

Computer Integrated Manufacturing

COURSE SYLLABUS

Boca Ciega High School

Fall 2020 – Spring 2021

Mr. Medici

Room9-1, 9-2 & 9-3

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COURSE OVERVIEW

Computer Integrated Manufacturing (CIM) is the study of manufacturing planning, integration, and implementation of automation.

The course explores manufacturing history, individual processes, systems, and careers. In addition to technical concepts, the course incorporates finance, ethics, and engineering design. This reflects an integrated approach that leading manufacturers have adopted to improve safety, quality, and efficiency.

Utilizing the activity-project-problem-based (APB) teaching and learning pedagogy, students will analyze, design, and build manufacturing systems. While implementing these designs, students will continually hone their interpersonal skills, creative abilities, and understanding of the design process. Students apply knowledge gained throughout the course in a final open-ended problem to build a factory system.

Computer Integrated Manufacturing is a high school level course that is appropriate for 10th, 11th, or 12th grade students interested in manufacturing and automation. It is recommended that students are concurrently enrolled in grade level mathematics and science courses and have successfully completed the Introduction to Engineering Design (IED) course.

CIM is one of the specialization courses in the Project Lead The Way high school engineering program. The course applies and concurrently develops secondary-level knowledge and skills in mathematics, science, and technology.

COURSE RESOURCES

- Engineers Notebook
- Powerpoints
- Handouts
- Computer/software

STUDENT EVALUATION AND ASSESSMENTS

- Class Assignments – 50%
- Cornell Way Notes – 35%
- Class Notebook (part of the school-wide binder initiative) – 15%
- Final grades for each 9 weeks are calculated using Pinellas County requirements: 90-100% (A), 80-89% (B), 70-79% (C), 60-69% (D), below 60% (F). For example, a student earning 90-100% of all available points for a grading period will earn an A for that grading period.
- All students will be given a semester exam, both fall and spring, and must take it unless the student qualifies for an exemption. A student can only exempt one semester exam in a year long class. Students who do not maintain a 3.0 or above grade point average and have more than the designated number of absences will also be required to take the course final in both terms.
- An end-of-year comprehensive exam will be given following the spring term. **All students are required to take the comprehensive exam at the end of the spring term. This exam is provided by PLTW.**

CORE PHILOSOPHIES AND GUIDING PRINCIPLES

In this course, we will use a variety of instructional methods, including lecture, multi-media, student presentations, collaborative group work, and both large and small group discussions. I am a supporter of “active learning.” In this course, that means reading the information presented, completing assignments with integrity, participating in discussions, asking questions, assisting other students to sharpen skills, and studying for exams. My role is to help you learn, but you must take responsibility for your own success.

Essentials for course success:

- **Attendance:** There is a clear correlation between attendance and success in class. The responsibility to come to class is yours and as such, **you are responsible for any material missed due to absence.** Though I am happy to assist in the case of excused absences, it should be noted that attendance, by itself, is not enough to ensure student success; you must be prepared to engage in a meaningful way.
- **Civility and Respect for Learning:** The classroom is a place for serious learning, active engagement, and respect for fellow learners. Please be on time—coming in late is disruptive to both me and your fellow students. Class is over when I am finished. Please don't close your notebook, zip up your backpack, etc until we are completely finished. Please turn off/silence, and put away all cell phones and portable electronic devices (and take ear buds out of your ears), before class begins.

COURSE POLICIES AND PROCEDURES

A. Materials:

- Students should come prepared with writing utensils each day.
- Notebooks will be needed. A 2” to 2.5” 3-ring binder is recommended. They can also be purchased at any location the parent finds suitable or in the school bookstore.

B. Make-up Work/Attendance:

- Students are expected to attend class each day it comes up on the Blue/Gold rotation.
- It is your responsibility to obtain the work that you missed on the day that you return. You have the number of days equal to the number of days absent to turn in the work. Any work assigned prior to your absence is due on the date you return.
- Tests and quizzes must be made up within one week of the absence and must be made up outside of normal class time.
- If you are absent, please make arrangements with classmates to get any notes you may have missed.

C. Tardiness:

- It is extremely important to be in class on time. The Boca Ciega tardy policy will be strictly enforced. If you are tardy, please check in with me at the end of class to ensure that your attendance is coded correctly. Punctuality is a life skill . . . please work diligently to be on time all the time.

D. Assignments

- All class documents can be found in CANVAS.
- Assignments are due at the conclusion of class on the designated day placed in FOCUS.
- Completed assignments uploaded into FOCUS, at the date due, unless otherwise instructed.
- Late work must be completed, but will be awarded credit in accordance to PCS policy. The assignments must be completed as the skills in one assignment are often included in subsequent assignments. If there are extenuating circumstances, arrangements must be discussed prior to the due date.

E. Resources

- Autodesk Software – Students in PLTW classes can get and use at home, free of charge, the Autodesk Inventor software. We use Inventor Professional 2020.
 - www.autodesk.com
- Quizlet – Students in PLTW classes will need to sign up for a FREE account in Quizlet. Once signed up, search for Boca Ciega PLTW.
 - www.quizlet.com

- Facebook – Facebook has some great pages to “Like” by searching for Autodesk while logged in. It is NOT a requirement to use Facebook, it is just a good resource.
- YOUTUBE – This site has some great how-to videos on using Autodesk Inventor.

E. Class Way of Work

- Be in your seat, prepared with the proper tools, and ready to work **when the bell rings.**
- Treat your colleagues, teachers and their personal property with respect.
- Communicate in positive ways- **foul language or put-downs will not be allowed.**
- Come each day committed to giving your best.
- Work together as a team so everyone succeeds.

F. School Rules

- The PCSB Student Code of Conduct will be used to handle discipline issues.

UNIT OVERVIEW

- *Unit 1 Principles of Manufacturing*
- *Unit 2 Manufacturing Processes*
- *Unit 3 Elements of Automation*
- *Unit 4 Integration of Manufacturing Elements*

