**REGENTS PHYSICS**

**COURSE OUTLINE 2022-2023**

**THE CINEMA SCHOOL**

 **MS. MURRAY**

**amurray@tcs-nyc.org**

**amurray10@schools.nyc.gov**

This handbook is designed to help you have a successful year and to be able to have a quick reference for class content, expectations and procedures**. Please keep it in the front of your binder for future reference.** 

Physics is the study of the mathematical models that underpin the interactions between matter and energy at all scales of time and distance within the universe. This introductory Physics course will follow the requirements of the Physical Setting / Physics Regents Exam, with the aim to prepare all students attending this course to take this exam. The Savvas Experience Physics course text takes us through five storylines: Storyline 1: Forces and Motion, Storyline 2: Forces at a Distance, Storyline 3: Energy Conversion, Storyline 4: Waves and Electromagnetic Radiation, and Storyline 5: From the Nucleus to the Universe.

**Key Historical Physics Concepts**

* Newtonian Mechanics: Sir Isaac Newton concluded that a new force, gravity, was the basis for general laws of motion as well as universal gravitation.
* Quantum Mechanics: The birth of quantum mechanics is fundamental to understanding the ability of light to exhibit both particle and wave characteristics.
* Theory of Relativity: Einstein’s proposal that space and time are intimately and indivisibly linked.

**A Word on Labwork:**

* You are **required by New York State** to complete at least 1200 minutes worth of lab assignments over the course of the year.
* Laboratory work is an extremely important part of the Chemistry curriculum. **If you are absent for lab, you MUST make it up**.
* You will store all of your graded lab reports in a personalized folder that will be maintained in the classroom. Online labs will also be kept in a designated online space.
* **Do not take your labs out of the room.** If somehow your labs are taken out of the classroom and lost, **you cannot sit for the exam in June** and your graduation will be put in jeopardy.

**Course Texts**

Experience Physics: Student Edition; Savvas (SE)

Online texts and materials relating to Experience Physics will be used:

<https://www.savvasrealize.com>

Physics/The Physical Setting NYS Reference Tables (2011 edition): <https://www.ionaphysics.org/library/physics06tbl.pdf>

**Topic List**

This course includes an extensive body of information which must be applied to concepts. In order to complete all areas of study before the Regents examination a strict time schedule must be maintained. Students should master each topic unit of study as it is presented since there is not sufficient time to “re-teach” the entire course in the last few weeks of school. Below is an approximate schedule.

| **Semester 1** | **Semester 2** |
| --- | --- |
| **Storyline 1: Forces and Motion***Anchoring Phenomenon: How will we get to Mars?*Students explore the relationship between force and motion.1. Modeling Motion

 (11.5 days), SE pp. 4-491. Forces

 (14 days), SE pp. 50-111**Storyline 2: Forces at a Distance***Anchoring Phenomenon: How does the moon shape our coastline?*Students investigated gravitational, electric, and magnetic forces, as well as the forces within atoms1. Gravitational Forces

 (11.5 days) ,SE pp.112–1531. Electric Forces

(11.0 days), SE pp. 154–1951. Magnetic Forces

(12.5 days), SEpp. 196–2391. Forces in Materials

(15.5days), SE pp. 241–277**Storyline 3: Energy Conversion***Anchoring Phenomenon: How does a machine transfer energy?*Students explore energy conversions in collisions, in engines and heat pumps, and in electromagnetic systems1. Energy

 (10 days) ,SE pp.278-3191. Collisions

(14.5 days), SE pp. 320-3631. Thermal Energy

(12.5 days), SEpp. 364-4071. Electromagnetic energy

 (16..5days), SE pp. 408-461 |  **Storyline 4: Waves and Electromagnetic Radiation** *Anchoring Phenomenon: How do waves transfer energy?* Students investigate the properties and behaviors of waves, using mathematical relationships.1. Waves

 (10 days) ,SE pp. 462-5091. Electromagnetic Radiation

(10.5 days), SE pp. 510-5371. Information and Instrumentation

(11 days), SEpp. 538-565 **Storyline 5: From the Nucleus to the Universe** *Anchoring Phenomenon: How did the atom form?* Students explore the beginning of the universe, the death of stars, and the radioactive decay of atoms.1. Nuclear Physics

 (12.5 days) ,SE pp. 566-6071. Ages of Rocks

(12.5 days), SE pp. 608-6511. The Universe

(12.5 days), SE pp. 652-691 **Regents Review** |
| Review & Midterm (3 + 2 periods) | Review & Final (10 periods)  |

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**Supplies Needed**

***Every day of class you need to bring***:



1. A binder with dedicated section for ONLY Physics work.

OR A spiral lined notebook or notebook section that ONLY holds

Physics notes.

3. A blue or black pen **and** a #2 pencil.

4. A charged laptop or chromebook (provided in class, or you can bring your own)

**Expectations and Evaluations**

Physics is an interesting and fun course of study. Similar to many things in life that are worthwhile, this course is very challenging and will require a good deal of hard work. Please read the following carefully so that you can get off to a great start this year.

 **Notes**:

* Students are expected to keep notes that are given by the instructor, taken during the instructor’s lectures, or composed by the student during an activity
* ***Organization will play a big role in your success in this course.*** Student’s notebooks should only contain material relating to the unit under study. Materials from previous units of study should be filed chronologically in a safe place at the student’s home.
* ***This course is cumulative.*** You will need to review material covered in previous units for the midterm as well as the Regents examination. Don’t throw out anything until you check with one of the instructors.

**Preparation/Homework:**

* Complete homework is due at the beginning of the class period **of the due date assigned.** Homework is a very important part of the course. There is a purpose to the homework- to prepare for an experiment, analyze experimental data, or help you study and comprehend the material discussed in class.
* A schedule of assignments will be given at the beginning of each unit of study. This is done in order for you to effectively plan your calendar.
* ***Late assignments are not accepted unless you have a verified absence or extreme situation.***
* If you have a verified absence, you must submit the homework to the instructors **within two day of your return**. It is your responsibility to obtain and submit assignments. You will not be reminded to hand in homework.
* Some homework assignments will be graded while others will be checked for completion.

**Exams and Quizzes:**

* Exams and quizzes will be given at the beginning of class periods. Quizzes will be given primarily to assess student preparation for the laboratory exercises and classroom activities; exams typically are at the end of a unit or occur at the midway points of larger units.
* Similar to non-exam days, you are required to come to class prepared (i.e. #2 pencil and/or pen) \*\**on those exams requiring computations, calculators will be provided\*\**
* ***If you have a verified absence and miss a scheduled test, the test must be made up within two days of your return to school. Like quizzes, tests cannot be made up during class time. It will be your responsibility to arrange a make-up time with me immediately upon your return to school.***
* If you have an unverified absence for the period an exam is given, **you will not be allowed to make up the exam and you will receive a grade of 45%.**

**Grading**



Quarter grades are calculated using a computer program to avoid mathematical errors. Averages will be calculated throughout each marking period and students will periodically receive progress reports detailing grades. In calculating averages, each graded assignment will have a different weight or value.

Standard values are as follows:

**Homework - 15%**

**Classwork and Participation - 35%**

**Assessments (test, quizzes, etc) - 30%**

**Performance Task (essay, projects, etc.) - 20%**

**Extra Help**

* Based upon your teacher’s schedule ---- day of week to be announced in September.
* Special review sessions will be announced throughout the year for major tests.
* If you are having any problems with the course material, it is your responsibility to seek out extra help either during school or after school.