

Scientific Research and Design COURSE INFORMATION AND EXPECTATIONS

Mr. Orlando Montalvo
Room # 405
Conference: 1st block (8:00am-9:30am)
E-mail: see my [webpage](#)
Phone # 956-580-5300 ext. 1435



Tutoring: Tuesdays and Thursdays (7:30am -8:00am)

Welcome to Scientific Research and Design! It is my pleasure to help you take full advantage of what this course has to offer. If you come to class with a positive attitude, pay close attention to every lesson in class, keep very good notes, complete your assignments, and study for your exams, you will succeed. Please do not miss class because you could really fall behind. *You will begin to see the design process everywhere after taking this course!*

Materials Needed:

1. Notebook
2. Folder (to keep handouts, homework, reviews, quizzes, etc.)
3. Pencils and Pens (pens are either black or blue)
4. Remind App
5. Adobe Scan, Cam
6. Scan App, or other PDF conversion app
7. Google Classroom Access

Classroom Rules:

1. **BE SEATED** and ready to work before the tardy bell rings. If you are late, you need a tardy slip, permission slip, detention slip, teacher pass or administrator pass.
2. **PUT YOUR PHONE** and **EAR BUDS** away in your backpack for the lesson.
3. **RAISE YOUR HAND** and **WAIT** for me to respond if you need something.
4. **BE RESPECTFUL** of each other, materials, and the equipment of this classroom & work area. Clean up at the end of class.
5. **RESTROOM BREAKS** are allowed when I have finished with the lesson or instructions. You are encouraged to take your restroom break before you come to class or wait until the class block is over.
6. **TURN IN ASSIGNMENTS** on time! If you miss an assignment or test, it is YOUR responsibility to take care of it.
7. Food and soft drinks are prohibited. Water bottles are acceptable.
8. All other school and district policies apply.

Safety in the Work Area

PLTW activities can be the most enjoyable part of this course: however, the equipment can be dangerous when students are careless or inattentive. *I reserve the right to deny any student participation if I feel that the student's behavior is inappropriate.* The student will receive a zero for any grade recorded for the activity. The student will be financially responsible for any damage to equipment, except in those cases of normal use.

BYOD (Bring Your Own Devices)

- 1. Your devices should not be out or in use without permission. I will collect those devices if you do not comply.**
2. When we are using devices after the lesson, you should be using them for the purpose of the lesson, not for other classes unless you are finished with our assignment.
3. You are responsible for using the district Wi-Fi network when in use for BYOD activities.

Grade Distribution (Honors Course-No Late Work!)

1. **Minor Assignments:** The average of these grades will be worth **40%** of the average. Minor Assignments include PLTW Activities, homework assignments, and quizzes.
2. **Major Assignments:** The average of these grades will be worth **60%** of the average. Major assignments include tests, PLTW Project assignments, presentations, and other projects.
3. *At the end of each semester, the average of minor assignments and major assignments will be 80%. The semester exam is worth 20% of the semester average. Your final exam will be comprehensive. Semester and Final Exams are difficult exams.*

Statement for Academic Dishonesty: Academic integrity is fundamental to the activities and principles of our school. No student shall cheat or copy the work of another. Plagiarism, the use of another person's original ideas or writings as one's own without giving credit to the true author, will be considered cheating, and the student will be subject to academic discipline that may include loss of credit for the work in question.

I hereby agree that I have read the course information and am aware of the conditions set forth by the Engineering department, Sharyland High School, and Sharyland ISD. I also have read the classroom expectations and agree to follow them.

Student Name (print)

Student Signature

Parent Signature

Scientific Research and Design Course Outline

Lesson Title	Approximate Days of Teaching
Module 1: Introduction to Scientific Inquiry	
1 Professionalism in the Sciences: Scientific Research	8
2 Lab Safety: Scientific Research •	4
3 Science Explained: Scientific Research	4
4 Conducting Lab & Field Investigations: Scientific Research •	5
Module 2: The Scientific Method	
5 Scientific Methods: Introduction	5
6 Scientific Researching Strategies	4
7 Scientific Methods: Test Design •	3
8 Scientific Methods: Collecting Data •	1
9 Scientific Methods: Analyzing Data •	3
10 Scientific Methods: Drawing Conclusions	2
11 Maintaining a Laboratory Notebook	3
12 Scientific Methods: Communicating Results	2
Module 3: Applying the Scientific Method	
13 Exploring Scientific Method Application	10*
14 Lab Challenge: Experimental Design •	3*
15 Scientific Research & Design Capstone •	30*
Module 4: Connecting To Research Careers	
16 Connecting to STEM Careers: Chemist	1
17 Connecting to STEM Careers: Analytical Chemist	1
18 Connecting to STEM Careers: Freelance Biologist	1
19 Connecting to STEM Careers: Plant Ecosystem Ecologist	1

* Days of teaching vary based on teacher discretion.

• Lesson includes hands-on laboratory activity.

Laboratory activities account for 46% of suggested classtime.