There are so many reasons to consider Mechatronics & Robotics
Did you know?

We have a skills gap: Our nation is facing a critical shortage of highly skilled workers in STEM occupations. In 2010, the # of college graduates and technicians with postsecondary STEM credentials was 225,000; far short of the 2 million needed by 2025.

The skills-gap is compounded by an aging workforce. 79 million Baby Boomers began retiring around 2000 and are continuing to do so. This includes mechatronics workers!

Women are particularly underrepresented in STEM and, therefore, missing out on scholarships and high-earning opportunities for which they are equally well-suited.

Re-shoring: Up to 3 million manufacturing jobs are projected to return to the U.S. by 2020 in part because off-shoring cost savings have diminished in recent years. Mechatronics & robotics are critically important parts of advanced, high tech manufacturing.

The Mechatronics & Robotics program, coupled with some additional postsecondary training, will prepare successful students for high skill technician jobs with family-sustaining wages. Many companies support continuing education costs for those who wish to pursue related engineering or management degrees.

How do you know if Mechatronics & Robotics is the right program for you?

If you respond yes to two or more of these statements, it may be a good indicator:
1. I have always enjoyed playing with LEGOS.
2. I enjoyed participating in LEGO robotics.
3. I like to take things apart to see how they work.
4. I enjoy working with my hands.
5. I am interested in working with robots and programming.
6. I like to troubleshoot problems with machines and computers.
7. I enjoy working with tools and creating things.

To learn more about Chippewa Valley Schools’ Mechatronics & Robotics program and the related postsecondary MAT2, please visit:

www.chippewavalleyschools.org/academics/careers/mechatronics-and-robotics-new-program/

Mr. Jomo Walker
Mechatronics & Robotics Teacher
Dakota High School
Phone: 586/723-2731
E-mail: jwalker01@cvs.k12.mi.us

NOTICE OF NONDISCRIMINATION It is the policy of Chippewa Valley Schools not to discriminate on the basis of race, color, religion, national origin or ancestry, gender, age, disability, height, weight or marital status in its programs, services, activities, or employment. Inquiries related to nondiscrimination policies should be directed to: Civil Rights Coordinator, Assistant Superintendent of Human Resources, Chippewa Valley Schools Administration, 19120 Cass Avenue, Clinton Township, MI 48038 Phone: 586-723-2090 / Nondiscrimination inquiries related to disability should be directed to: Section 504 Coordinator, Director of Special Services, (same address) Phone: 586-723-2160
Chippewa Valley Schools has an exciting career technical education (CTE) program called Mechatronics & Robotics. This program is offered to students entering 10th, 11th or 12th grades. It is taught at Dakota High School; however, students from Chippewa Valley High School may also participate via shuttle service provided by the district.

**What is mechatronics?**

The term may be unfamiliar, but it simply comes from combining the words mechanical and electronics, though it actually includes even more; mechatronic systems are also computer-controlled. It is an integrated, multidisciplinary study of various systems that work together to form the basis of “smart” devices. Thus, students will learn about robots, machines, electronics, pneumatics & hydraulics, electrical motor controls, sensors, computer-aided design (CAD), programming, programmable logic controls (PLC), diagnostics, computer numeric control (CNC), and other topics related to automated systems & robots.

- Qualifies for VPAA credit (visual, performing and applied art)
- Qualifies for Math-related credit in the senior year.
- May replace 1 credit of World Language with 1 credit of CTE when CTE is taken as a 2nd or additional VPAA credit.

Successful completers of this STEM* based program will gain foundational knowledge and skills in the high-demand, multidisciplinary area of mechatronics. This important knowledge is needed not only by highly skilled technicians who help install, program, trouble-shoot and fix equipment problems, but also by engineers who plan, design, develop, or otherwise work with complex mechatronic systems. The diagram below helps describe the "ingredients" that make up mechatronics and a few of the industries and applications that need this expertise:

Students interested in this program **must have two elective hours available for the full year in their 10th, 11th, or 12th grade schedule.** Students are strongly encouraged to commit to two consecutive years of study, with a second 2-hour block/yearlong course.** Second year students will go more deeply into mechatronics and will have expanded opportunities for in-depth, project-based application, potential to earn FANUC certification, as well as leadership/teamwork development, participating on a robotics team, and additional work-based learning experiences. There are advantages to successful program completion such as articulated college credit and including possible acceptance into the competitive, postsecondary Michigan Advanced Technician Training (MAT2) program for Mechatronics Technicians. Visit: www.Mitalent.org/mat2

*STEM is the integration of science, technology, engineering, and math.

**Students who can fit the 2-hour block course into two consecutive years will benefit greatly by doing so. The first year course will address all 12 of the State of Michigan mechatronics curriculum segments and standards, but the second year of study—as an advanced student—will provide expanded opportunities for in-depth, project-based application, and potential to earn the highly desirable FANUC certification.