

Physics 12 Academic

Bruce Dalzell – Sydney Academy

TEACHER COMMUNICATION PLAN – September 2011

OVERVIEW: Physics 12 is an academic science course designed to prepare students for Physics at the secondary level (university, community college, etc.) and to develop an increased understanding and appreciation for physics in society.

SYLLABUS The following topics will be covered in the Physics 12 curriculum

Force, Motion, Work, and Energy	Dynamics Extension, Collisions in Two Dimensions, Projectiles, Circular Motion, Simple Harmonic Motion, Universal Gravitation
Fields	Magnetic, Electric, and Gravitational Fields, Coulomb's Law, Electric Circuits, Electromagnetism and Electromagnetic Induction, Generators and Motors
Waves and Modern Physics	Quantum Physics, Compton and de Broglie, Particles and Waves, Bohr Atoms and Quantum Atoms
Radioactivity	Natural and Artificial Sources of Radiation, Radioactive Decay, Fission and Fusion

ASSESSMENT AND EVALUATION:

- ❖ **70% Tests, Labs, Assignments & Class Participation**
- **35±10% Tests**
 - Some topics will be divided into two or three sections with corresponding announced tests
- **10-15% Labs**
 - Physics is an experimental science and labs are an integral part
 - Completed lab reports are due the following double class unless otherwise specified
 - Students participation in the lab will also be evaluated
- **10-15% Projects**
 - ❖ **Independent Research Project**
 - Each student will research and submit both a written report on any physics related topic of their choice.
 - ❖ **Independent Lab**
 - Groups of two or three students will submit a plan, conduct the experiment, and complete a complete lab report for an original experiment or an adaptation of a known experiment of their choice.
 - Each student in the group changes a different independent variable.
 - ❖ **Science Fair**
 - Each student, working alone or in pairs, is encouraged to develop a presentation for the Sydney Academy Science Fair. The project could be an experiment, a study, or an innovation.
 - The science fair project mark may be used to replace a lab or research paper mark
- **5-10% Classwork (Assignments and Quizzes)**
 - Homework will be assigned on a regular basis and is expected to be completed and submitted on time.
 - Pop quizzes, in-class assignments and take home assignments will be used to evaluate comprehension.
- ❖ **30% Exam – January Exam**

The November report is progress reports and its value is **not** used as a proportion of the final grade

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PHYSICS 12 ACADEMIC

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Please complete the reverse side and return to Mr. Dalzell

