 **Dr. Andy Puckett**

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**PRINCIPLES OF PHYSICS 1**

**PHYS 2211 – Spring 2020 – JORDAN 213**

Tue./Thu. 11:00am–12:15pm

**Office Hours:** Mon. 10:30a – 12:00p Jordan 206

Tue. 1:30 – 2:30p Jordan 206

Wed. 12:00 –1:00p Jordan 206

*I am also available by appointment, as my schedule permits.*

**Course Description**

An introductory course which will include mechanics (kinematics, dynamics, work and energy, momentum and collisions, and rotational motion and statics), and may also include thermodyn-amics and waves. Elementary calculus will be used.

**Prerequisites:** MATH 1131 with grade of “C” or better

**Corequisites:** PHYS 2311 (lab)

**Necessary Materials:**

* Free Textbook: <https://openstax.org/details/books/university-physics-volume-1>
* Homework System: <https://theexpertta.com> (see below for details)
* A device to access the **Kahoot app** or [https://kahoot.com](https://kahoot.com/)
* A calculator with “trig” functions.

**CougarVIEW / Desire2Learn**

The syllabus, contact info, announcements, grades, and other useful items will be posted on this course’s CougarVIEW/Desire2Learn (D2L) website. For CougarVIEW technical problems, visit the GeorgiaVIEW D2L Help Center at <https://d2lhelp.view.usg.edu> or call the CSU Help Desk at 706-507-8199. Course announcements will also be emailed to your primary electronic address. You are responsible for the content of all announcements, whether electronic or in-class.

**The *ExpertTA* Website**

All homework assignments and reading quizzes will be completed at the *ExpertTA* website, <https://theexpertta.com>.The cost is $32.50 if you buy directly on their website, but you may pay a different amount if you buy through the bookstore. The student registration link for my course is <http://goeta.link/USW12GA-DFFAFD-1ZP>, where you will then input your CSU email address and a password to create your account. When asked for your Student ID/NO, please input your CSU “909” number to simplify integration with our CougarView gradebook. Your registration will be complete once you’ve input either a credit card number or a bookstore access code, or selected a 2-week free trial. Please contact me immediately if you have difficulty registering, or check online at <https://theexpertta.com/wp-content/uploads/2017/01/StudentRegistration-10.16.pdf> for additional instructions.

**Lecture Learning Objectives:**

These objectives are the minimum expectation I have for students who pass this class with a “C”. If you cannot perform to this level, you have not earned a passing grade. Students will be able to:

* Create and analyze graphs to understand physical situations.
* Use explicit problem-solving skills, particularly in analyzing a description of a physical situation. Evaluate whether an answer to a problem is a realistic answer.
* Demonstrate proficiency in using math skills as they apply to physics and problem solving.
* Apply physics laws and concepts to unfamiliar contexts. Demonstrate understanding of physics concepts, to analyze a physical situation in a qualitative and/or quantitive manner.
* Explain their physical reasoning in a clear and concise manner, both in oral and written format. Explanations may be quantitative or qualitative.
* Demonstrate basic proficiency in concepts of kinematics, dynamics, work, energy, momentum, collisions, rotational motion, and statics. This means knowing when to use which principle, as well as the use of that concept.

**General Education Learning Outcomes (Area D):**

This course will improve your critical thinking skills as you learn how to analyze the basic elements of a theory, learn how to synthesize information into more complex relationships, and learn how to make judgments about the value of information, arguments and methods by examining how data is gathered and interpreted and how the soundness of conclusions is assessed. Through the listed objectives, successful students will be able to:

* Demonstrate knowledge and understanding of key principles, theories, facts and current hypotheses in one or more areas of natural science (*i.e.,* physics).
* Demonstrate knowledge and understanding of scientific reasoning and how new knowledge is acquired in one or more areas of science (i.e., physics), including the selection and use of appropriate methods, tools, and technology *for answering questions and solving problems.*
* Relate scientific principles and methods to problems that are important to individuals and societies.

**Grading Scale:**

A 90% – 100%

B 80% – 89%

C 70% – 79%

D 60% – 69%

F 0% – 59%

**Final Grade Breakdown:**

Homework (online) 18%

5 Quizzes (10% ea) 50%

Final Exam 20%

Attendance/Participation 10%

Math Pre-Test 2%

**Grading Policies:**

Your final grade will be calculated as a weighted average, based upon the weights and letter grade assignments listed above. Typically there is no need to adjust this grading scale. However, should it be necessary, scales may be adjusted downward, but will never be shifted upward. You may also use these rules to calculate your grade at any point during the term. Individual assignment scores will be posted online as soon as they are available; any issues with posted grades should be reported to the instructor not later than a week after the assignment was returned to you. *Check university schedules to note the last day to withdraw from the course without penalty of a WF grade.*

**Online Assignments (20%):**

Homework assignments will be completed online through the *ExpertTA* website. There will typically be one assignment per chapter, which will be due on a roughly weekly basis. Due dates will be visible on the *ExpertTA* website, but might not be announced in-class.

