Department: Technology Education **Instructor: Bealer Wacker**
Course Title: Innovation Through Engineering
Course #: 70701W

DESCRIPTION OF COURSE: Students will apply the Technological Design Process through open ended problem solving. The application of the design process, along with machines, materials, and informational resources, will result in the processes of invention and innovation to solve various complex problems. Students will then create prototype models in order to test and analyze their designs.

REQUIRED TOPICS OF STUDY	SUGGESTED INTRUCTIONAL TIME	STANDARDS/ ASSESSMENT ANCHORS
Measurement	*1 Periods / Continuous*	*3.6.10.B; 3.7.10.A; 3.7.10B*
Introduction to engineering	*15 Periods*	*3.6.10.B; 3.7.10.A; 3.7.10.B*
CAD – SolidWorks	*10 Periods/ Continuous*	*3.6.10.B; 3.6.10.C; 3.7.10.A; 3.7.10.B; 3.7.10.D; 3.8.10.B*
Coding and digital electronics	*10 Periods*	*3.4.10.B; 3.4.10.C; 3.7.10.A; 3.7.10.B,3.8.10.B*
Basic Machine Safety	*1 Periods / Continuous*	*3.7.10.A*
Structural Design	*10 Periods*	*3.6.10.C; 3.7.10.A; 3.7.10.B; 3.8.10.B*
Transportation systems	*10Periods*	*3.2.10D;3.4.10.B; 3.4.10.C; 3.6.10.B; 3.6.10.C; 3.7.10.A; 3.7.10.B; 3.7.10.D; 3.8.10.B*
Mechanical systems	*10*	
Robotics	*5*	

INSTRUCTIONAL RESOURCES:

Instructional Binders *Computers: SolidWorks / PowerPoint Software/ CorelDraw* *Model Smart 3D design software* *Handouts* *Class website*	*Mechanical Drafting Equipment / Textbooks* *Internet Resources: Moodle* *Technology Internet Resources*

Department: Technology Education Course Title: Fundamentals of Engineering
Teacher: Bealer / Wacker

Class Rules

1. We will respect the rights and responsibilities of others.
2. We will be punctual and accountable for our assigned schedules.
3. We will respect our property and the property of others.
4. We will follow the specific rules of classroom and designated school areas.
5. We will follow the directions as given by the person in charge.
6. Students are to remain seated for the duration of class unless given permission to move about.
7. Students must attain permission to leave the class. (A signed agenda is required. No exceptions)
8. Students must participate in clean up detail in order to provide a safe working environment for all class participants.
9. Students are to utilize designated storage areas appropriately.

Class Attendance Policy (as per school policy)

Lates (per semester)

- 1st and 2nd late = warning
- 3rd late = 1st detention
- 4th & more lates = office referral

Unexcused late and absence = lost time toward 160 minutes (per marking period)

Classroom Procedures

1. Students are to report to class promptly and are to be seated in their assigned seats before the bell rings.
2. Students must remain seated in their assigned seats for the duration of the class period. (No lining up at the end of class.)
3. Students must remain on task while assignments are incomplete.
4. Students must appropriately wear safety glasses when instructed.
5. Students must in an efficient manner return all tools and materials to their designated locations when clean up is called.

Project Information

1. CO^2 Vehicle design, construction, and testing
2. Gears-Hill climb car
3. Mechanical Advantage-Can crusher
4. Coding and robotics- Arduino
5. Slot car
6. Alternative Energy Design
7. Vex Robotics

Grading

1. Project Rubrics
2. Printed Drawings
3. Final Test
4. Quizzes
5. Research Paper
6. Teacher Observations
7. Participation
8. Clean up evaluations

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Parent Signature

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Student Signature

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Student print name