

Phys 1401- 015
General College Physics (Gen Phy 1)
Summer 2010
Rio Grande Campus

Section # 015 and Synonym: 12139

Meeting Times and Place: Lecture: TTh 10:00-11:50 A.M., **Room 331**
Lab: TTh 12:00-1:50 P.M., **Room 326**

Credit: 4 credit hours.

Instructor: Dr. Michael McGraw

Office: Room 325.0

Office Hours: TTH 9:00 –10:00 A.M.

Phone: Office: 223-3303 (Only during Office Hours);

Web Site: www.austincc.edu/mmcgraw

E-mail Address: mmcgraw@austincc.edu

Textbook: Physics, 2nd Edition, Giambattista, Richardson & Richardson

Prerequisites: A grade of “C” or better in MATH 1314, College Algebra, or equivalent.

MATH 1314 COLLEGE ALGEBRA (3-3-0). A course designed for students majoring in business, mathematics, science, engineering, or certain engineering-related technical fields. Content includes the rational, real, and complex number systems; the study of functions including polynomial, rational, exponential, and logarithmic functions and related equations; inequalities; and systems of linear equations and determinants. .

All students will have one week to produce a copy of proof that they have satisfied the course prerequisites. If you do not have the prerequisites, you will be withdrawn from the course.

Grading: There will be three (3) exams and a final exam. The exams will account for 30% of your grade and the final exam will account for 20%. The lab will account for 25%. The homework will account for 10%. Quizzes, class work and other activities will account for 15%. Class attendance is accounted for as part of this grade.

The distribution of grades is as follows:

90-100	= A
80-89	= B
70-79	= C
60-69	= D
59 and below	= F

Important Note: You must earn a grade of “C” or better in the laboratory portion of the course as well as a grade of “C” or better in the lecture portion of the course in order to earn a grade of “C” or better in the course. The grade in each portion, either lecture or laboratory, of the course will be as outlined in the grading system in the syllabus. The determination of a “C” grade will be as stated under the grading scale in the syllabus. The Lecture components include the Homework, Exams, Quizzes, in class assignments, attendance and participation.

Course Description: Algebra-based study of mechanics, energy, momentum, waves, temperature and heat. This is the first half of the algebra-based PHYS 1401/1402 sequence.

Subject Matter: In this course we will cover chapters 1-15 with a few sections in these chapters being omitted. For more detail see the list of required topics and the course outline/calendar given as part of this handout.

Study Tips – <http://www.oberlin.edu/physics/dstyler/StudyTips.html>
Keep Up; Read Aggressively; Listen Aggressively

Course Objectives

1. To further develop the concepts and language of physics.
2. To further develop problem-solving methodologies involving mathematics.
3. To further develop the use of graphs and charts to communicate.
4. To strengthen the concepts and ideas introduced in class and show the link between theory and experiment.
5. To further develop experimental techniques.
6. To further develop the concept of experimental design.
7. To develop technical writing through the process of writing formal lab reports.
8. To develop critical thinking.

Course Rationale

Generally, our courses are intended to help students fulfill degree requirements in science, to prepare students for further studies, or both. This course is intended for science majors and engineers. It is important to re-emphasize the following: since our courses are intended for transfer to a four-year institution, they will be taught at the University level.

Course Outline / Calendar: A course outline / calendar is attached as part of this syllabus. Every attempt will be made to maintain this schedule. Please note: schedule changes may occur during the semester. Any changes will be announced in class.

Methodology: Lecture/Laboratory. The lectures will consist of demonstrations, explanations of the basic ideas and physical concepts, techniques for solving problems and class discussions. Some problem solving sessions will also be included and in these the student will be an active participant.

Homework: About 12-15 problems will be assigned from each chapter. The homework will be due at the beginning of the class on the due date. Working problems is the single most important way to learn and apply the basic ideas you are studying in this course and the best way to prepare yourself for the exams.