Assigned homework problems may be similar to those at the end of each book chapter, but will come from an independent problem library. If you omit doing these exercises, you will likely not perform satisfactorily on exams. This will hurt your grade twice, so please do the homework and take it seriously. Merely looking over the solutions is not enough! *Doing problems yourself (and doing many of them) by producing solutions from scratch is critical to achieve any productive level of understanding.* So, do your very best and take the needed time before you look at the answers.

*Late Work* - *ExpertTA* automatically reduces the scores of late assignments by 1% for each hour they are late, up to 50 hours. However, late *ExpertTA* assignments will continue to be worth 50% credit throughout the rest of the term, and will be accepted right up to the start of the final exam.

**In-Class Tests and Quizzes (70%):**

There will be 6 quizzes held during the term, tentatively scheduled as follows:

**Quiz #1 –** Thu., Jan. 30th

**Quiz #2 –** Tue., Feb. 18th

**Quiz#3 –** Tue., Mar. 3rd

**Quiz #4 –** Thu., Mar. 12th

**Quiz #5 –** Thu., Apr. 2nd

**Quiz #6** – Thu., Apr. 16th

**Your lowest quiz score will be dropped**. Note that the above quiz dates may shift slightly. Each of these quizzes will primarily cover the material from their respective portion of the term, although some cross-over is possible, where appropriate. There will also be a final exam that will cover topics from throughout the term. **The final exam will be 10:45am-1:15pm on Thursday, May 7th.** For regular quizzes and for the final exam, I will NOT give makeup exams under any normal circumstances.

**Attendance/Participation (10%):**

Attendance is required in all class sessions as per the rules of the University System of Georgia. Missing more than two lecture sessions (at instructor’s discretion and depending on provided documentation for absences) may result in a failing grade for the course. Participation points will be awarded at the discretion of the instructor based upon your engagement in the classroom, and may be reduced due to consistent late arrivals. If an unexpected event (*e.g.*, a car accident) prevents your attendance, you must contact the instructor within 24 hours to make alternative arrangements.

*Co-Requisite Policy* – PHYS 2211 and PHYS 2311 are co-requisites. The lecture course provides important background information for laboratory work, and the hands-on work done in lab reinforces what you learn in lecture. For this reason, dropping one of these courses mid-semester will result in dismissal from the other course.

*Group Work* – In-class group problems may be administered periodically. This course is aimed in part at producing critical-thinking skills, group membership/cooperation skills, and problem-solving and procedural skills. Collaborative problem-solving and discussions contribute in multiple ways toward each of these goals.

Watching the instructor work problems has only limited utility – although many of you may disagree at first. You will learn problem-solving only by DOING problem-solving; by BEING CRITIQUED by your group and by the instructor in a non-threatening setting; and through *practice, practice, practice*! The goals of group problem solving are to:

1. Prepare each group member for individual testing
2. Expose you to the diversity of problem-solving skills of your classroom peers
3. Provide practice ‘producing’ and ‘presenting’ solutions to your classmates (a skill you need for the test, and for life!)
4. Prepare you to solve the homework problems.

**Policy on Cell Phones and Other Electronic Devices:**

Please silence your cell phones and other electronic devices before entering the classroom. **Texting is expressly forbidden in class at all times.** Cell phones may be left on in vibrate or silent mode, but I expect that you will only answer emergency calls (i.e., you have a sick family member for whom you are responsible). If you must answer the phone, please leave the room without disturbing the class. I reserve the right to revoke this policy if it is abused.

Electronic devices have great potential to increase productivity if used appropriately and respectfully. Therefore, I will conditionally allow the use of electronic devices in class for note-taking purposes, because it is your responsibility to pay attention, participate, and try to do well in this course. However, inappropriate or distracting use may cause me to reconsider this policy. **Use of electronic devices (other than a calculator) is completely forbidden during exams.**

**Policy Regarding Email and Telephone Contact**

I may be reached at the email address above, but please be aware of the following limitations. I check email and phone messages reliably only during normal work hours (9am – 5pm) on weekdays. During these times I will do my best to respond within 24 hours. However, due to the length of time it takes to write a response, I may not be able to give lengthy answers via email. Such questions would be better answered during office hours, when I am guaranteed to be at your disposal. Therefore, I strongly encourage you to start the homework well in advance of the due date, so you can come in to see me if you need help. If you cannot attend my regular office hours, please contact me to make an appointment at a mutually convenient time.

