

**SYLLABUS**  
**Physics I**  
**PHY-191 / CRN: 10309 (Evening Class)**  
**Summer Quarter 2008**

**Instructor:** Mr. Dennis Missavage

**Credit Hours:** 5

**Class Hours / Week:** 4

**Lab Hours / Week:** 3

**Prerequisites:** MAT-194 with a "C" or better and ENG-191 with "C" or better

**Course Description:** Provides an introduction to classical theories of mechanics. Topics include: systems of units, equilibrium of rigid bodies, kinematics, dynamics, energetics of conservative and non-conservative mechanical systems, and conservation of momentum. Laboratory required. Use of the computer and graphing calculator is an integral part of classroom and laboratory assignments.

**Competency Areas:**

Measurements and Systems of Units

Newton's Laws

Work, Energy, and Power

Impulse and Momentum

One-and-Two Dimensional Motion

Mechanical Equilibrium

**Performance Objectives / Requirements**

To complete PHY-191 the student will be required to:

1. Express and manipulate numbers in scientific notation.
2. Explain SI, CGS, and FPS unit systems.
3. Be able to perform unit conversions.
4. Explain the difference between vector and scalar quantities.
5. Express vector quantities in polar and component form.
6. Perform vector addition and subtraction.
7. State Newton's laws of motion.
8. Calculate the gravitational attraction between two bodies.
9. Distinguish between force and mass and identify the unit of each.
10. Solve dynamics problems involving constant forces.
11. Define work, potential energy, kinetic energy and power, and identify the unit of each.
12. State the law of conservation of energy.
13. Compute the work done by both constant and varying forces.
14. Use the work-energy theorem in solving problems.
15. Compute the translational kinetic energy of a body.
16. Compute the rotational kinetic energy of a body.

17. Solve problems with Hooke's law.
18. Compute the elastic potential energy stored in a spring.
19. Compute the gravitational potential energy of an object.
20. Compute the power given appropriate parameters.
21. Define momentum and identify its unit.
22. Define impulse and identify its unit.
23. State the law of conservation of momentum.
24. Solve elastic and inelastic collision problems.
25. Define displacement and identify its unit.
26. Define both velocity and speed and identify their respective units.
27. Define acceleration and identify its unit.
28. Solve problems involving uniformly accelerated motion.
29. Define angular displacement, angular velocity, and angular acceleration and identify their respective units.
30. Define centripetal force and centripetal acceleration.
31. Solve rotational kinematics problems.
32. Calculate the centripetal force exerted on a body and the associated centripetal acceleration.
33. Define torque and identify its unit.
34. Compute the torque generated by a force about an axis.
35. Determine the moment of inertia of a rigid body about a given axis.
36. State the conditions of mechanical equilibrium.
37. Solve problems involving systems in mechanical equilibrium.
38. State the law of conservation of angular momentum.
39. Solve problems using conservation of angular momentum.

**Text: Physics – Principles with Applications**, Sixth Edition, (2005) by Douglas C. Giancoli

**Required Workbook: Physlet Physics-Interactive Illustrations, Explorations, and Problems for Introductory Physics** (2004) by Wolfgang Christian and Mario Belloni

**Required Workbook: Ranking Task Exercises In Physics / Student Edition** (2004) by Thomas L. O’Kuma, David P. Maloney, and Curtis J. Hieggelke

**WebAssign Code Access Card:** Purchased from the college bookstore or online with a credit card

**Graphing Utility Required: TI-83, TI-84, TI-86, or TI-89**

**Office: Physics Laboratory (Room: B121)**

**Office Hours:**

<b>4:30 p.m. - 6:00 p.m.</b>	<b>MTWR</b>
<b>1:00 p.m. - 3:00 p.m.</b>	<b>Most Saturdays</b>

Or by appointment

**Telephone & e-mail:**

WebAssign	Communication / Private Message
Physics Lab	(770) 528-4589
Work e-mail	<a href="mailto:dmissavage@chattcollege.com">dmissavage@chattcollege.com</a>

**Method of Evaluation:**

Three Tests	40%
Quizzes, Group Quizzes, JiTTs, Take-Home Quizzes, Forum Work, and Simulations	15%
Homework	20%
Laboratory	15%
Force Concept Inventory-Post Test	5%
Comprehensive Final Exam	5%

**Missed Test Policy:** If a student misses a test and has a valid excuse, then it is the student's responsibility to make arrangements to make up the test missed.

