

Northside Christian School
Physics – Grades 11 & 12

GOALS:

- 1) To begin to understand the simplicities and complexities of the physical laws by which God maintains the Universe.
- 2) To observe and understand the applications of physics to everyday situations and experiences.
- 3) To develop the conceptual and mathematical skills necessary for practical, situational problem solving,
- 4) To develop an appreciation for earlier theorists and their experiments,
- 5) To experience in a variety of ways how theories can be verified by experimentation,
- 6) To develop good laboratory techniques such as: data taking procedures, various ways to analyze data, organization and summary of data, and to critically evaluate laboratory results,
- 7) To develop the necessary skills for technical and scientific fields.

TEXT: Physics An Incremental Development, Saxon Publishers, Norman Oklahoma, 1993.

CLASS NEEDS:

- 1) Separate spiral notebook for notes
- 2) Notebook paper for homework
- 3) Graph Paper
- 4) TI Graphic Calculator, (TI 83, or 83 plus)
- 5) TI Graph Link for home use (very helpful)

REQUIREMENTS:

- 1) Homework - There is an old proverb that says, “*Students who want to understand physics and do well, must **successfully** work problems*”. It is interesting that Saxon follows this same philosophy. Therefore, homework will be required usually every night. Typically the even or the odd problems will be assigned at the end of every lesson (approximately 10 problems). Expect to spend approximately an hour for each assignment.

Homework will always be graded, but grading will take different forms or methods: 10 points completion, quiz grade, or students will be pre-assigned a specific problem to present to the class. Answers to the odd problems are given in the back of the book. Solution manuals for all the problems are available upon request. *It is expected that the student works the problem first, check the answer, re-work for the correct solution, and then if necessary – check the solution manual. This method provide the greatest success.* The student **must** show his/her work on every problem attempted and/or completed. Home work is due at the beginning of every period.

Students helping another student to understand can be a great benefit, but copying another student’s answers from homework is still Biblically cheating, lying, and stealing and will dealt with accordingly. How do you spell ZERO?

- 2) Test – A standard Saxon test will be given at the end of every four lesson. In physics, no pre-test is given. Each test usually consists of 10-12 problems, and each problem will be usually worth a maximum of 5 points. The final grade for the test, however, will be worth 100 points. Additional “UnSaxon problems” will be on the test. These “UnSaxon problems” will evaluate the same concepts but will require a higher level of thinking. On any test problem, students **must** show their work for full credit. Full credit work includes: the formula, substitution of variables into the formula with units, the correct answer, the correct final unit, proper number of significant digits, and your work must agree with the correct answer. On each problem, some partial credit can be given.

- 3) Typical Class Room Routine – 1st - Go over new lesson, 2nd - Go over assigned problems for that day. **Remember** – *Problems are due at the beginning of the period* – **This is Enforced, by the Great Enforcer.**
- 4) Laboratory Reports – Typically lab reports are due several days after the completion of the experiment. Each report is usually worth 25 or 30 points. A lab report is to be submitted by every student and should reflect the ability of the writer.
Grading will consist of:
- An appropriate title page (clarify your name, title, experiment, date, and list your partner's name),
 - Neatness – if you can't write neat – type it. Use a ruler whenever possible.
 - Evaluation the organization of the data,
 - Correctness of math, correctness of the labeling and units, correctness of significant figures.
 - Accuracy of the results.
 - In some cases, there are post-lab questions or additional exercises.

POINTS TO REMEMBER:

- If the experiment is given to you early (day before), read through it, get some of your own understanding, and understand procedures. *When all else fails, follow directions.*
- Be sure to take good pre-lab notes, refer to them, and remember, *the longer you wait the more unclear things become.*
- You may share data, but don't abuse the spirit of helping. There are Biblical distinctions between helping, cheating.
- You are always better off doing your *Work*, using your *Mind*, and applying your *Math*. *A single mind thinking independently is better than 2 or 3 other minds playing dumb.*
- Unfortunately, lab partners usually suffer together in common mistakes. I like to grade lab partners' reports together. It is *enlightening* to compare.
- You always have the wonderful privilege of asking help from the instructor. I think it is safe to say that he usually knows more about the experiment than your lab partner, but DO NOT ask him the day it is due.
- Be careful, the phone lines get busy the night before a lab is due, and **students get desperate.**
- Remember, you are writing for the benefit of the reader – Lab reports are a writing assignment.

STANDARD MAKE-UP POLICY: New Policy - Adopted by NCS HS fall 2008

- The new grading program can provide a weekly report of missed assignments. This list will be posted in each class and on each Monday and Wednesday showing students and assignments that must be made up. **More details to follow.**
- You must** turn in all homework, assignments, lab reports and make up quizzes, test, and lab experiment in the event of absence.
- Added note – **Just do your work** – Yes, I can give HW notices, call Dad or Mom, give detentions, and give zeros for a lack of Christian character that is displayed by a student who does not do their work or make-up their work when they are suppose to do it. ENOUGH SAID – *SIGH!*

Have A Great Year