



PERRY CENTRAL JR. /SR. HIGH SCHOOL

**Governor's Workforce Cabinet
December 2023**

Perry Central Community Schools - In the Middle of Everywhere

- Small School, Big Opportunities
 - 1250 students PK-12
 - 42% Free and Reduced Lunch
- Early College High School - 35-40% ICC; 2024 - 3 AS Degrees
- 12 Career Pathways aligned to Ivy Tech Certificates/ Industry-Based Certifications
- Personalized Learning/Flexible Scheduling
 - Internships - 75% Seniors
 - Evening Courses
- Academic Rigor plus Technical Skills = Success



Work-Based Learning



- Workplace Challenges
- School Based Enterprises
- Career Aligned Internships
- Pre-Apprenticeship (OWBL Approved)
- DOL Approved Apprenticeships - Industrial Manufacturing Technician and Education Professions

Class of 2023: 89 of 93 students have a WBL experience.



In order to maximize a student's success, we must:

- Ensure Hoosier students have the *knowledge & skills developed* from one grade level to the next
 - Foundational knowledge in reading and STEM
 - More intentional skill development - project-, service-, work-based learning
 - Indiana's Employability Skills Standards - communication, collaboration, work ethic
- **Provide pathways & opportunities** to ensure lifelong success
 - Credentials of value

Credentials of Value/Experience = Success

OUR GOALS:

- To help our students find their purpose through their strengths and interests
- To keep our students in Southern Indiana
- To provide a bridge to a high quality of life for every single student!



OUR STUDENTS

COMMODORE
MANUFACTURING

What is Commodore Manufacturing?

- What? Student led manufacturing facility; we serve as a vendor for local companies
- Partnerships: CM started in a partnership with Jasper Engines and Waupaca Foundry 7 years ago
- Big Idea: Embedded Work Based Learning that leads to a transferable credential: Ivy Tech Technical Certificate or DOL Approved Apprenticeship.



Expanding Our Partners

- Waupaca
- Boston International
- Perry County Hospital
- Webb Wheel
- University of Evansville
- Crystal Water Design Company
- Tie Dye Owl
- Evansville Electric Vehicle
- Perry Central Athletics
- Perry County 4-H
- ATTC



Waupaca Foundry

- Largest employer in our area
- World's largest gray iron casting supplier
- Produces brake rotors and drums, brake calipers, crank shafts, differential carriers & cases and flywheel housings



Commodore Manufacturing Production for Waupaca Foundry



Commodore Manufacturing Production for Waupaca Foundry

- Gun Plungers
- Slag Rakes
- Hand 4" Plungers
- Basket Feet
- Pipe Slag Rakes
- Rocky Rods
- J-Hooks
- Fire Hose Clamps
- Metal Shipping crates
- Handrail sections
- Machine Guards



Students produce invoices, facilitate logistics and conduct all communication with our business partners.



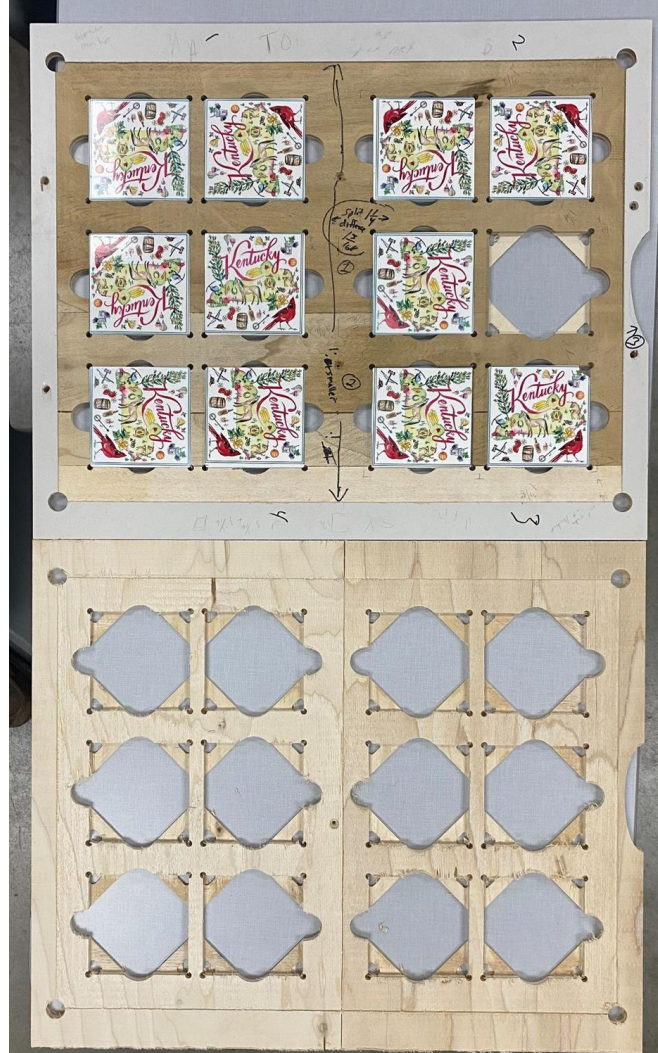
Boston International

- Local company that specializes in the gift industry
- CM designs and produces a double sided acrylic napkin display on our CNC laser
- Engineering students designed the shelving; CM produces the shelves
- CM is the only vendor for this product for Boston International