**Retesting:** Some retesting may be available for the three tests subject to the following guidelines.

1. The instructor must agree to the retesting
2. Maximum score on a retest cannot exceed 70%
3. Retest grades cannot be used to achieve an overall course grade more than "C"
4. Retesting is **not** available for the Comprehensive Final Examination

**"Missed Quiz" or "Missed In-Class Group Work" Policy:** A short quiz is given during each class meeting. (Except for scheduled test dates) There is **no** make-up for missing a quiz or group work. Your instructor also assigns take-home quizzes to be completed outside of class and turned in on a given date. There is **no** option for turning in a take-home quiz late. There is **no** extension for not turning in a JiTT or simulation by the due date. A grade of **zero** will be recorded.

**Laboratory:** Each student is required to perform each assigned laboratory and complete a lab report. Lab reports turned in after the due date will be subject to a penalty. The maximum percentage grade possible on late lab reports will be 75%.

---

**Attendance Policy:** **CLASS ATTENDANCE IS EXPECTED.** Attendance will be taken at each class meeting. Notify your instructor before you must miss a class. If you

miss a class without notification, please contact your instructor or one of your classmates to obtain the assignments missed. **Late to class, leaving before the end of class, and returning from break late are each equivalent to one-third of an absence.**  
**Withdrawal From Class: Withdrawal from class is a student option.**

### **Withdrawal Policy**

Through the end of the eighth (8<sup>th</sup>) week of the quarter, a student may drop some or all courses from his or her schedule. During weeks 1-5 a student will receive a grade of W; during weeks 6-8 a student will receive a grade of WF or WP. WF's are calculated into the grade point average just as an F would be. Withdrawal forms are available in the student services office.

## **NOTICE FOR STUDENTS WHO STOP ATTENDING CLASSES**

- 1. STUDENTS must initiate withdrawal from a course(s) by completing the appropriate form through the STUDENT SERVICES OFFICE.**
- 2. Instructors WILL NOT initiate withdrawal for students who stop attending any course(s). Withdrawal is a STUDENT option.**
- 3. STUDENTS withdrawing from a course(s) after the drop/add period (July 1<sup>st</sup> – July 3<sup>rd</sup>) through the end of the 5<sup>th</sup> week of the quarter (August 6<sup>th</sup>) will receive a grade of "W."**
- 4. STUDENTS withdrawing from a course(s) during the 6<sup>th</sup>, 7<sup>th</sup> or 8<sup>th</sup> week of the quarter (through August 27<sup>th</sup>) will receive a grade of "WP" or a "WF."**
- 5. STUDENTS who have not withdrawn or do not attend class after the end of the 8<sup>th</sup> week of the quarter (August 27<sup>th</sup>) WILL NOT be withdrawn by the instructor and WILL receive the appropriate letter grade (A, B, C, D, or F).**

---

### **Stopped Attending Policy:**

After a student has attended a class at least one time, he/she is considered to be on the class roster. Your instructor is required to submit students who have stopped attending as this status occurs. The definition of "stopped attending" for this course is:

- A student who has missed 3 consecutive days of a class that meets twice per week.
- It is the student's responsibility to contact the instructor if s/he is to be absent from class or has missed class. It is the instructor's decision as to whether to allow the student to return to class or to submit the student as "stopped attending" if the student misses the above defined number of classes.

Students submitted as “stopped attending” are not eligible to be reinstated into the course; they will receive a grade of F for the courses, unless the student withdraws from the course using the appropriate withdrawal procedure

---

### **Academic Dishonesty**

Any student found to have committed the following misconduct is subject to disciplinary sanctions:

- Acts of dishonesty, including but not limited to the following:
  - Cheating, plagiarism, or other forms of academic dishonesty.
  - Furnishing false information to any staff or faculty member of Chattahoochee Technical College.

**Equity Statement:** Offensive statements regarding one’s race, sex, creed, national origin, physical ability, or mental ability are not appropriate in this course. These statements may be considered a violation of CTC’s standard of conduct, as stated in the current catalog, and may result in disciplinary action.

