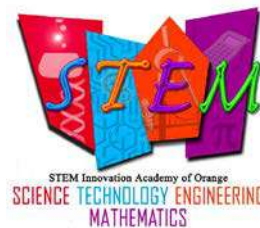


## **STEM Innovation Academy of Orange**

Chemistry (Honors)

Ms. Austin

Email: [austindy@orange.k12.nj.us](mailto:austindy@orange.k12.nj.us)



### **Course Description**

Chemistry is a phenomenon-driven science course designed to develop scientifically literate citizens who can use technology to investigate and explain the world around them. Chemistry is important because it is everything around you and explains how everyday phenomenon work. Chemistry is the basis for many careers including medical fields, pharmaceuticals, cosmetics, biotechnology, energy, plastics, food technology and more. This course is designed to develop an in-depth understanding of the major areas of chemistry including chemical reactions, energy, the periodic table, atomic theory, gas laws, solutions, acids and bases, reaction rates, equilibrium, thermochemistry, and nuclear chemistry. Part of this course will be devoted to developing scientific and engineering skills including asking questions, developing models, performing investigations, analyzing data, using mathematics, constructing explanations, engaging in arguments, and communicating information. Students will practice problem solving with structured activities and progress to open-ended projects and problems that require them to develop planning, documentation, communication, and other professional skills. The chemistry course emphasizes laboratory investigations (experiences in the laboratory, classroom, or the field that provides students with opportunities to interact directly with natural phenomena or with data collected by others using tools, materials, data collection techniques, and models (NRC 2006, p. 3)). Throughout the process, students design investigations, engage in scientific reasoning, manipulate equipment, record data, analyze results, and discuss their findings.

### **Learning Objectives**

#### **By the end of the course...**

- Students will have a firm foundation in the fundamentals and applications of current chemical and scientific theories including those in Analytical, Inorganic, Organic and Physical Chemistries.
- Students will be able to design and carry out scientific experiments as well as accurately record and analyze the results of such experiments.
- Students will be skilled in problem solving, critical thinking and analytical reasoning as applied to scientific problems.
- Students will be able to clearly communicate the results of scientific work in oral, written and electronic formats to both scientists and the public at large.
- Students will be able to explore new areas of research in both chemistry and allied fields of science and technology.
- Students will appreciate the central role of chemistry in our society and use this as a basis for ethical behavior in issues facing chemists including an understanding of safe handling of chemicals, environmental issues and key issues facing our society in energy, health and medicine.

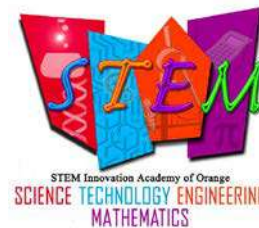


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- Students will be able to explain why chemistry is an integral activity for addressing social, economic, and environmental problems.
- Students will be able to function as a member of a self-sufficient scientific community.

### **Course Goals:**

1. To provide a broad foundation in chemistry that stresses scientific reasoning and analytical problem solving with a molecular perspective.
2. To provide students with the skills required to succeed in college level chemistry courses.
3. To expose the students to a breadth of experimental techniques using modern instrumentation.

### **Instructor**

Ms. Austin holds a Master's Degree in Science (M.S.) focusing on Chemistry from Fairleigh Dickinson University and a Bachelor's Degree in Science (B.S.) focusing on Molecular Biology with a Chemistry Minor from Montclair State University. Ms. Austin has taught chemistry for over 7 years.

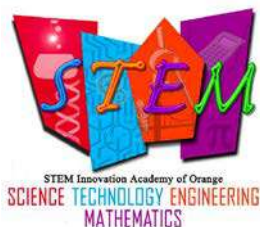
### **Our Routine (PPP)**

#### Present

**This class meets three times a week, 80 minutes per block.** This class will employ experiential learning activities, meaning it will be difficult to make up the amount of work covered due to absence. The activities we do in class are absolutely essential to your learning. You must make every effort to be on time, ready to work, and to be engaged fully on our task throughout the whole of our time. **If you are absent for the whole day, you are equally responsible for everything we did that day.** All missing assignments are provided through the online textbook, and may be handed in electronically via google classroom. This means you should discuss fully the day's material online and with your group before you return. If you are or will be absent, email [austindy@orange.k12.nj.us](mailto:austindy@orange.k12.nj.us) as soon as possible. If you do not have access to email, Ms. Austin will make an alternate arrangement with you.

