3	HW 1
1/29	Diffraction	36.1-36.4	Quiz 1
1/31	Diffraction Grating	36.5	
2/3	Electric Charge and Coulomb's Law	21.1-21.3	HW 2
2/5	Electric Fields and Electric Forces	21.4-21.5	Quiz 2
2/7	Electric Field Lines and Dipoles	21.6-21.7	
2/10	**EXAM 1**	**CH 33, 34, 35, 36**	
2/12	Gauss's Law	22.1-22.3	HW3
2/14	Gauss's Law	22.4	
2/17	Conductors	22.5	HW 4
2/19	Electric Potential	23.1-23.3	Quiz 3
2/21	Equipotential Surfaces and Field Gradients	23.4-23.5	
2/24	Capacitance	24.1-24.3	HW 5
2/26	Catch up/Review		Quiz 4
2/28	**EXAM 2**	**CH 21, 22,23**	
3/3-7	SPRING BREAK		
3/10	Dielectrics	24.4-24.6	HW 6
3/12	Current	25.1-25.3	Quiz 5
3/14	Circuits	25.4-25.6	
3/17	Cricuits		HW 7
3/19	DC Circuits	26.1	Quiz 6
3/21	Kirchhoff's Rules	26.2	
3/24	Magnetism	27.1-27.2	HW 8
3/26	Magnetic Fields and Charged Particles in Magnetic Fields	27.3-27.5	Quiz 7
3/28	Magnetic Forces on Currents and Motors	27.6-27.8	
3/31	**EXAM 3**	**CH 24, 25, 26**	
4/2	Magnetic Field Due to Current	28.1-28.4	HW 9
4/4	Magnetic Field Due to Current		
4/7	Ampere's Law	28.5-28.8	HW 10
4/9	Electromagnetic Induction	29.1-29.3	Quiz 8
4/11	Electromagnetic Induction	29.4-29.6	
4/14	Electron Properties/ Photoelectric Effect	Supplemental Reading	HW 11
4/16	Wave Particle Duality	Supplemental Reading	Quiz 9
4/18	EASTER BREAK		
4/21	EASTER BREAK		
4/23	Atomic Spectra/ Bohr Model	Supplemental Reading	HW 12
4/25	Review/Catchup	Supplemental Reading	Quiz 10

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 at 1307 Main Street, or by calling 610-861-1510. 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.