Course Outline and Syllabus-Orientation to Technology

**Instructors Name:** Mr. Smith

**Email Address:** mark.smith@rc255.net

**Location:** Room 703

**Course Description:** Orientation to Technology will provide the student with firsthand experience in everything the Industrial Technology/Pre-Engineering program has to offer. Students will develop skills in record keeping, safety, material selection, material handling, precision measurement, bench operations, problem solving, computer design, prototyping, combination separation, and finishing processes. The student will get exposure to advanced engineering programs like Carveco, AutoCAD, and Mastercam. Students will learn using traditional equipment as well as advanced CNC (Computer-Numerical-Control) equipment. The class is designed to prepare students for the world of work, advancement to the local community college, or a four-year university. **Must receive a C or better to advance to other industrial technology classes.**

**Materials needed for class:** pencil

**Activities**

Design and manufacture long board (student cost $35)

Create Company Logo

Design ePortfolio

Earn Saw Blade National Certification

Create and send emails

**Methods of Instruction:**

• Lecture/Demonstration

• Computer work/Email/box.com, weebly.com

• Lab Activities

**Student Learning Outcomes:**

• develop accurate record keeping devices

• develop and demonstrate safe work habits

• identify and select proper materials

• handle materials with safe methods

• demonstrate effective bench operations

• develop and use problem solving skills

• produce design work using engineering computer software

• demonstrate prototyping skills using lab equipment

• use combination, separation, and finishing skills to develop lab project

• develop portfolio of student work

• develop team building skills

**General Education Outcome:**

• Students will demonstrate the ability to accurately apply correct mathematical methods and

techniques in various applications such as contextual sciences, theoretical mathematics, physics,

natural sciences and other contextual science.

• Students will demonstrate ability to understand the physical world.

• Students will demonstrate competence in using academic technology including finding, evaluating and utilizing appropriate information sources.

• Students will demonstrate the ability to think critically and analytically.

**Graded Assignments & Policies:**

Students can correct assigned work, and quizzes, according to the grading comments. The corrected work accompanied by the original work may be resubmitted for consideration of a higher grade. The resubmitted process ends at the end of the final week of class. Grades are based on the individual performance; no curve is applied. If homework is not completed, student will be not be allowed to continue working in the shop until homework is completed.

The grade will be on a percentage system with points assigned to each activity assigned. The following schedule is an estimate of the work that will be include in the final percentage total. Should items be eliminated the same percentages will stand for the adjusted point total. The student’s grade is based on the individuals completed and correct work.

**Activity/Points Grading Scale**

Quizzes (144 pts.) 100-90 A

Project (600pts.) 89-80 B

ePortfolio (125pts.) 79-70 C

Emails (170) 69-60 D

Completion Grade (125 pts.) 59-F

Final Written & Skills Exam (71 pts.)

**Classroom Polices & Procedures:**

Projects will be assigned due dates based on class progress. All homework, quizzes, and tests can be accessed at www.box.com from anywhere in the world. This helps deal with students forgetting their work at school or home. The student can save all completed work to their own drop box folder giving them access to it at home or at school. This class utilizes handouts, drawings, projects, and portfolios as integral learning tools for the student.

**Attendance:**

Consecutive attendance is crucial to the development of the course materials and work habits. Students are expected to attend each class session. It is the student’s responsibility to obtain missed lecture notes, handouts, announcements and assignments from classmates or teacher. Any items assigned for that class are due after however many days the student was excused from class. The lectures in this course build on the previous class lecture; regular attendance is strongly recommended to understand the material taught. The student is responsible for the material taught in a missed class.

No make-ups for missed class activities will be available for unexcused absences and as stated excused absences require that the work be made up in accordance with the student handbook.

**Make-up Tests:**

Exams each are assigned a point value. Points are awarded for correct answers and demonstrated master of specific skills. Make up testing is allowed at instructor’s discretion and in accordance with student handbook.

Students will submit a portfolio of completed assignments chosen form the best examples of his/her homework. This may include work that has been revised/improved since the original grade was given. ePortfolio rubric can be found online in your Box.com class files.

**Academic Honor Code:**

The objective of the academic honor code is to sustain a learning-centered environment in which all students are expected to demonstrate integrity, honor, and responsibility, and recognize the importance of being accountable for their own academic behavior.

**Academic Misconduct:**

Reed Custer High School Industrial Technology Department demands the highest standards of personal integrity and honesty. Examples of academic misconduct and plagiarism include copying the assignments (electronic files) of others, or allowing another to copy your work (electronic files); cheating on assignments, quizzes, or test; and other examples as described in the student handbook. All consequences of misconduct will be dealt with in accordance with the student handbook.

**Items needed every day for class:**

• Pencil

**Week 1&2 (First Nine Weeks)**

Goal: Complete all safety videos and quizzes and complete safety test with 100% accuracy

Exercises: None

Homework: None

ePortfolio: [www.weebly.com](http://www.weebly.com) Take picture for Portfolio

Quiz: Contextual Math Quiz

Email: Send email to Mr. Smith and Parent(s)/Guardian(s)

**Week 3&4**

Goal: Complete long board design

Exercises: Three tutorial videos and Carveco/AutoCAD to create design

Homework: Complete Layout Tools video assignments remotely with a C or better

ePortfolio: [www.weebly.com](http://www.weebly.com) Take picture for Portfolio

Quiz: Contextual Math Quiz

Email: Send email to Mr. Smith and Parent(s)/Guardian(s)

**Week 5&6**

Goal: Pick Long board design and logo design

Exercises: Insert DXF File into AutoCAD video

Homework: Complete Table Saw videos remotely with a C or better

ePortfolio: [www.weebly.com](http://www.weebly.com) Take picture for Portfolio

Quiz: Contextual Math Quiz

Email: Send email to Mr. Smith and Parent(s)/Guardian(s)

**Week 7 & 8**

Goal: Import AutoCAD file into Mastercam and toolpath design.