#### Partnership

It is often said "if you want to go fast, go alone, but if you want to go far, go together." Every single day you will be collaborating with your classmates in pairs or in groups to push each other farther than any of us could get alone and provide you with opportunities to reexamine you thinking. **Sometimes you will choose your groups and other times they will be assigned.** This means

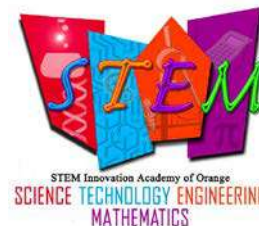


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that all of us need to treat one another in this class as partners - that is, with respect and with generosity. Behavior that harms the spirit of partnership will not be tolerated, because it destroys the trust needed to learn from each other.

### **Practice**

**It is important that you regularly practice skills we've built in class, between 30 minutes and 40 minutes every night.** Homework will be posted on [www.classroom.google.com](http://www.classroom.google.com). Quizzes will be given frequently and may be unannounced. Important note: plagiarism will not be tolerated. Please review the district policy on academic honesty in the STEM Innovation Academy of the Oranges handbook.

### **Technology**

**Google Classroom:** Links to worksheets, PowerPoints, and other class materials will be posted here. This is also where you will upload assignments for submission and view teacher feedback. Assignment due dates will sync automatically with google calendar (recommended app to download).

**Genesis-** Grades will be available to students and parents through genesis.

**Remind 101:** Remind 101 allows teachers to send texts or emails to groups of students while keeping the teacher's phone number hidden from the students and the students' numbers hidden from the teacher. You will have an opportunity to join our class through the application in the first few weeks.

### **Assessments**

10% Homework

20% Quizzes

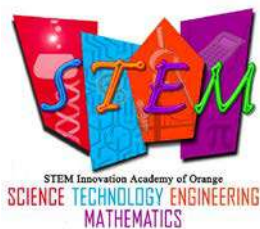
20% Classwork

25% Tests

25% Authentic Assessments

### **Deliverables:**

Each Task will have a set of Deliverables (conclusion questions, reports, models, posters, etc.) which are due on the due date as indicated on the course schedule. Assignments that do not meet expectations may be returned for a "REDO" at Ms. Austin's discretion. A REDO can be turned in, past the due date, for additional credit. Assignments submitted through google classroom, needing to be redone will receive a REDO comment and can be re-submitted online

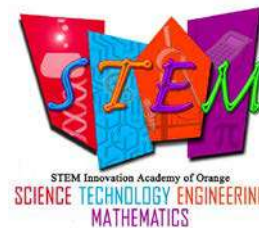


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### **Quizzes:**

Quizzes are designed to be learning experiences that can help you identify problems before it becomes too late.

### **Labs:**

Labs will be graded based on attention to safety and preparation, attention to detail/ directions, time usage, cooperation with lab partner, having required supplies and materials, and laboratory notebook documentation. Pre lab assignments are to be completed before the start of every lab and marked as complete before students can begin the day's activities. **Students who do not have this pre-lab assignments at the start of the period may not take part in the day's activities because the pre lab assignments will include safety information relevant to the procedures. In this case, the student will be dismissed to complete an alternate for reduced credit, and will need to schedule a time outside of class with Ms. Austin to make up the lab when they are prepared.**

### **Exams:**

Unit exams will be given after each unit we cover. They will be made up of multiple choice questions and short answer questions. Your journal entries and review sessions will assist in preparing for these exams. REDO's are not available on exams.

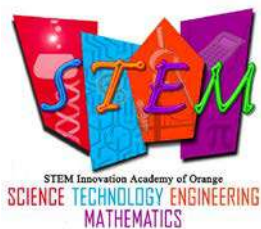
### **Teacher Availability:**

Ms. Austin will be available during advisory periods, after school until 4pm weekdays, and by appointment.

### **Other things to know:**

If you arrive at class and the door is closed, that means that attendance has already been taken and you need to obtain a late pass from the front office.

Late homework assignments will incur a 5-pt per school day deduction for five days and a 0 on the 6th school day; yielding a maximum score of 75% for late work. Students may request an extension but they have to exhaust the intervention opportunities first (advisory, office hours, lunch, before school, etc.)

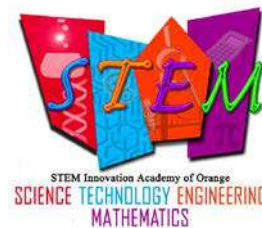


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We, the undersigned student and parent/guardian, have reviewed the expectations of the class as outlined in the syllabus and accept the terms and expectations as laid out.

I, as the student, further understand that my parent may be contacted if I am found to be in default of my expectations, solely for the purpose of correcting the problem before my grades are put in jeopardy.

---

(student signature)

(name)

(date)

---

(parent signature)

(contact email)

(contact phone)

Internet access at home? ☐ Yes ☐ No

Any other information I should know: