

Syllabus: Physical Science Novare

Course Description

Students in the Logic Stage are eager to wrestle with ideas. Our Novare Physical Science course exercises minds while establishing foundational science skills. Using the Novare curriculum, students develop skills in mathematics, English, and measurement. Upon the skills being developed, we build ideas: students learn to distinguish fact from hypothesis, theory from law. Upon the ideas learned, we build interdisciplinary application: in a manner akin to that of our Omnibus courses, our Novare Physical Science course draws connections between a variety of disciplines, using science to amplify the power of art, architecture, literature, technology, and music. Homework will average 3 - 5 hours per week, including labs.

Course Learning Objectives (CLO)

- Apply the steps of the scientific method by formulating a hypothesis, identifying the variables involved, collecting and analyzing data, and drawing conclusions that are supported by the data collected.
- Explain introductory chemistry concepts including basic atomic theory, the periodic table, classification of substances, chemical and physical properties, naming compounds, writing formulas, and chemical reactions.
- Explain introductory physics concepts including types of energy, conservation of energy, fundamental forces, motion, waves, sound, light, electricity, and magnetism.
- Demonstrate a growing competence with the SI measurement system, including unit conversions. Apply knowledge of the SI system with key formulas in chemistry and physics.
- Construct a basic timeline of the historical development of chemistry and physics.
- Analyze information and draw conclusions concerning intelligent design and the Biblical worldview in contrast with secular worldviews.
- Evaluate current events in chemistry and physics from a growing knowledge base and developing philosophy of science.

Attendance and Participation

Both attendance and participation are vital parts of this course; therefore, students are required to attend class sessions and participate actively in discussions. Students are expected to view archives of any missed classes, and are responsible for obtaining any notes or assignments.

Students will be given quarterly grades for both participation and attendance:

- Fifteen percent of the final grade will be attributed to *relevant class participation*. This includes raising one's hand, commenting regularly via

microphone/webcam, and using the chat box regularly to contribute to the academic conversation.

- Five percent of the final grade will be attributed to *class attendance*. Being present, being on time, and readiness for class are all factors to be considered in the class attendance grade. *Excused* absences will not detrimentally impact attendance grades.

Grading rubrics are located in the Course Documents folder in each course page.

Assignments & Tests

Students will complete weekly assignments in the physical science textbook, as well as occasional additional readings supplied by the instructor. Quizzes will be given weekly and will emphasize mastery of physical science concepts. Laboratory investigations and experiments are very important for this course. These lab activities will be completed at home and will be discussed in class. Most chapters will involve a lab activity. Students will complete one project where they will research a topic, design and conduct an experiment, collect and analyze data, reach a conclusion, and write a report, suggesting further research. Each student will have an opportunity to present their findings to the class as they begin learning to engage research as beginning scientists.

Students will take a midterm and final exam. Both exams will be cumulative and should be taken in one sitting and proctored by an adult. Unless directed by the teacher, students are not permitted to use any helps, books, notes or the Internet on any portion of tests. All tests are due at 11:55 PM EST on the date shown. Specific instructions will be provided by the instructor.

Evaluation

The final grade is determined on the following basis:

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| • Class Attendance | 5% |
| • Relevant Class Participation | 15% |
| • Quizzes | 30% |
| • Formal Lab Reports | 10% |
| • Informal Lab Reports | 10% |
| • Project | 10% |
| • Midterm/Final Assessment | 20% |

Grading Scale

The following grading scale will apply for all assignments and final grades. 100% – 90% = A; 89% - 80% = B; 79% - 70% = C; 69% - 60% = D; 59% - 50% = E; 49% - 40% = F. All grades are rounded to the nearest whole number.

Late Work

If a student fails to submit any assessment by the due date, it is considered "late."

- Assignments submitted 0-24 hours late will result in a 10 point reduction off earned grade.
- Assignments submitted 24-48 hours late will result in a 20 point reduction off earned grade.
- Assignments submitted 48-72 hours late will result in a 30 point reduction off earned grade.
- Assignments over 72 hours late will not be accepted and the student will receive a zero.
- Parent may request an extension from their child's teacher *prior to the due date* or in the case of an emergency.

While we love grace and the opportunity to exercise it, we also desire to instill a sound sense of responsibility in our students, hence these expectations pertaining to late work.

Exam/Test Retakes

Any student may retake a failed assessment (except quizzes), but can score no higher than 70% on the retake. Retakes must be submitted within one week of the returned, failed test. If the retake is not submitted within one week, the original failing grade will stand.

Academic Dishonesty

Cheating on any assignment is considered academic dishonesty. This includes plagiarism in any form. Cheating will be dealt with in the following manner:

- If a student is caught cheating, he will receive a zero on the assignment and will be placed on academic probation for the remainder of the school year.
- If the same student is caught cheating again, he will likely be expelled.
- No refunds will be granted for students who are expelled due to cheating.
- A Disciplinary Action Form will be submitted by the student's teacher for any instance of academic dishonesty.

Textbooks

The books needed for the class can be purchased through Veritas Press. It is extremely important that the student has the correct version/edition of these materials.

Physical Science Novare Textbook, 3rd Edition (680021)

The following items are also required, but unfortunately are not available through Veritas Press:

- Scientific or Graphing Calculator
- Balance or scale (postal or kitchen scale which measures to gram or more precise)
- Drano or NaOH (sodium hydroxide)

- pH paper (available online, big-box stores, or pool-supply stores)

Course Calendar

See Course Assignment Sheet, located on the course page, for class dates, breaks and all assignments and assessments. Class dates and breaks can also be found on the current academic year calendar.