Important Note on Homework

<http://www.oberlin.edu/physics/dstyler/SolvingProblems.html>

Rules for Doing Problems

1. Read the question carefully.
2. Draw the appropriate diagram and label it.
3. Write down the given information.
4. Write down what you are trying to find.
5. Write big so your work can be read easily.
6. Maintain the equality - write each step on a new line.
7. Show all your work – don't skip steps.
8. Make sure you have answered the question.
9. Don't forget the SI units.
10. Round off answers to three significant figures and use proper scientific notation.
11. Draw a box around the answer(s).

After you read the question you might not remember how to solve the problem. Never mind – just start writing. A blank sheet of paper is not very inspiring – fill it up. Go on to step 2 and start drawing and labeling the diagram – this will start your mind going and you will build up some momentum and the paper won't be blank anymore.

By systematically approaching the solution of the homework problems you are furthering your understanding of the material. This is the best way to ensure success in this course. Homework not done according to the above rules will not be graded.

Grading the Homework: Homework assignments are due at the beginning of the class period on the due date. Two problems, from each assigned homework set, will be chosen randomly and graded. The same two problems will be graded on everyone's paper for that assignment. These two problems will be given a maximum credit of five (5) points each. An additional ten (10) points per assignment will be given if all of the problems are attempted and a good effort has been made to solve them. Each homework assignment is worth a maximum of twenty (20) points.

IMPORTANT: The solution of homework problems should be the result of your own work. If I feel that your homework solutions are copied from another student, from a solution manual you have in your possession or from some solutions available online, your homework will not be graded and you will get a zero for that homework set. I will point this out to you and will attempt to resolve the matter to the satisfaction of everyone. In short, copying homework (or anything else concerning this course) will not be tolerated and will be dealt with according to the rules of the College.

Late Homework Policy: Late homework will be accepted the next class (following the due date) with a 20% penalty. No late homework is accepted after that.

Laboratory: This semester you will do twenty-two experiments. You must do all the experiments and your lab grade will be based on these experiments. You will be given a separate write up that describes each of the experiments. You will be given another handout that will outline the format for the lab reports.

Lab reports are due at the beginning of the lecture on the due date. A missed experiment must be made up the following Friday, which is the make-up day. Lab reports not turned in on time are considered late. Late lab reports will be accepted

until the next class meeting. No lab reports will be accepted after that. **Late lab reports will receive only 80% of the full credit.**

The labs are open on Friday from 9:00 A.M. until 12:00 P.M. However, Friday IS NOT an alternative to the regular lab time. **You may only make up two (2) labs.**

Please contact the Lab personnel in advance to let them know you will be making up a missed lab. One of the lab assistants will help you with the set-up so that you can do the experiment. When you make up an experiment, you must write down the date, the time, the room number and the name of the assistant who helped you and supervised the experiment and then have him/her sign your data sheet. Also, please sign the log sheet to indicate that you were in the lab on that Friday. You must include with the lab the documentation that shows the absence was due to exceptional circumstances.

Exams: The exams will be composed largely of problems to be solved, similar to the homework. Credit for the solution of a problem is usually given for the procedure including the diagram, the basic equation which forms the starting point of the calculations, and some reasoning, explanation or justification of the steps or answers.

The Final Exam is a cumulative exam and will cover all the material covered during the semester.

Missed Exams: You should make every effort to ensure that you do not miss an exam for this course. If you know that you will miss an exam, due to events beyond your control, you must contact the instructor prior to the exam if at all possible. A make up exam will be given at the discretion of the instructor.

Participation: Physics is a participatory activity and you are the main player in that activity. My responsibility this semester is to help YOU learn physics. I can explain it to you, but I can't make you understand it. The understanding part is up to YOU.

Participation includes:

- Arriving at class on time
- Being prepared
- Taking part in class discussions
- Class quizzes
- In class assignments

If a lecture or laboratory session is missed the student is still responsible for the material that was covered.

