# PHYS 2425.001

# University Physics I

## COURSE SYLLABUS: Fall 2015

**Instructor:** Dr. Kent Montgomery
**Office Location:** STC 148
**Office Hours:** MTWR 10-11, or by appointment
**Office Phone:** 903-468-8650
**University Email Address:** kent.montgomery@tamuc.edu
**Graduate Assistant Teaching:** James Thomas
**Learning Assistants:** Abel Arce, Bethany Hyatt

# COURSE INFORMATION

**Textbook:** MasteringPhysics with Knight, Physics for Scientists and Engineers, 3rd edition. You have the option of buying MasteringPhysics with etext only (ISBN 9780321753052) or MasteringPhysics with etext and traditional textbook (ISBN 9780321844354).

McDermott, Tutorials in Introductory Physics Workbook and Homework package (ISBN 9780130970695).

PHYS 2425 Lab manual, available at the campus bookstore

## Course Description

This is a calculus-based introductory physics course in mechanics. Topics include kinematics, dynamics, momentum, energy, and applications of Newton's Laws.

## University Catalogue Description

Calculus based physics course in mechanics for science, mathematics and engineering students. Prerequisites: You must be currently enrolled in Calculus I or have previously taken Calculus I.

## Student Learning Outcomes

1. Students will be able precisely explain and calculate motion using the concepts of position, velocity, and acceleration.

2. Students will be able to represent the forces on an object in a physical situation and calculate the resulting motion using Newton's Laws.
3. Students will be able use momentum and energy to describe a physical situation and calculate the motion of an object using these quantities.

# COURSE REQUIREMENTS

## Instructional Methods, Activities and Assessments

This class is being taught in studio mode. Studio mode is a student-centered active learning environment that blends lecture time with lab time. Lecture and/or readings will be used to introduce topics. Students are encouraged to ask questions during lecture. However, the majority of class time will be focused on group activities. Activities will include conceptual work, labs, and problem solving. Activities will be completed in groups of 3-4. The instructor will assign groups. Groups will be changed 2-3 times during the semester.

Physics education research has shown that students learn best when actively engaged in class. Studio mode has been implemented at many universities and has been found to have positive impacts on conceptual understanding and problem-solving ability.

# GRADING

Grades will be based on four components:

| | |
|---|---|
| Exams | 30 % |
| Final Exam | 20 % |
| MasteringPhysics Homework | 15 % |
| Tutorial homework | 20 % |
| In-class assignments | 20 % |

Grading scale: Final Percent

A > 90
80 < B < 90
70 < C < 80
60 < D < 70
F < 60

Exams: There will be three midterms and a final. Your exam grade will be computed from the average of two of your *midterm* grades. The lowest midterm exam will be dropped. The exams will be weighted equally (15 percent each). The final will be cumulative and accounts for 15%.See the course outline for exam dates. Make-up exams will only be allowed for excused absences. See course policies below for details on excused absences.

MasteringPhysics: The course number for mastering physics is MPMONTGOMERY66941. Homework: 13-15 homework assignments will be assigned throughout the semester. Homework will be submitted through MasteringPhysics. The due date will be displayed in

MasteringPhysics and announced in class. Your lowest MasteringPhysics Homework grade will be dropped.

Tutorials Homework: 10-13 homework assignments will be assigned throughout the semester. Homework is due at the beginning of class. Late homework will not be accepted. Your lowest Tutorial Homework grade will be dropped.

In-class assignments: In-class work will sometimes be graded. Assignments will be completed as a group, but your effort will determine your individual score. Your lowest in-class assignment grade will be dropped.

# COURSE AND UNIVERSITY PROCEDURES/POLICIES

## Course Specific Procedures

1. Cell phone use is only allowed if used for class activities.

2. **Eating is not allowed**. However, covered drinks are allowed.

3. Attendance will be taken at the beginning of class.

4. The instructor must be notified by email (kent.montgomery@tamuc.edu) about any excused absences **no later than 24 hours after the missed class**. Even if you choose to notify the instructor in person, you **must still follow up with email** within 24 hours of the missed class. If you do not follow this policy, you may not be able to make up missed exams or turn in late work except in extreme circumstances.

5. You are responsible for obtaining notes and class announcements from missed classes.

6. Excessive absences may result in being dropped from the course.

7. When emailing the instructor, include the **course and section number in the subject line**.

9. You are expected to check your email at least once a day for class announcements. Emails will be sent to the email addresses you provided to MyLeo. Notify the instructor if you would prefer to receive emails at a different address.

11. Students should fully participate in class activities.

12. Students are expected to be professional and respectful and take responsibility for their learning. If you find yourself struggling, the instructors are available to provide extra help outside of class.

## University Specific Procedures

### ADA Statement

**Students with Disabilities**
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

**Office of Student Disability Resources and Services**
Texas A&M University-Commerce
Gee Library- Room 132
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
StudentDisabilityServices@tamuc.edu

### Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. (See *Code of Student Conduct from Student Guide Handbook).*

A&M-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

### Plagiarism

Plagiarism is a criminal activity. You must cite all sources of information. Unreferenced copying of material, whether parts of sentences, whole sentences, paragraphs, or entire articles can result in a score of zero for your assignment and may result in further disciplinary action.

# COURSE OUTLINE / CALENDAR

**Content schedule**

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|---|---|
| Weeks 1-5 | Kinematics |
| Weeks 6-9 | Dynamics |
| Weeks 10-13 | Momentum, Energy, and Work |
| Weeks 14-15 | Rotation and Gravity |

**Exam dates (Tentative)**

| | |
|---|---|
| Exam 1 | Wed., 9/30 |
| Exam 2 | Wed., 10/28 |
| Exam 3 | Wed., 11/18 |
| Final Exam | Weds., 12/16 10:30-12:30 |