**Expectations for this class**

* **I expect that you will have the math skills to succeed in this class when you enter, as established by course pre-requisites.**
* I expect students to have read or watched the assigned material before coming to class. I will not be repeating this material to you – I will be using this as a jumping off point, so that we can clarify this material, and make your understanding of it deeper.
* I expect students to be prepared to think critically, and to do more than memorize things. Your careers in any profession will be better served by learning how to think through these problems, rather than by memorizing things to survive this class.
* Be sure to respect your fellow students by not dominating the discussion, nor by interrupting their comments. If you disagree with another student’s approach, try to persuade them that your approach makes more sense in a polite and respectful way.
* Speak up! The best way to learn is to think, and to ask questions. If you don’t want to do so in class, ask me later or your classmates, university tutors, etc. It *will* be on the test.
* Avoid disruptive behaviors in class that make it difficult to accomplish everyone’s class objectives. Civil behavior includes use of respectful and appropriate language and behavior. Students who violate civility expectations may be asked to leave class. Students who fail to adhere to the behavioral expectations outlined by the instructor may be subject to discipline in accordance with the procedures described in the Student Handbook.
* Both in class discussions and when working in groups, I expect each of you to participate fully, and to allow others to do so as well.
* If a classmate is cheating or not participating fully in any part of the class, I expect that someone will let me know. It is not fair to the other students who will be working hard in my class to let a student skate by on the work of others. However, you should not assume that I already know if someone is not doing their share of the work. This can be confidential or not, as you choose.

**Policy Regarding Academic Honesty:**

Academic dishonesty includes cheating on exams, plagiarism, and unauthorized collaboration with other students on assignments. Academic dishonesty puts honest students at a disadvantage, and is clearly unfair to hard-working students in the class. It is one of the highest crimes you can commit at a university, and instructors have a duty to ensure that it does not occur.

Plagiarism includes using any other person’s work with intent or obvious appearance of treating it as one’s own, and failing to acknowledge properly the original author’s work. One does not commit plagiarism if one uses another person’s work but cites it properly. If you use another author’s words directly and verbatim, they must be quoted and properly cited; if they are paraphrased, then the source must still be cited. Even if cited, you may not earn full credit on an assignment if a quote is used in a way that does not demonstrate your understanding.

Questions regarding the definition of plagiarism and cheating should be directed to the instructor before work is submitted for grading. If you are unsure if an action is academically dishonest – either ask me, or look at the student handbook for university-wide (and more general) definitions. **Any act of plagiarism or cheating will result in a course grade of “F” and will be prosecuted to the full extent allowed by university regulations.**

**Academic Center for Tutoring:**

Enrolled CSU students can receive free tutoring from the Academic Center for Tutoring (ACT). The ACT's primary mission is to contribute to CSU's vision, mission, and priorities by supporting students in their core courses (math, science, writing, and humanities) and in other professional and academic situations (personal statements, resumes). More information about what the ACT can do for students can be found by visiting online <https://act.columbusstate.edu>, by visiting Woodall 104, or by calling 706-568-2483. Appointments are made via MyCSU and EAB.

**Accommodations:**

If you have a documented disability as described by the Americans with Disabilities Act (ADA) and the Rehabilitation Act of 1973, Section 504, you may be eligible to receive accommodations to assist in programmatic and/or physical accessibility. We recommend that you contact the Center for Accommodation and Access located in Schuster Student Success Center, room 221, 706-507-8755 as soon as possible. The Center for Accommodation and Access can assist you in formulating a reasonable accommodation plan and in providing support. Course requirements will not be waived but accommodations may be able to assist you to meet the requirements. Technical support may also be available to meet your specific need.

**Campus Carry:**

For information regarding HB 280 (Campus Carry), please refer to [www.usg.edu/HB280](http://www.usg.edu/HB280). It is the permit holder’s responsibility to know and comply with the law.

**Syllabus Revision Policy:**

This syllabus is considered correct and complete when distributed at the beginning of the term. However, the instructor reserves the right, acting within policies of CSU, to make changes in the course content and/or instructional and assessment techniques during the term. Should this happen, the change will be announced in class and the updated syllabus will be posted online.

**Schedule Notes**

This lecture course will first meet on Thursday, January 16th. We will then meet nearly every Tues. and Thurs. until the final class meeting on Tuesday, April 28th. Exceptions are as follows:

* Tuesday, March 17th No Classes (Spring Break)
* Thursday, March 19th No Classes (Spring Break)

**Tentative List of Lecture Topics**

(The approximate number of 75-minute lecture periods is indicated in parentheses.)

* Units and Measurement (1) Chap. 1
* One-Dimensional Motion (5) Chap. 3
* Vectors (1) Chap. 2
* Two-Dimensional Motion (1) Chap. 4
* Newton’s Laws & Applications (5) Chap. 5-6
* Work and Energy (3) Chap. 7-8
* Momentum and Collisions (2) Chap. 9
* Circular and Rotational Motion (4) Chap. 10
* Static Equilibrium (1) Chap. 12
* Angular Momentum and Rotational KE (1) Chap. 11
* Gravitation and Orbits (1) Chap. 13