Boston International Tile Jig

- BI brought a workplace challenge - to create a tile jig
- Purpose - to help with repeatability and speed
- CM designed & created the jig
- Before the Jig - 1 tile per run
- After the jig 1100% increase per run



Commodore Manufacturing Custom Products



Safety Procedures/Management

- Team Leader - Establishes production schedules, monitors production goals, assists in continuous improvement
- Quality Captain - Helps maintain quality/training
- Safety Specialist - Maintains Emergency Procedure Manual, provides training, maintains OSHA requirements
- Lead Designer and CNC Operator - Oversees product design and training of CNC operations



Outcomes

- Since the creation of Commodore Manufacturing, the class has sold \$280,264.51 in products.
- Students keep 60% of the class profits and reinvest 40% into the business.
- Average pay ranges from \$2,000-\$3,000 per student during the school year.
- Student pay is determined by attendance and work completion.



Advanced Manufacturing

Industrial Maintenance Technician – Mechanical

Principles		CTE Concentrator A		CTE Concentrator B		Pathway Capstone	
7108	Principles of Advanced Manufacturing	7103	Advanced Manufacturing Technology	7104	Industrial Maintenance Fundamentals	7261	Industrial Maintenance Capstone

- Industry Credentials - OSHA 10, National DOL Apprenticeship Certification
- Work-Based Learning Opportunity: Enterprise/Internship
- Dual Credits: Ivy Tech Certificate Industrial Mechanical (20 credits)
- Technologies: Welding, CNC Operations, CAD, VCARVE

DOL Apprenticeship: Industrial Technician

- Next Level Program of Study aligned to Related Instruction
- Commodore Manufacturing On the Job Training
- Students finish certificate after graduating from high school



COMMODORE
ENGINEERING

Science, Technology, Engineering and Math Engineering

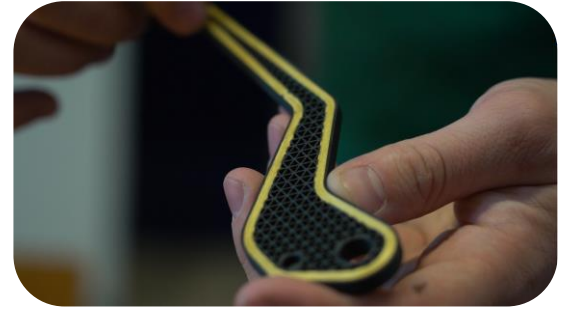
Principles		CTE Concentrator A		CTE Concentrator B		Pathway Capstone	
4802	Introduction to Engineering Design	5644	Principles of Engineering	5538	Digital Electronics	5698	Engineering Design and Development
				5650	Civil Engineering and Architecture		

- Industry Credentials - Additive Mfg Stratasy's & Markforged, CAD Certifications
- Work-Based Learning Opportunity: Enterprise/Internship/Workplace Challenges
- Dual Credits: Ivy Tech CAD Certificate, Design Technology Certificate, Plus Indiana College Core Classes
- Technologies: CNC Routing, Laser Cutting, Inventor, Fusion 360, VCarve

ENGINEERING WORK BASED LEARNING

Additive Manufacturing

Printers



Fused Deposition Modeling (FDM) Models

- **Ender 3s** - Intro level printers
- **Uprint, F370, Makerbot Method** - Industry grade printers (Better quality of prints and material is more durable or flexible)
- **Markforged** - Uses continuous fiber reinforcement (Fibers: Fiberglass, Carbon Fiber, Kevlar)

Objet30 - Polyjet printer

Elegoo Jupiter SLA printer- features a vat of resin that is cured by a UV light to create a solid print



ATTC Oil Pump Caps

- The company who previously made these caps for ATTC quit manufacturing them
- We redesigned the caps in CAD to meet ATTC's needs
- The caps were printed and sold to ATTC



CES Paint Can Holder

- CES employees' holders kept breaking
- Redesigned and made more durable by adding fiberglass using Markforged printer



Parker Meggitt Project

- Designing a universal jig that will fit all of the heat exchangers in production at Parker Meggitt
- Currently they have hundreds of fixtures/jigs for each individual heat exchanger



