**MANUFACTURING ENGINEERING - S Y L L U B U S**

**Instructor:** Mr. Casper **Classes that may enroll:** 10-12 **Room**: 123 **Credits**: 1

**Book:** Handouts **Prerequisites:** None **Course #:** 08715

**Contact Information:**

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**Course Description:**This advanced, course allows high school students to earn both school and college credit while having fun. Students will be given the opportunity to design and build a major class project such as a mini-chopper motorcycle, high-mileage vehicle, formula 1 go-kart, or grill, etc. for a local manufacturing company. Student will complete or be judged against students from area school districts. This course will include skills needed in manufacturing, such as drafting, welding, and machining. It will also provide students with experience in budgeting, presenting to groups, teamwork, problem solving and communication. Students will gain understanding of all areas of technology education and will gain valuable engineering and problem solving skills. In addition, student may earn Articulated Credit(s) from Lakeshore Technical College (LTC) by completing this course in good standing. (Note: This course can be taken more than one time for credit.)

**Grading Scale:**

* 1. = A

89-80 = B

79-70 = C

69-60 = D

0-59 = F

**Gradebook:**

30% Weekly Journals

30% Observations

20% Participation

10% Peer Evaluation

10% 5 Hour Requirement

*Final Exam – 10%*

**Homework:**

* Homework assignments may consist of but are not limited to chapter reviews, worksheets, lab activities, technical manuals, study guides, presentations, posters, demonstrations, etc.
* Log individual progress on the Weekly Journal sheet and submit on the last day of the week. Students who are absent will receive NO credit for that day.
* Drop Box: Place all assignments and late work above the folder.
* Cheating/Plagiarism: Cheating or plagiarism will result in a 0% for the assignment/task.
* Students are expected to spend a minimum of 5 hours outside of regular class time working on the project. Log your time on the punch card and have the instructor initial.

**Missing/Late Work:**

* It is the student’s responsibility to acquire assignments when absent.
* Students are granted 1 day per excused absence. Late work = 10% deduction
* Late work will not be accepted during the last week of each quarter.

**Core Abilities & Skills:**

Precision measuring, machine safety, project, budget, and time management, mechanical design print reading, prototyping & 3d printing, team work, quality applications/control, troubleshooting problem solving and repair, marketing & public speaking, machine tooling skills, GMAW SMAW GTAW welding, layout & fabrication, drilling reaming threading, distortion control, jigs and fixtures, power mechanical theory application, sheet metal cutting and forming, tube bending and notching, and tolerances

**2017-18 Formula Student Scope & Sequence**

1. Housekeeping
2. Measurement
3. Dismantle Shawano Car
4. Safety Demonstrations
5. Safety Tests
6. Bill of Materials
7. Seek sponsorships
8. Fundraiser
9. Order Parts
10. Wire Engine
11. Engine Break in
12. Prototype
13. Fabricate/Assemble
14. Fiberglass body
15. Paint
16. Test & Tune