Computer Integrated Manufacturing Syllabus 2021-2022

1. Instructor Info

Mr. Resendez

- School Number: (281)920-8000 ext. 036202
- Email: felipe.resendez@houstonisd.org Best option
- Room: Room A204 or V109 or v105
- Remind App: Text @cimre to 81010
- *I do not work 24/7. I will address matters accordingly up to 48hrs as noted by district policy.*

2. Course Info

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.

The course of study includes:

1. Principles of Manufacturing
    a. History of manufacturing
    b. Manufacturing as an enterprise
    c. System process flow
    d. Automated control

Computer Integrated Manufacturing Syllabus 2021-2022

    e. Cost of manufacturing
2. Manufacturing Processes
    a. Design considerations for manufacturability
    b. Property analysis
    c. Ethics and safety
    d. Creating a prototype
    e. Manufacturing processes and machines
    f. CNC mill programming and usage
3. Elements of Automation
    a. Robotic simulation and physical testing
    b. Power systems
    c. Pneumatic system design and construction
4. Integration of Manufacturing Elements
    a. Computer Integrated Manufacturing system types
    b. Manufacturing and automation career research
    c. Manufacturing system design and construction
5. Supplies

Please have the following supplies:

- Blue or Black Pens that DO NOT bleed through paper
- Pencils and erasers
- Folder or binder
- Engineering Notebook (provided by teacher)
- Calculator (scientific or graphing)
- Optional: colored pens or pencils for notes
- Scotch tape-Mandatory

<u>If you are able to, please bring in the following additional supplies:</u>

- Box of Tissues
- Hand Sanitizer
- Clorox Wipes, Lysol Spray, etc.
- Expo markers

Computer Integrated Manufacturing Syllabus 2021-2022

6. Grading Policy

Each grading period (every 6 weeks), your grade in this class will be calculated using the following weighting:

30% Minor	• Classwork • Homework • Participation • Quizzes
70% Major	• Tests • Projects • Notebook checks (content and organization)

7. Absence Policy

If you are absent, you will have ***two days*** to turn in missing assignments, to take a missed test or quiz, or to make alternative arrangements. All assignments from the preceding week will be available on the Hub. Paper copies can be given to students by Mr. Resendez during the first five minutes of class or during tutorials. If the assignment is not turned in within ***two days,*** you will receive a reduced grade for the assignment. See me **at lunch, before or after school** to reschedule quizzes and tests.

8. Late Work Policy

Unexcused late work will receive a penalty of 10 points and will only be accepted until one week after the original due date. After one week, it will become a zero.

9. Tutorial Policy

Tutorials will be during lunch in V105 on Tuesday and Thursday after the first major exam. Please make appointment on my booking page by clicking link below.

Lunch Tutorial Booking

Computer Integrated Manufacturing Syllabus 2021-2022

10. Cell Phone Policy

Students are not allowed to use their cell phones in class at any time for any reason per school policy. Students who do not comply with the Electronics Policy in the Westside Student Handbook may have their cell phones taken away and turned into the office for parent pickup.

11. Makeup Policy

Students may makeup major grades, excluding projects, that they receive a 75 or less on. Makeups may only be scheduled during tutorials and will only be rewarded a maximum grade of 80%.

12. Classroom Expectations

Students are expected to act in accordance with the Code of Student Conduct in the Westside Way Student Handbook.

Typically, for Level I offenses, students who fail to follow classroom rules will:

- First violation: Be given a verbal warning
- Second violation: Student/Teacher conference.
- Third Violation: Disciplinary action which may include referral to dean, removal from classroom, and/or parent/coach/club sponsor contact.

Level II or II offenses will result in immediate disciplinary action as written in the Student Handbook.

Expectations

My expectations of you: I expect each of you to be on-task for the full duration of every class. I also expect that all of the work you create in this class is high quality and something you can be proud to keep for future reference. By the end of this year, every student in this class will have a greater appreciation of how engineering skills will contribute to your success in your education and your future.

What you can expect of me: As you apply hard work and perseverance to your work, I will provide you with my knowledge, preparation, and whatever support you need to understand and master the material**.** I will do my best to challenge you and prepare for our class time together each day. **My goal is to help each, and every student prepare to pursue engineering or technology as their life's work.**

Computer Integrated Manufacturing Syllabus 2021-2022

13. Academic Integrity

If a student violates the WHS Honor Code, they will receive a "0" for the schoolwork, a "U" in conduct, and disciplinary action. In addition, this conduct is considered a Level II violation of the Code of Student Conduct. Please see the Westside Way Student Handbook for a detailed explanation.

14. COVID Safety

Per HISD policy, students must wear a facemask that covers their nose and mouth at all times during class. This policy is in place to ensure the safety of all students, teachers, and staff in the building in order to keep learning in person. Students who violate the district and school COVID safety protocols may first be given a warning, and then removed from the classroom for disciplinary action.

15. Tutorials

Tutorials will be held in Room V109 or V105 during lunch Tuesday and Thursdays Students can use this time to work on classwork, makeup assignments, and ask for extra help.

16. Project Lead the Way (PLTW)

This class follows a project-based learning format, which allows students to become more responsible for their learning and prepare them for college and STEM careers. Throughout the school year, students will still be assigned quizzes, tests, a midterm, and final examination. This is to prepare them for the End of Course (EOC) exam that is required by Project Lead the Way (PLTW). The EOC is given at the end of the school year and is an opportunity for students to receive college credit for this class if they demonstrate mastery. For more information on EOC scores, contact Dean Mayfield for your login information.

Computer Integrated Manufacturing Syllabus 2021-2022

Instructional Guidelines Agreement

(Due by Monday, September 30th)

Tear off and turn into teacher

We, the undersigned, have read, understood, and agree to abide by the guidelines described in the 2018-2019 Instructional Guidelines packet for this course. We also understand that failure to comply will result in the consequences mentioned in the guidelines. I have also been informed that progress reports will be issued every 3rd and 6th week period of each six-week period.

Student Name (print): _____

Student Signature: _____ Date: _____

Parent/Guardian Signature: _____ Date: _____

Daytime phone Number: _____

Evening Phone Number: _____

Parent email address: _____

Allergies/Questions/Concerns:_____
_____
_____
_____