

**Power Structure and Technology Foundations**  
**Course Syllabus**  
**2025-2026**

**Lexington High School**  
**Instructor: Mr. Marlon Leiva**  
**e-mail: [marlon.leiva@lexschools.org](mailto:marlon.leiva@lexschools.org)**  
**Phone: (308) 324-4691 ext. 2901**

**Class Purpose**

The purpose of the course is designed to provide students with introductory level experiences in selected major areas of agricultural mechanics technology which may include woodworking, agricultural structures, electrical wiring, introductory arc welding, oxy/fuel cutting and welding processes, and power equipment operation and maintenance. Learning activities include information, skill development, and problem solving. The class is also a great opportunity to learn, strengthen and apply knowledge in the following areas:

- Engineering
- Problem solving
- General mechanics principles
- Tool use - common and no common tools
- Physics
- Chemistry
- Math
- Shop safety
- Communication skills

**Objectives**

1. Safety and Developing - Safe work habits
2. Measuring and Marking Tools
3. Hand tools for different tasks
4. Power tools for different tasks
5. Types of fasteners, adhesives and finishes
6. Woodworking project

7. The arch welding process
8. Micro Welding Project
9. Working Drawings of a product
10. Building a Bridge Project
11. CO2 Race
12. Launching Rocket Project

### **Learning Units**

1. Safety and Developing - Safe work habits
2. Measuring and Marking Tools
3. Hand tools for different tasks
4. Power tools for different tasks
5. Types of fasteners, adhesives and finishes
6. Woodworking project
7. The arch welding process
8. Micro Welding Project
9. Working Drawings of a product
10. Building a Bridge Project
11. CO2 Race
12. Launching Rocket Project

### **Resources**

- Agricultural Mechanics and Technology Systems / Other printed materials

### **Grading**

Tests/Quizzes (**50%**) + Projects (**30%**) + Homework/Activities (**20%**) = **100%**

Quarter 1 (**45%**) + Quarter 2 (**45%**) + Semester Final (**10%**) = **100%**

### **Late Work**

All assignments have a due date. I expect all work to be turned in on time.

20 points will be deducted for every day it is late. After 4 days it will be counted as a "0%"

### **Classroom Expectations and Procedures:**

- Come to class prepared (Charged chromebook, pencil, paper, etc.)

- Respect one another
- Listen wholeheartedly when others are speaking
- Speak with good purpose
- Be accountable for your actions
- Learn from failure

### **Beginning of Class:**

- Place phones in backpack (No tolerance policy)
- Find your seat, take out supplies needed for class (CHARGED COMPUTER, pencil, etc.)
- When finished, sit quietly and wait for further instructions

### **During class:**

- Actively participate in class
- Keep order
- Be respectful

### **End of Class:**

- Clean up your area (paper on floor around you, your supplies, put extension cords away, etc.)
- Sit IN seat until the bell rings. DO NOT LINE UP AT THE DOOR!!!!
- Push in your chair and leave the room quietly