**Honors Physics Syllabus**

**2023-2024**

**Northwest Guilford High School**

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**Text**:  *Physics*, Serway and Faughn; 1st Ed. Holt, Rinehart and Winston, 2002

**Course Overview:** This course is designed to meet and exceed the North Carolina Essential Standards in Physics. Students will learn through lecture, class discussion, inquiry lab experiments, group collaboration and discussion and a range of pedagogical techniques.

This course has an emphasis on understanding physics concepts and skills then applying them to solve problems. Students will develop skills in reading, understanding and interpreting physical information, using the scientific method, using mathematical reasoning when faced with physical situations, and designing, performing and interpreting laboratory experiments.

**Required Supplies**

Scientific calculator (such as TI-83).

1 composition notebook

Graph paper

Pencils and pens

**Labs:** Labs will include both experiments and computer simulations. Some labs will include full formal lab reports and others will be guided data collection. Some experiments and simulations will be performed at home.

**Student Evaluation:** The school grade will be determined using the following rubric:

**Laboratory work: 20%**

Individual grades will be assigned based on experimental work and written documentation. Computer simulations will be included in this category. Some quizzes may focus on lab skills such as graph analysis and will be included in this category.

**Other graded work, including classwork and homework: 20%**

Students will turn in their work on Mondays for the previous week. These will be graded mostly for completion as solutions are usually gone through in class.

**Tests: 60%**

Unit tests will include multiple choice and free response questions. The latter includes short answer and multiple part response.

**Late Work Policy:** Late work is accepted with a 20% penalty, up to a week late.

**Student Absences and Make-Up Work:** Students will have three days to make up work due to excused absences. If class time permits, they may be required to take missing tests or quizzes in class on their return. If missing experimental work, they may be required to use sample data to complete their experimental analysis.

**Course Syllabus and approximate timeline**

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| 1. Intro to math/trig/algebra
 | 12 days |
| Kinematics in One Dimension |  |
| 1. Vector analysis
 | 15 days |
| Kinematics in Two Dimensions |  |
| 1. Newton’s Laws
 | 17 days |
| 1. Energy, Work and Power
 | 16 days |
| 1. Momentum and Impulse
 | 12 days |
| 1. Gravity and circular motion
 | 10 days |
| 1. Electrostatics
 | 14 days |
| 1. Electricity
 | 7 days |
| 1. Circuits
 | 15 days |
| 1. Magnetism
 | 12 days |
| 1. Mechanical Waves
 | 10 days |
| 1. Electromagnetic Waves Part 1
 | 11 days |
| 1. Electromagnetic Waves Part 2
 | 10 days |