

# Electricity, Energy and Power

## Course Description:

Today's world is everchanging and continually giving us new ways to use and apply technology to our everyday lives. This class will explore technology and how it impacts our world. Many of the new developments we have today depend on electricity. This being said students will learn in this class how electricity is generated, distributed, and calculated to a diverse array of power outputs whether it be mechanical or digital. Along with electricity students will learn other forms of power transfer via fluid, thermal, and physical.

Standards: Iowa Core Curriculum 21<sup>st</sup> Century Skills, ITEA Standards for Technical Literacy

## Course Outline

- Introduction to powered technology
- Introduction to electricity
  - Students will cover basic concepts such as, Ohms law, A/C vs D/C current, circuits, and technical vocabulary.
- Introduction to energy and power
  - Students will cover energy sources, power delivery, grids, and past/present trends.
- Electrical Technology
  - Students will gain an understanding of how power is used in their electrical devices.
- Power Technology
  - Students will cover other forms of power by learning fluid and mechanical powered devices.
- Alternative energy
  - Students will discover current and future trends in alternative energy sources and uses.
- Power and Energy Concepts
  - Students will use the principles and laws behind power and energy to solve related tasks
- Conservation/Sustainability
  - Final conservation/sustainability project

## Assessment/Grading

Students will be using classroom computer lab and district lap tops to access assignments and quizzes using school Canvas software. Canvas software will allow for rapid feedback of student performance.

All projects will be graded using Iowa Common Core Standards in Rubric form.

This class will have a student engagement component that meets Iowa Common Core Employability Standards to help prepare students for careers and post-secondary ambitions. Below is the following criteria for daily student engagement grade:

5 – Exceptional: on-time/present, organized, completed exit ticket, on task, engaged in activities and classroom work

4 – Good: present, completed exit ticket, on task and engaged in class activities most of the time

3 – Good: Tardy, completed exit ticket, on task and engaged in class activities most of the time.

2 – Poor: Disorganized, late exit ticket, not engaged in class activities

1 – Poor: Tardy, disorganized, late exit ticket, not engaged in class activities

0 – Not present, Incomplete exit ticket, no activities made up

Behavior Expectations:

\*\*\*Every student must return a signed copy of this syllabus, before beginning work in the lab area. \*\*\*

- It is the expectation of this class that students follow the expectations as outlined in the 2017-18 student handbook
- Work safely
- Report any injury to me immediately after it happens
- You are responsible for the tools and equipment you are using. If you break something because of carelessness, you are responsible for it
- Report anything that is missing or damaged immediately
- Clean up at the end of each class period
- No food or drink are to be brought into the classroom. Individual music players cannot be worn during class without approval from the instructor. Cell phones must be kept out of sight during class or they will be put into my desk drawer for the remainder of the class period

\*\*\*STUDENTS WHO ARE DISRUPTIVE OR POSE A THREAT TO THEMSELVES OR OTHERS MAY BE

REMOVED FROM CLASS AND SENT TO THE AP OFFICE. \*\*\*

Communication:

The best way to contact me with questions or concerns is via email ([gmoklestad@dbqschools.org](mailto:gmoklestad@dbqschools.org)). You may also reach me by school telephone and Canvas program. Messages left will be returned as soon as possible. I will also update PowerSchool on a regular basis.

Parent Awareness:

Parents/guardians and students should both be aware of the requirements of the class. Remove, sign, and date below to indicate you have read this syllabus and are aware of the expectations and responsibilities of the class. Return to Mr. Moklestad.

Student Name (Print):

\_\_\_\_\_

Student Signature:

\_\_\_\_\_ Date: \_\_\_\_\_

Parent/Guardian Signature:

\_\_\_\_\_ Date: \_\_\_\_\_