

# PHY115 GLENDALE COMMUNITY COLLEGE Fall 2009

## PHY 115 University Physics I

A general physics course using calculus to develop the principles of mechanics and thermodynamics. Recommended for majors in the sciences and mathematics. Required for engineering and physics majors. Prerequisites: **MAT 220 or MAT 223 Calculus I.**

Course content may vary from this outline to meet the needs of this particular group.

Instructor: Cheryl Dellai Office in Room PS 109 Phone 623.845.3678  
E-mail: [cheryl.dellai@gmail.com](mailto:cheryl.dellai@gmail.com)

Lectures:	MTRF	12:00 - 12:50 PM	Dellai	Room PS167	Sec 14592/94 Honors
	TR	5:20 - 7:00 PM	Dellai	Room PS167	Sec 14652
Labs:	Wednesday	11:00 – 1:30 PM	Dellai	Room PS168	Sec 14596
	Wednesday	1:40 – 4:10 PM	Dellai	Room PS168	Sec 14666
	Wednesday	7:10 – 9:40 PM	Dellai	Room PS168	Sec 14654

The Hi-Tech center is available for student use for physics assignments. Each student using the center will log in each time and follow all rules.

Homework Session T/R 11:25 – 11:50 AM PS167

Office Hours: TF 10-11, MW 11-12 and by arrangement  
Math Center MR 10-11 AM

Text: **Fundamentals of Physics 8th Ed** by Halliday & Resnick, 2007  
**Physics & Spreadsheets** by Cheryl K Dellai  
**Physics Handouts** by Cheryl K Dellai

### *Recommended and Optional Materials*

**Preparing for General Physics** by Pickar, 1993

Equipment: **Calculator**  $\Rightarrow\Rightarrow$  With scientific notation, log functions, trig functions.  
**(BRING Calculator to first lab!)**  
**3 ring notebook**  $\Rightarrow\Rightarrow$ - For storing lab manual, problem solutions etc.  
**Storage Device**

**ATTENDANCE POLICY:** Attendance will be taken daily. When a student has accumulated unexcused absences in excess of four class periods, the instructor MAY file a withdrawal form for that student.

**WITHDRAWAL POLICY:** According to college policy, a student may withdraw from the course during the 1st 7 weeks by submitting a withdrawal form to the Admissions Office. If a student wishes to have the instructor withdraw him or her from the course AFTER the 7th week, it is the responsibility of the STUDENT to contact the instructor about the possibility of a withdrawal.

## SAFETY REGULATIONS

Arizona State ARS15-151 specifies that every student, teacher, and visitor in community colleges must wear appropriate protective eyewear while participating in or when observing vocational, technical, industrial arts activities involving exposure to: molten metals; molten metals, cutting shaping, and grinding of materials; heat treatment; tempering or kiln firing of any metals or other materials; welding fabrication processes; explosive materials, caustic solutions and radioactive materials.

**Cheating or plagiarism will result in a zero grade for the item.**

**Audio taping of classes is allowed.**

**Smoking, eating, & drinking in class is not allowed. Water in a sealed bottle is allowed.**

**Turn off all cell phones.**

**Special needs students need to contact me and/or Disability Services 623.845.3080.**

**Misbehavior or failure to follow instructions is cause for instructor withdrawal.**

## PERSONS NOT ENROLLED IN CLASS ATTENDING CLASS

No one not enrolled in class is allowed in class. For emergency childcare during class time call **Child Referral Phone Number 623.244.2678.**

## COPY OF SYLLABUS ACKNOWLEDGEMENT

Course: **Physics 115**

Semester: **Fall 2009**

E-mail \_\_\_\_\_

Instructor: **Cheryl K Dellai**

Section: \_\_\_\_\_

Phone # \_\_\_\_\_

I acknowledge that I have received a course syllabus for the course described above. I have read it and understand the attendance, withdraw, grading and other policies. I recognize that to successfully complete this course it may require 2 to 3 hours out of class for each hour spent in class.

