Advanced Manufacturing - Syllabus

Instructor:
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Classroom
C133

Course Description
Advanced Manufacturing (CPA, Grades 11-12, WPP) 2.5 credits (Prerequisite: Successful completion of Engineering & Architectural Design and teacher recommendation)
In this hands-on classroom environment students are able to explore their personal interests while using advanced manufacturing technologies. Skills learned in this class can be directly applied to future career possibilities and secondary education. Students will learn safe and appropriate operating procedures for advanced manufacturing equipment such as; CNC Routing / Cutting / Forming, Laser Engraving and Laser Cutting, Practical and Production-based 3D Printing, Vinyl Cutting, Plastic Extrusion. This course is designed to provide students with highly technical skills and knowledge using the latest industry standard technologies. Fine Arts credits available.

Grading Policy / Student Assessment
Points based grading: Total points equate to approximately: Class Assignments 65%, Project Assessments 25%, Participation 10%

Safety
At times we will be using shop equipment including (but not limited to) hand tools, power tools, stationary saws, drill presses, CNC routers, laser engravers, etc. Students are expected to conduct themselves in a safe manner. Students will be expected to wear appropriate personal protection equipment (PPE) at all times when working with tools; safety glasses, hearing protection, gloves, etc. There is a zero tolerance policy for any students who do not follow the safety rules.

Electronic Device Policy
Electronic devices (cell phones, ear pods, smart watches, etc.) are to be turned off and placed in the designated area (hanging pocket). Students who do not follow this policy will be issued a disciplinary action form. Students are never to use earbuds or headphones in the shop space.

General Class Outline (subject to change based on student interest)

CAD Refresher	Circuitry	Labor (Time) Management
Engineering Design Process	Soldering	Construction Methods
Engineering Notebook	Arduino	Design Challenge Projects
Technical Writing	3D Printing	CAM/CNC
Proposal Writing	Sourcing Materials	
Robotics	Cost Estimating	

Extra Help & Makeup Work
Extra help or work on projects will be available by appointment before or after school in room C133. You need to let me know if you are planning to come.

Harassment and Bullying
This classroom is a welcoming place for all and will not tolerate harassment on the basis of race, national

origin, sex, sexual orientation, gender identity, religion, or disability. Bullying is causing repeated and intentional harm to another person or group of people. If the act targets a person due to their differences, the act is considered harassment and has its own set of consequences. While bullying is defined as a repeated act, harassment can take place only once. Be mindful of words and actions and the consequences they may have.

Use of Technology
All use of the Internet must be in support of the educational objectives of classroom projects and activities. Students can be held accountable for all communications and information accessed via the school's network.

Unacceptable Use
(1) Unauthorized downloads and other manipulations of hardware, software, or network. (2) Playing games unless specifically authorized for instructional purposes. (3) Accessing inappropriate or offensive content that violates school policy or endangers the network. (4) Establishing network or Internet connections to instant messaging and VoIP social platforms.

Academic Integrity
All students' academic work must reflect their own honest efforts. Cheating and plagiarism in any form will not be tolerated. Any student known to have cheated will be subjected to penalties, up to receiving "0" for the work.

AI Policy
While AI has been a fixture in modern life for many years, it has recently become imperative that the high school set expectations and parameters for its use. While traditional forms of AI can be used in a positive manner to increase efficiency, the aim of this new policy is to limit and control the use of generative AI. Generative AI, such as ChatGPT, is able to produce content (written, audio, visual) which bypasses the creative functions of its users. Similar to the school's policy on plagiarism, students at WRHS are responsible for submitting their own work, displaying their own understanding, knowledge and creativity. Like with plagiarism, teachers will be monitoring the use of AI within their classroom and student work. It is the responsibility of the student to prove that AI was not used by showing the evolution of their work through outlines, drafts, editing, proper citations, etc. If the student admits to using AI or cannot sufficiently defend the authenticity of their work, the consequence will be the same as plagiarism. AI should be used as a tool, a way to augment creativity. It should not be used as a substitute for creative thought. It should be used in an ethical way and not to misrepresent, deceive or demean others.

WRHS Student Handbook

2024-25 Academic Integrity Policy

WRHS Lab Safety Rules

Electronics/Cell Phone Policy

Attendance Policy
16/8 Missed classes for a full/half year course will result in the loss of class credit as stated in the WRHS Student Handbook.

Student Learning Expectations

Students will . . .

- exercise responsible citizenship
- think critically and solve problems
- collaborate and learn actively
- communicate effectively
- think creatively
- use technology effectively