Benefits of Additive Manufacturing

- Design Freedom - If we can draw it, we can print it. Can create complex parts that are not possible using traditional manufacturing processes like cutting, milling, routing, etc.
- Rapid Prototyping - Easy to create prototypes, test, then redesign if needed
- Jigs/Fixtures - Can create fixtures and jigs to speed up manufacturing processes
- Wide Variety of Materials - Have the ability to print durable or flexible parts



COMMODORE
CONSTRUCTION

**Architecture and Construction
Construction Trades - Carpentry**

Principles		CTE Concentrator A		CTE Concentrator B		Pathway Capstone	
7130	Principles of Construction Trades	7123	Construction Trades: General Carpentry	7122	Construction Trades: Framing and Finishing	7242	Construction Trades Capstone
				7390	Construction Trades: Masonry Fundamentals	7391	Masonry Capstone

- Industry Credentials - NCCER Core, Level 1, Level 2, Pre-Apprenticeship Approved
- Work-Based Learning Opportunity: Enterprise/Internship
- Dual Credits: Ivy Tech Technical Certificate Carpentry Specialist
- Technologies: Carpentry Tools



Certified Pre-Apprenticeship

Indiana Office of
WORK **BASED**
Learning
and Apprenticeship

Perry Central High School

Construction Year 1



Building &
Construction

Certifications

- * OSHA 10
- * NCCER Construction Level 1

Work-Based Learning
Employer Construction Sites
Volunteer Projects

RI Hours: 260
OJL Hours: 100
Total Hours: 360

RI Provider: Ivy Tech CC

BCTI 100 Principles of Construction
BCTI 101 Construction Trades
BCTI 102 General Carpentry

Construction Year 2

Certifications

NCCER Construction Level 2

Work-Based Learning
Employer Construction Sites
Volunteer Projects

RI Hours: 120
OJL Hours: 480
Total Hours: 600

RI Provider: Ivy Tech CC

BCTI 103 Framing
BCTI 104 Finishing

Finish

Certifications

of Certifications: 3
Transferable Credit Hours: Up to 27
Total RTI Hours: Up to 380

Work-Based Learning
Total OJL Hours: Up to 580

Registered Apprenticeship
Up to 6 Months Advanced Credit
ITCC Credits Transfer
Facilitated Entry

Program Completion

Up to 27 Transferable Credits to Ivy Tech CC's
Technical Certificate in Construction

* Grades 9 & 10

- ** Early Entrance Options
- Principle of Construction Technology (BCTI 100)
- Job Shadowing

* Grades 9 & 10

- Construction Trades – General Carpentry (BCTI 101, 102)
- WBL – Construction Site



Grade 11

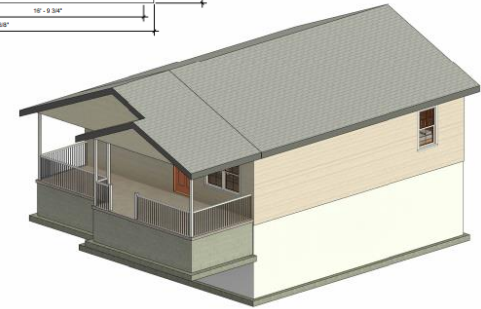
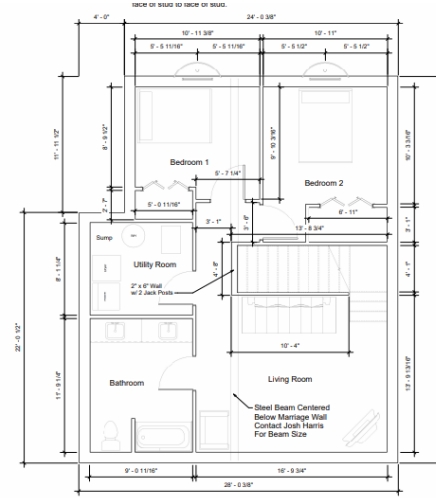
- Additional Dual Credits:
- Speech (COMM 101)
 - Surveying (SURV 100 / 100L)


Grade 12

- Additional Dual Credits:
- Quant. Math (MATH 123)
 - Honors Eng. 12 (ENG 101)

Habitat For Humanity - Engineering

- Civil Engineering class designed the home using specks provided by Habitat for Humanity
- Utilized skills we learned in PLTW Civil Engineering class to create the drawing
- Through the process the home had to be changed—we had to re-design the home to meet the new requirements
- Sent drawings to Construction



 Commodore Engineering	Perry Central High School Habitat for Humanity	No.	Description	Date	3D View
		Project number	N/A		
		Date	04/29/2023		A105
		Drawn by	April	Checked by	
		Checked by	Checker		

Habitat for Humanity - Construction

- Building manufactured home in our school shop
- House is split in two pieces and has a hinged roof for transport to Tell City for set-up
- Home will be 95% complete with electrical, plumbing, dry wall, cabinets, doors and windows
- Partnering with company to transport home and will set it on a basement with a crane in April/May





Senior Completers