**Signature:** \_\_\_\_\_

**Printed Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## COURSE COMPETENCIES:

1. Use fundamental physical laws and principles to solve problems encountered in academic and non-academic environments.
2. Develop and use appropriate models that closely represent actual physical situations.
3. Apply problem-solving techniques in terms of logic, efficiency, and effectiveness.
4. Solve problems beyond the level of plug-in type problems.
5. Solve practical engineering and science problems.

## COMPUTER PROGRAMS

All students have access to the palette which includes Office 2003, Office 2007, Netscape, and Maple. A shareware spreadsheet Aseasyas 4.0Q is available. Instruction in your course folder. <https://files.gccaz.edu/shared/courses/phy115/cdellai>

Library at <http://www.gccaz.edu/Library>

**Grading: 1000 pts total**

- 50 pts Assigned project
- 35 pts Student Tests (7 pts/test)
- 100 pts Weekly quiz (last 10 min of class) (5 - 10 pts)
- 25 pts Spreadsheet Exercises
- 200 pts Tests no makeups unless arranged in advance.
- 300 pts Final- comprehensive (2 PARTS)

**100 PTS TAKE HOME 200 PTS IN CLASS NO NOTES**

**Common Final Exam:** A common comprehensive final exam consisting of 20 multiple-choice questions from the official textbook test bank will be given to all classes. The composition of the common final will be determined by a consensus of the instructors of the course.

The weight of the common final in the determination of the course grades is left to the discretion of the instructor. However, The following guidelines apply to all students in the course:

- No student scoring below 70% on the common final may receive a grade higher than a B.**
- No student scoring below 50% on the common final may receive a grade higher than a C.**
- No student scoring below 30% on the common final may receive a grade higher than a D.**

60 pts Homework (3 pts/chapter) - due on Thursdays one week after the chapter.  
Late homework will receive 1 pt.

30 pts Lab Test

200 pts 10 labs (20 pts) (Lab grades will be scaled)

(50% loss of points for labs more than 1 week late) To receive a course grade of "C" or higher, a student must submit passing lab reports for at least 7 of the scheduled labs. Grades will be reduced on late lab reports (2 weeks late maximum) proportionally down to 60%.

**Any student failing the laboratory portion of the course cannot receive a grade higher than a D for the course.**

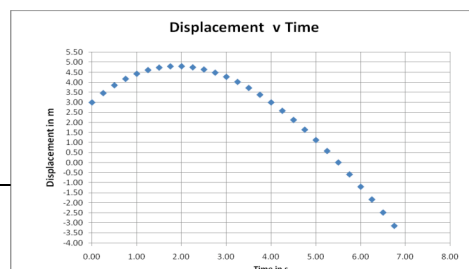
**A 90% B 80-89% C 70-79% D 60-69% F < 60%**

## PHYSICS 115 SPREADSHEET ASSIGNMENT 25 Points

### TURN IN SPREADSHEET file, and paper print out Large sheet in course folder

- Build the spreadsheets and graphs indicated in the Lab Manual. Projection & Projectile Motion II on pages 53 thru 60. (10 points)
- Build the spreadsheet and graph indicated in the Lab Manual Building a Dampened Harmonic Oscillator pages 123 & 124 (5 points)
- Give the graph below: make a spreadsheet using the graph (The first 4 lines are shown.) Find the displacement, velocity, and acceleration equations using the trendline function and calculate & plot from zero to 6.0 seconds on the spreadsheet using 0.25 increments. If the Total Energy is 8.00 J, calculate the kinetic energy and potential energy from zero to 6.0 seconds on the spreadsheet. Calculate the force from 0 to 6 seconds. (10 points)

Mass of Object	4.00 kg
Initial Velocity	0.00 m/s
Initial Position	0.00 m
Increment	0.25 m
Total energy of system	8.00 J



Time s	Displacement m	Velocity m/s	Acceleration m/s <sup>2</sup>	Energy in Joules			Force in N
				Total	Kinetic	Potential	
0.00	3.00			8.00	5.81	2.19	0.15
0.25	3.46	1.70	0.04	8.00	4.03	3.97	0.30
0.50	3.85	1.14	0.11	8.00	2.61	5.39	0.45
0.75	4.17	0.88	0.15	8.00	1.53	6.47	0.60

