PHYSICS A 2002-2003 Marc Reif, Teacher E-mail: mreif@fayar.net, marcreif@hotmail.com
School Phone: 479-444-3050 Home Phone: 479-444-0668
Physics WebPages: http://fayar.net/east/teacher.web/science/reif

INTRODUCTION
Congratulations on choosing physics, the ultimate science! The goal of physics is to describe models which predict the behavior of the universe and everything in it. A background in basic physics will help you with many career paths, especially, but not only, those in science and engineering. The concepts you learn in this class will also help you to understand the world around you.

For most students, physics is a challenge! You must always think and try to understand to do well in this course. Memorization will not get you through this course. This is not a mathematics class, but we will be doing mathematics almost daily. For most students, the mathematics in this course will not be new, but the ways you will be using your mathematical knowledge may be unfamiliar.

The three main things I expect you to do throughout this course: *THINK, CALCULATE, AND EXPLAIN!*

You are expected to follow all district, school, and classroom rules while you are under my supervision.

You probably want to know about the assignments and grading policies. Some of these are below. You should also check the website for revisions to these policies and assignments. If an assignment or policy is announced in class **or** written below **or** posted on the website (see address above) you are expected to abide by it!

HOMEWORK
Homework will be assigned approximately three times per week. My intention is for assignments to take you less than one hour. Homework may include problems, questions, reading, or writing assignments. You are always expected to attempt the homework. Proof of an attempt will be written work on paper for each item assigned, or your grade on a reading quiz for reading assignments. Homework may be checked, or it may be presented. Presentations will involve your explanation of the solution in front of the class. You will not receive credit for homework that you work on in my room 15 minutes or less before the start of class.

LABS
Lab groups of two to five students will collaborate to reach consensus. You must work with and stay with your group during the entire lab period. All students must be involved in the assigned task at all times. You are personally responsible for understanding everything your group is assigned to do, even if another member of your group does most of the work on it. Only use equipment as it was intended. Don't do anything that could result in damage to equipment or an unsafe situation. Lab practical tests may be given on occasion to determine your level of proficiency in the lab.

You will write up approximately three labs each quarter. The write-up must follow the assigned format, and should be your best work.

QUIZZES & TESTS
There will be three or more quizzes per quarter. These will usually consist of one to six questions and mathematical problems. Limited time in class will be given to complete quizzes. There should be no talking during quizzes. About three tests will be given each quarter. Each test will be a mixture of problems and conceptual questions, and may also include more lab-based tasks. These will be a major portion of the grade, and are considered by most students to be difficult. There will be no talking during the entire class period of a test.

PROJECTS
You may be asked to complete several projects during the year. These projects will primarily be completed outside of class, although there may be class time for getting started. Projects will be

required of all students. Past projects have included rocketry, bridge building, trebuchet construction, and outside reading.

GRADING
Grades will be calculated on the basis of points. The total points during each quarter may change, but changes will be announced. You are expected to follow the handbook policy regarding late work. All missed assignments must be made up, unless I decide to excuse you. It is the student's responsibility to check for missed assignments and make arrangements to complete them. For each day that work is late, a penalty of 10% will be exacted. After the third day that work should have been turned in, you may no longer turn in the assignment and it becomes a zero. This includes late make-up assignments.

Reif will <u>only</u> be available to discuss grades at lunch.

UNIT TOPICS (sequence subject to change) Text is *Conceptual Physics* by Paul Hewitt.

1st Quarter
Unit 1 Scientific thinking
Unit 2 Constant Velocity Model
Unit 3 Constant Acceleration Model
2nd Quarter
Unit 4 Free Particle Model
Unit 5 Constant Force Model
Unit 6 Particles Moving In 2 Dimensions Model
3rd Quarter
Unit 7 Energy
Unit 8 Central Force Particle Model
Unit 9 Impulsive Force Particle Model
4th Quarter (not all of these will be completed, students may help decide topics)
Special Relativity
Electricity and Magnetism
Light and Optics

RECOMMENDED MATERIALS—Please see me if any of the following present any problems.
Pencil, paper, 3-ring binder with organized sections.
Calculator: Texas Instruments TI-83+ Silver Edition preferred. The TI-89 is fine, but you will be expected to learn how to operate it without my help.
Mechanical pencil and eraser.
Access to a computer with Internet hook-up.

I promise to do my best to make this class challenging, enlightening, and fun. But, I can't guarantee it will be all of these things for everyone all the time☺

I have read and I understand all parts of the "Physics 2001-2002" introductory document and I agree to abide by the policies of the class.

Student's Printed Name_____ **Date**_____

Student's Signature _____