**Work Ethics Grade:** A work ethics grade of 0, 1, 2, or 3 will be assigned to students in all courses. The work ethics grade is assigned in accordance with Georgia Department of Technical and Adult Education standards. The work ethics grade will be displayed on the student's official transcript but will not affect the academic grade point average. The work ethics grade is designed to evaluate and encourage good work habits.

**Warranty:** Any graduate of Chattahoochee Technical College who is determined to be deficient in a competency identified in the state program standard shall be retrained at no cost upon the request of a graduate or the employer in conjunction with a graduate. This warranty is valid for two consecutive years following the date of graduation.

**Accommodations:** Anyone who feels that they may need an accommodation based on a disability should contact me to arrange an appointment to discuss the course format and how it can be modified to meet your needs. I rely on the Disability Services Coordinator for assistance in verifying the need for accommodations and developing accommodations strategies. If you have not previously contacted the Disability Services Coordinator, I encourage you to do so. The telephone number of the Office of Disability Services is (770) 528-4529.

**Food and Drink: Food and drink are not permitted in the classroom or laboratory.**

**Telephones: No types of communication devices are permitted in the Physics Laboratory. These devices include but are not limited to the following:**

1. Cell telephones
2. Ear telephones
3. Pagers

4. Headphones
5. Laptop computers / Notebook computers

**Additional prohibited items include:**

1. iPods
2. MP3 Players
3. Electronic video games
4. Digital cameras

**These devices are to be turned off and not available for use during lecture, laboratory, and while working in the physics laboratory. This last statement means:**

1. Not before class
2. Not during class
3. Not during break
4. Not after class
5. Not during office hours
6. Not during my planning periods
7. Not during the Saturday tutorial period
8. “not available for use” means the devices are to be stored away in book bags or purses. They are not to be left on the table while in the laboratory. I recommend that you leave these devices in your automobile before coming into the laboratory.

**Failure to comply with the above regulations will result in a reduced work ethics grade and a reduced final course grade:**

1. Work ethics grade reduced to either a 1 or 0
2. Final course letter grade reduced by one letter grade (Example: “B” reduced to “C”)

**Grading System**

The following grading system is used college-wide:

<u>Grade</u>	<u>Standard</u>	<u>Numerical Equivalency</u>
A (90-100)	Excellent	4
B (80-89)	Good	3
C (70-79)	Satisfactory	2
D (60-69)	Poor	1
F (0-59)	Failing	0
WF	Withdrew failing	0
WP	Withdrew passing	Not computed
W	Withdrew	Not computed
I	Incomplete	Not computed
S	Satisfactory (PREP)	Not computed

U

Unsatisfactory (PREP)

Not computed

### Tentative Daily Schedule

Date	Topics
July 1	Orientation & Pretest & Intro. to Webassign & Chapter #1
July 3	Chapter #1 & Chapter #2
July 8	Chapter #2 & Laboratory #1
July 10	Chapter #2
July 15	Chapter #3 & Laboratory #2
July 17	Chapter #3
<b>July 22</b>	No Class→Work on Homework & Take Home Quiz & Read Chapter #4
<b>July 24</b>	No Class→Work on Homework & Take Home Quiz & Read Chapter #4
July 29	Review & Chapter #4
<b>July 31</b>	<b>Test #1 &amp; Chapter #4</b>
August 5	Chapter #4 & Chapter #5 & Laboratory #3
<b>August 6</b>	<b>Last day to withdraw and receive a “W”</b>
August 7	Chapter #5 & Chapter #6
August 12	Chapter #6 & Laboratory #4
August 14	Chapter #6 & Review
<b>August 19</b>	<b>Test #2 &amp; Chapter #7</b>
August 21	Chapter #7 & Chapter #8
August 26	Chapter #8 & Laboratory #5
<b>August 27</b>	<b>Last day to withdraw and receive a “WP” or “WF”</b>
August 28	Chapter #8 & Chapter #9
September 2	Chapter #9 & Laboratory #6 & Review
<b>September 4</b>	<b>Test #3 &amp; Review</b>
<b>September 9</b>	<b>Comprehensive Final Examination &amp; Post Test</b>

The above test dates are tentative and subject to change upon notification. The number of tests given during the quarter may be reduced from three to two upon notification. This syllabus for PHY-191 is subject to change.

Revised: July 1, 2008

DM