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 400,000 needed by 2015. (Wow, that's next year!)
- 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' *NEW* **Mechatronics & Robotics** program and the related postsecondary

PLEASE VISIT

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

CTE™ Learning that works for Michigan

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Chippewa Valley Schools

Career Technical Education

Announces a *NEW* program for 2014/15!

Mechatronics & Robotics

Mechatronics & Robotics

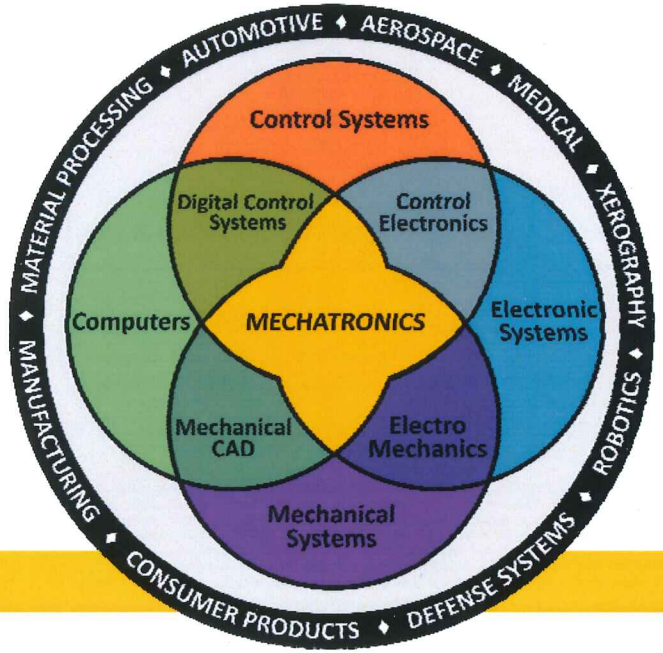
Chippewa Valley Schools has an exciting *NEW* career technical education (CTE) program called **Mechatronics & Robotics** beginning fall 2014! This 2-year program is being offered to students entering the 11th grade in September. It will be taught at Dakota High School; however, students from Chippewa 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 *mecha*nical and elec*tronics*, 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 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 that are used in automated systems & robots.

- **Qualifies for VPAA credit (visual performing and applied art)**
- **Qualifies for Math-related credit in the senior year.**

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 <u>two</u> elective hours available for the full year in their 11th grade schedule**. Ideally students will commit to two years of study, with another 2-hour block/yearlong course in the senior year.** Second year students will go more deeply into mechatronics and will have expanded opportunities for in-depth, project-based application, in the student's area of interest, as well as leadership/teamwork development, and additional work-based learning experiences. There are advantages to successful program completion such as articulated college credit and a higher probability of acceptance into the competitive, post-secondary Michigan Advanced Technician Training (MAT2) program for Mechatronics Technicians. Visit: www.Mitalent.org/mat2

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

***Students who can fit the 2-hour block course into both their 11th & 12th grade years will benefit greatly by doing so. The 11th grade course will address all 12 of the State of Michigan mechatronics curriculum segments and standards, but the second year of study in the 12th grade—as an advanced student—will provide expanded opportunities for in-depth, project-based application, in the student's area of interest.*