

Advance Design Applications
Course Syllabus
Instructor: Mr. Krantz

Course Description

In this course, students use technology to solve more complex and challenging problems. Students will learn what technology is, how it is used, and how it impacts our lives. The course work will involve many opportunities for students to analyze processes and build design solutions first hand.

I: RE-Exploring Technology

- Definitions of Technology
- History of Technology, Technology and Human Knowledge
- Effects and impacts of Technology, Technology Systems Model
- The Design and Problem Solving Process and creating Technology Core

II: Construction Technology

- Documentation of design work and factors influencing design
- Researching design ideas and construct a functional residential storage space.
- Renovation trends in Construction Technology
- Investigation on green construction technologies.

III: Manufacturing

- Advances in manufacturing to maintain efficiency
- How consumers affect manufacturing
- Processing of materials to produce desirable products
- Mass production project within a classroom manufacturing enterprise

IV: Transportation Technology

- Understanding transportation subsystems and their function
- Improvements and impacts of transportation technology on environment
- Motion and Mechanical advantage Gear Ratios & calculation
- Ingenuity Challenges: Crab Boat, Lego vehicles

V : Power and Energy Systems

- Exploring the relationship of energy and power technologies
- How modern energy and power systems impact society and environment.
- How energy and power can be made more efficient and used in problem solving
- Design an efficient power plant

Grading

Work will be graded using rubrics given before each hands-on project is started. Grading will reflect the work that is turned in verses the expectations outlined in the rubrics and in class. Grades will also include class participation and grades linked to student's abilities to work in groups. Aside from projects there will be short quizzes and unit tests as material is covered. Grades will be figured using points system. The total points earned divided by the total points possible to receive a percent.

Late Work:

Late work is not acceptable and will only be accepted with valid excuse from the office. Due dates are posted and will be followed. Please write them down.

Classroom Needs:

Flash Drive

Binder (5 Sections)

Syllabus/Safety, Class notes, Projects, Test/Quizzes, Articles

Internet Use:

There will be many times during the class in which students will be using the internet for research. These are the only times students should be online and on appropriate sites. Failure to do so will result in subtraction of points from the current project or assessment. Your phone is **not** an acceptable device for searching the internet.

Electronics:

Devices should be left in student's locker. Students who are caught with their device will be referred to the office and lose classroom participation points. Teacher is not responsible for devices. School provided laptops are the only device to be used in class; it should be brought every day.

Cleaning the Classroom:

Students will be using hand and power equipment. As a result, material scraps and dust will collect on machines, counters, and other surfaces. Students are required to assist in returning the classroom to a respectable level of cleanliness. It is graded as part of classroom participation.

Leaving the Classroom:

There will be many times during the class in which students may exit the classroom; if a situation arises, students will need **their** assigned agenda to leave the classroom. Agenda is to be filled out and only awaiting teacher initials. Students will leave when time permits.

Class Rules

1) Be on Time

-In your seat when the bell rings

2) Be Prepared

-Pencil, paper and binder daily

3) Be Respectful

-Remain in your seat until excused to work

- Pay attention... NO SLEEPING

OR HEADS DOWN

-No food or drink

-No foul language

-Do not leave room without pass

-Raise your hand

4) Be Responsible

-Work on assigned work during class time

-Turn in assignments on time

-Take notes when needed

-Study for test and quiz

-Clean up after yourself

Advanced Design Apps -Classroom Contract
Mr. Krantz

By reading and signing below, I agree to abide by the school rules as well as the expectations of Mr. Krantz. I understand that the rules were developed to maintain a safe working environment while in the technology classroom

Student's Name: _____ (printed)

- I understand that all school rules listed in the student handbook apply at all times in the technology classroom.
- I will respect other students and their work. I will respect school equipment and property.
- I will use the computer and internet only for class related work and understand the rules and regulations set in the student handbook for its use.
- I am responsible for my behavior and I will behave in a safe manner at all times. I will not horse play because it creates an unsafe environment
- I will wear safety glasses and any other safety equipment if it is required for that project.
- I will follow the safety rules demonstrated by Mr. Krantz for any tool or machine used in the classroom.

I have read and agree to follow the rules listed above. I understand that I may be removed from this class if I fail to act responsibly and safely at all times.

Student Signature _____
Date

Parents,

Please read the classroom contract above and discuss the importance of safe behavior with your child. Encourage him or her to be safe at all times. The only way for everyone to have fun and learn about technology is for everyone to act responsible. By taking this responsibility seriously we can all have a great semester and learn. Please sign below to indicate that you have read this form, the classroom rules and the syllabus with your child.

Respectfully,

Mr. Krantz-Technology Teacher

Parent Signature _____
Date

Email: _____

Phone: _____