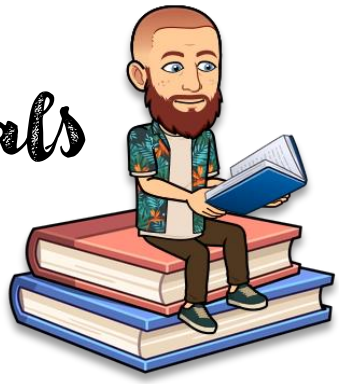
Engineering Essentials



Course Syllabus

Mr. Marcos Velazquez

Description

Students will explore the breadth of engineering career opportunities and experiences as they solve engaging and challenging real-world problems like creating a natural relief center system or creating a solution to improve the safety and well-being of local citizens. Explore how engineers make a difference and improve lives, while using modern engineering tools, such as geographic information systems, 3-D solid modeling software, and prototyping equipment. Work on your own and as part of a team to develop solutions to community and global challenges that the next generation of engineers will face.

Contact Information

Room: Lab 1
Email: mvelazquez@coheaedu.com
Phone: (305) 362-4006
Planning: 7th Period

Required Materials

- Engineering Notebook or Quad Ruled Composition Book
- Computer with Internet Access
- Pencils
- Calculator
- Ruler, Protractor & Compass (recommended)

Classroom Rules & Expectations

1. Always be on time to class.
2. Always show respect for your teacher and classmates.
3. Always use classroom-appropriate language.
4. Always bring your required materials.
5. Always use electronic devices for school-related material only.
6. Always raise your hand to be recognized.
7. Always ask questions and participate in class discussions.
8. Always communicate with your teacher about expected or continued absences.
9. Always wait at your seat for the bell to ring for dismissal.
10. Always try your best.

Consequences

Failure to adhere to the proper rules and procedures for this class or COHEA in general will result in the following:

1. Verbal warning/Seat change
2. Student-teacher conference
3. Contact parent/guardian
4. Written referral
5. Disciplinary meeting with parents and administration

Grade Breakdown

- 40% Assessments & Projects
- 30% Coursework
- 15% Class Participation
- 15% Notes (checked periodically)

Late & Make-Up Work

- Late work is prohibited without an excused absence.
- Make-up work may be given at teacher's discretion.

Course Topics

1. **Unit 1: Inclined to Design**
    a. 1.1: Engineers & Engineering
    b. 1.2: Systems & the Engineering Design Process
    c. 1.3: Product Design
    d. 1.4: Natural Disaster Relief Center
2. **Unit 2: Make it Move**
    a. 2.1: Machines
    b. 2.2 Mechanical Advantage
    c. 2.3: Mechanical Systems
3. **Unit 3: Power it Up**
    a. 3.1: Energy Conservation
    b. 3.2: Logic
    c. 3.3: Electromechanical Systems
4. **Unit 4: Make a Plan**
    a. 4.1: Urban Design
    b. 4.2: Maps as Models
    c. 4.3: The Sustainable Urban Environment
    d. 4.4: A Better Place

In signing below, I indicate that I have read and understand all rules, requirements and expectations outlined above.

_____ _____

Print Student Name **Student Signature**

_____ _____

Print Parent/Guardian Name **Parent/Guardian Signature**