Exercises: Toolpath design and email to Mr. Smith

Homework: Complete band saw videos assignments remotely with a C better

ePortfolio: [www.weebly.com](http://www.weebly.com) Take picture for portfolio

Quiz: Contextual Math Quiz

Email: Send email to Mr. Smith and Parent(s)/Guardian(s)

**Week 9**

Goal: Material Selection for Long board and use miter saw, jointer, and tables saw to machine material

Exercises: Secure material and begin the breakout process

Homework: Complete miter saw video assignments with a C or better

ePortfolio: [www.weebly.com](http://www.weebly.com) Take picture for Portfolio

Quiz: Contextual Math Quiz

Email: Send email to Mr. Smith and Parent(s)/Guardian(s)

**Week 10 & 11 (Second Nine Weeks)**

Goal: Glue up material to create a blank one inch wider and one inch longer that final long board size plain & Sand long board blank

Exercises: Joint material and complete glue up process

Homework: Complete jointer video assignments remotely with a C or better

ePortfolio: [www.weebly.com](http://www.weebly.com) Take picture for Portfolio

Quiz: Contextual Math Quiz

Email: Send email to Mr. Smith and Parent(s)/Guardian(s)

**Week 12&13**

Goal: Complete cost of living exercises and engrave on CNC router and sand long board and prepare to take WCA Saw Blade Certification online test

Exercises: Engrave, contour edges, sand and spray finish on long board

Homework: Complete planer video assignments remotely with a C or better

ePortfolio: [www.weebly.com](http://www.weebly.com) Take picture and write summary of activity

Quiz: Contextual Math Quiz

Email: Send email to Mr. Smith and Parent(s)/Guardian(s)

**Week 14 & 15**

Goal: Create company logo for long board and take WCA Saw Blade Certification test

Exercises: Create company logo using Carveco and AutoCAD for laser engraving

Homework: Complete router table video assignments remotely with a C or better

ePortfolio: [www.weebly.com](http://www.weebly.com) Take picture for Portfolio

Quiz: Contextual Math Quiz

Email: Send email to Mr. Smith and Parent(s)/Guardian(s)

**Week 16 & 17**

Goal: Engrave company logo, apply tincture, and final coat long board

Exercises: Engrave, Spray Tincture and finish on long board

Homework: Complete drill press video assignments remotely with a C or better

ePortfolio: [www.weebly.com](http://www.weebly.com) Take picture for Portfolio

Quiz: Contextual Math Quiz

Email: Send email to Mr. Smith and Parent(s)/Guardian(s)

**Week 18**

Goal: Complete Long board and prepare for Final Exam & WCA Skills Exam

Exercises: Prepare for Final Exam Written, WCA Skills Exam & Finish Portfolio

Homework: Finish Portfolio

ePortfolio: [www.weebly.com](http://www.weebly.com) Take picture for Portfolio

Quiz: Contextual Math Quiz

The long board project will cost the student $35 is due at the end of the second week of class. Long boards that are not finished in class will not receive the project completion portion of grade (125 pts.) Long boards not taken home by two weeks after the end of the semester will be finished by the instructor and given to program supporters.

**Industrial Technology Program Rules of Conduct**

The Industrial Technology program uses both dangerous and expensive equipment; therefore, the expectation of behavior in the classroom/shop is higher than the typical classroom. There are eight basic rules and all eight rules relate to shop safety, work skills, and being prepared for class. Must receive a C or better to be eligible to take other classes in the industrial Technology Program.

**Classroom/Shop Rules**

1. No horseplay

2. No running

3. No foul language

4. No yelling

5. No behavior that interferes with others learning.

6. Bring necessary items to class (pencil)

7. Must be in seat before bell stops ringing

8. Must log out of all internet software programs at the end of class

Since the potential for injury to the student and the equipment is higher than the traditional classroom setting, the consequences are higher than those found in the student handbook. **The first time or anytime a student does not adhere to the classroom/shop rules; they are assigned a 15 minutes of service work to be served in the shop or classroom. Infractions of a more serious nature will be dealt with on case-by-case basis.** Student's 15 minutes of service work will consist of program related schoolwork, repairing/maintaining shop equipment, maintaining shop cleanliness, or any other school related activity that will help the student and the program. This not only enforces the idea that safety and preparation come first, but also helps enforce expectations with real world consequences and helps build positive ownership in the program. If the student refuses to adhere to the rules they will not be allowed back into the classroom or shop until they do.

**The reason for this is simple. If we keep the standard high, the chance of injury or mishap is greatly reduced. I have used this process for years and consequently have never had a serious mishap with a student or piece of equipment.**

Please complete the spaces below and return this sheet to Mr. Smith. Student will receive points towards their grade if turned in on time. Student will receive diminished points based on date turned in after due date. If not turned in by end of first week of class, student will not be allowed out into the shop. This document also doubles as a photo release. We market our program and students to aid in developing industry supporters, internship opportunities, and job opportunities for students after high school.

**Student**

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Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Phone \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Parent/Guardian**

Written Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Email\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Phone\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_