

# Physics

Course Outline

2012/2013

- Instructor:** Mr. Beane  
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- Text:** Physics: Principles and Problem and Physics 8<sup>th</sup> Edition  
Glencoe Science Cutnell & Johnson
- Content:** This course covers the rules that everything follows. It will give insight on the how and why things work.
- Class:** Class activities will vary. This will include lecture, discussion, open questions, labs, group work, projects, etc. Students will be dismissed by the teacher and are to remain in their seats till the end of the class. There will be no talking while the teacher is speaking. If you have a question raise your hand and wait to be called upon. No bags/purses permitted on the desk. **All school rules apply.**
- Homework:** Assignments will be from text, worksheets, labs, etc. Homework is a crucial part to succeeding in Physics. **Partial credit will not be given on homework.** Homework is to be completed before the beginning of class. If time is given in class you will use it for **Physics homework** and only **Physics homework**. If time is not being used efficiently time will not be given for homework.
- Test/Quizzes:** Approximately 8 quizzes will be given each 9 weeks. Their point values will range between 10 and 75 points. There will also be one major test that will be composed of the material from the whole 9 weeks and its value will be from 100-150 points. You are to use no unapproved extraneous aids on any of your evaluations. If you do, the result is an automatic F.
- Labs:** Lab materials should be returned to their proper location. No materials should be touched without the instructor's permission. The lab should look better because of your presence. Follow all the safety procedures and precautions.
- Attendance:** The content of this course requires an excellent attendance record if one expects to be successful. **It is the RESPONSIBILITY of the STUDENT to obtain make up work upon his/her return to school.**
- Website:** On my website you will find: notes, worksheets/handouts, links to various resources, pictures and miscellaneous information.  
[abeane.weebly.com](http://abeane.weebly.com)
- Bonus:** Bonus will be in the form of an online current event. It will be available every other week and it will be your responsibility to submit by the deadlines posted. It must be posted to my website.
- Late Assignments:** Graded assignments lose 10% per day
- Passes:** Will only be given for emergencies. If it isn't don't ask.
- Grading:** The grading scale in your Student Handbook will be used

## **Some Guidelines for the classroom**

**Be on time. Be in your seat when the bell rings.** Stay in your seats until dismissed by the teacher.

**Be prepared.** You should have all your materials for that day. (Textbook, pen or pencil, notebook, calculator, homework). You should not ask to go to your locker for any of these materials.

**RESPECT other students.** You should not talk when another student/teacher is talking. Activities that cause a disruption are being disrespectful to other students. You should not insult your fellow classmates.

**RESPECT staff.** You should remain in your seats until dismissed. You should only leave the room with the teacher's permission and a pass. Sleeping during class is not permitted. Calculator games are not permitted.

**Respect property.** You are not permitted in any cabinet/storage area without the teacher's permission.. Any activity that could damage personal or school property is disrespectful. You should not touch anything that is not yours without permission from the teacher.

**Use time efficiently.** You should always be working. If you finish one assignment move on to the next or to homework.

**ALL School rules must be followed.**

**Failure to meet these expectations will result in discipline.**

**Repeated failure of these expectations will result parental contact and input from the administration.**

**Horseplay will not be tolerated and will lead to immediate action.**

**Discipline Includes:**

- **Call Home**
- **Detention**
- **Referral to the Office**

## **Course Outline of Topics and Chapters**

### **1<sup>st</sup> 9 Weeks**

- Motion (4 weeks)
  - Graphs Ch 2
  - Problem Solving
  - Projectiles Ch 3,6
- Forces, momentum and motion (4 Weeks)
  - Newton's laws applied to complex problems Ch 4,5
  - Gravitational force and fields Ch 7
  - Elastic forces Ch 5
  - Friction force (static and kinetic) Ch 4

## 2<sup>nd</sup> 9 Weeks

- Forces, Momentum, and Motion (9 Weeks)
  - Forces in two dimensions
    - Adding vector forces Ch 5
    - Motion down inclines Ch 6
    - Centripetal forces and circular motion Ch 8
  - Momentum, impulse and conservation of momentum Ch9

## 3<sup>rd</sup> 9 Weeks

- Energy (6 Weeks)
  - Gravitational potential energy Ch 11
  - Energy in springs Ch11
  - Nuclear energy Ch 30
  - Work and power Ch 10
  - Conservation of energy Ch 11
- Waves (3 Weeks)
  - Wave properties Ch 14
    - Conservation of energy
    - Reflection Ch 17
    - Refraction Ch 18
    - Interference Ch 19
    - Diffraction Ch 19
  - Light phenomena
    - Ray diagrams (propagation of light) Ch 16
    - Law of reflection (equal angles) Ch 17
    - Snell's law Ch 18
    - Diffraction patterns Ch 19
    - Wave – particle duality of light Ch 16
    - Visible spectrum and color Ch 16

## 4<sup>th</sup> 9 Weeks

- Electricity and magnetism
  - Charging objects (friction, contact and induction) Ch 20
  - Coulomb's law Ch 20
  - Electric fields and electric potential energy Ch 21
  - DC circuits
    - Ohm's law Ch 22
    - Series circuits Ch 23
    - Parallel circuits Ch 23
    - Mixed circuits Ch 23
    - Applying conservation of charge and energy (junction and loop rules) Ch 23
  - Magnetic fields and energy Ch 24, 25
  - Electromagnetic interactions Ch 26