

# MAKING THE Connection

TO  
Career Technical Education

Thursday, January 21, 2021

## The Frederick V. Pankow Center

Career and Technical Education

Welcome to the Future!

### MECHATRONICS

a multi-disciplinary approach to product and manufacturing system design.

Roughly five years ago, Pankow administrators John Haas and Dean Sabelhaus decided to look into developing a course that would fulfill a host of career preparation pathways to meet local industry demand.

Additionally, students in Mechatronics learn the basic principles of hydraulics, pneumatics, and electrical circuitry. Students can be approved for a second year in the program as an elective to advance their understanding of the field of Mechatronics.

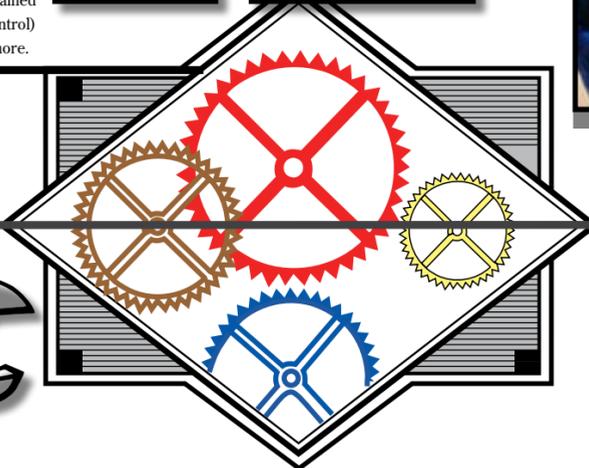
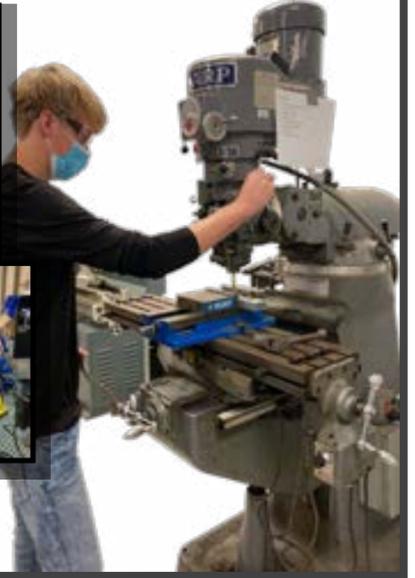
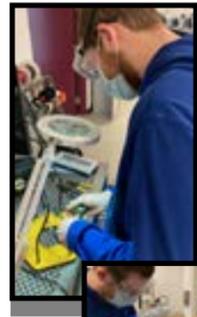
Additionally, they were looking to establish a "feeder" course that would enhance the district's FIRST (For Inspiration and Recognition of Science and Technology) Robotics team called the Rockem Sockem Robots, Team 453. FIRST Robotics is an internationally recognized student engineering program that L'Anse Creuse has been a part of for well over a decade. "Mechatronics" is the course that L'Anse Creuse first piloted and then adopted to meet this unique career pathway.

Instructor Christian Siefen was hired to teach and develop the course based on curriculum from the variety of disciplines that make up the field of mechatronics. His previous experience as a FIRST Robotics coach made him an ideal candidate for the position.

"Mech", as the course is referred to by students and staff, is a one year program designed to give students the most current industry skills in electromechanical engineering. Students are trained in operation and programming of CNC (Computer Numerical Control) machines, IOT (Internet Of Things) devices, mobile robots and more.

Mechatronics education aims at teaching a design process that unifies fields of engineering and provides students with multiple platforms from which to launch their careers and career choices.

The intended impact is student exposure to a whole host of emerging career opportunities and a fundamental understanding of the need for multi-disciplinary collaboration in industry.



## WRENCHES OF THUNDER

When the Frederick V. Pankow Center opened its doors in 1976, a handful of Career Education elective opportunities were offered to students at L'Anse Creuse Public Schools for the first time. Among the first program offerings was Automotive Technology.

Four decades later, this NATEF (National Automotive Technicians Education Foundation) certified program is still running strong and has actually expanded, offering three years of curriculum for students.

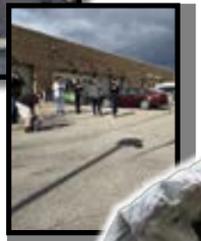
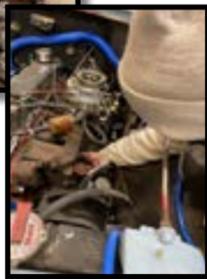
Instructors Ken Kramer and Dan Swartz are both ASE Certified Master Mechanics who each bring a host of unique experiences to their classrooms and labs. Together, they provide a well-rounded approach to automobile maintenance and repair for their students.

First year students enrolled in "Auto Tech 1" learn shop safety, tool usage and application, and general service facility operations. They also learn how to change and maintain all the different automotive fluids and how to safely operate an automotive lift system.

Students in Auto Tech 1 also learn about tires: their sizing, how to plug a flat, proper tread wear, and how to properly change and install them. Students completing one year of Automotive Technology earn the Valvoline Oil certification, the (ALI) American Lift Institute certification, and the (TIA) Tire Institute of America certification.

Second year students enrolled in "Auto Tech 2" focus more on automotive electronics, electrical systems, suspension systems, and a more advanced understanding of all of the interrelated systems in modern vehicles. Students that decide to take a third year in Auto Technology learn about engine efficiency, engine performance and tuning, and have the unique opportunity to practice on a state-of-the-art dynamometer.

The Pankow Center's Automotive Technology program has been involved in the Detroit Autorama for many years and has received several awards for its entries. This competition allows students to be involved in a collaborative project and it also gives them the opportunity to see the unique work that other automotive enthusiasts have created.



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For more information about any of our career based courses, visit us at the The Frederick V. Pankow Center link at [www.lc-ps.org](http://www.lc-ps.org)

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For more information about CTE, contact Shannon Williams at 586-228-3488 or [swilliams@msd.net](mailto:swilliams@msd.net)



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