The time requirement for this class is about 15 hours per week. This much time is needed to study the material carefully and do the homework and the lab. You need to make sure this much time is available in your schedule. If your schedule does not allow you to spend this much time on this course this semester, I strongly urge you to drop this course. Take it when you are not so busy with other responsibilities and you can dedicate the needed time for it. The time you spend studying and doing homework in this class is the single most important factor in deciding how well you do in this class.

COURSE POLICIES

- 1. Attendance policy:** (a) Quizzes and other class work and activities will count for 15% of the credit. This includes class attendance. If you miss a class, you cannot make up the work given on that day and the credit that goes with it. The only exceptions are documented absences due to sickness or other extraordinary circumstances. You must show documentation (a doctor's report is an example) which shows that you could not have attended class on that day. (b) *If you miss more than four (4) classes, you may be withdrawn from the course unless you missed class due to an exceptional circumstance.*
- 2. Withdrawals:** This is your responsibility. The last day to withdraw is **Monday, August 9th.**
- 3. Incomplete:** See the incomplete rule in the College catalog. Generally I do not give incompletes.
- 4. Safety Statement**

"Health and safety are paramount values in science classrooms, laboratories and field activities. You are expected to learn, understand and comply with ACC environmental, health and safety procedures and agree to follow the ACC science safety policy. You are expected to conduct yourself professionally with respect and courtesy to all. Anyone who thoughtlessly or intentionally jeopardizes the health or safety of another individual will be immediately dismissed from the day's activities, may be withdrawn from the class, and/or barred from attending future activities. Specific safety training will take place before most activities. If you are late and miss the training, you will not be able to participate in the activity. You can read the complete ACC science safety policy at: http://www2.austincc.edu/sci_safe/."
- 5. Scholastic Dishonesty:** "Acts prohibited by the College for which discipline may be administered include dishonesty, including but not limited to cheating on an exam or quiz, plagiarizing and unauthorized collaboration with another in preparing outside work. Academic work submitted by students shall be the result of their thought, research or self-expression. Academic work is defined as but not limited to, tests, quizzes, whether taken electronically or on paper; projects, either individual or group; classroom presentations; and homework."
- 6. Academic Freedom:** Students are free to disagree with instructors on matters of opinion or personal philosophy, and will incur no penalty for doing so. However, instructors will judge work based upon its relation to the current state of mainstream scientific fact and theory. Students are allowed to voice opinions, concerns, complaints and suggestions to the instructor. However, it is up to the instructor to decide how to use the students' comments to meet the class's best interests.
- 7. Student Discipline:** Matters of student discipline will be adjudicated by the instructor on a case-by-case basis, in conjunction with the Department Head or the Dean. Student may consult with the Office of Students' Services or the Assistant Dean on these matters.
- 8. Office for Students with Disabilities:** "Each ACC campus offers support services for students with documented physical or psychological disabilities. Students with disabilities must request reasonable accommodations through the Office for Students with Disabilities on the campus where they expect to take the

majority of their classes. Students are encouraged to do this three weeks before the start of the semester.”

“Students who are requesting accommodation must provide the instructor with a letter of accommodation from the Office of Students with Disabilities (OSD) at the beginning of the semester. Accommodation can only be made after the instructor receives the letter of accommodation from OSD.”

- 9. Student Services:** The web address for student services is :

<http://www.austincc.edu/rss/index.htm>

The ACC student handbook can be found at:

<http://www.austincc.edu/marketng/pdf/HBK.pdf>

- 10. Instructional Services:** The web address for instructional services is:

<http://www.austincc.edu/evp/newsemester/index.htm>

- 11. Cell phones:** As a courtesy to your instructor and your classmates, please make sure that your cell phone is turned completely off before class. If you are expecting an urgent phone call, then please place the phone in a silent mode. Cell phone calculators or other cell phone applications may not be used during exams and quizzes.