



CAREER & WORKFORCE PATHWAYS

BUILDING DETROIT'S FUTURE

From drones to cybersecurity, AI to music production: ten hands-on pathways connecting Detroit youth to the high-tech careers of tomorrow.

WELCOME TO THE PATHWAYS

DETROIT, THIS ONE IS FOR YOU.

CODE313 is a 501(c)(3) nonprofit on a mission to provide equitable access to STEAM education. We bridge the digital divide by putting real industry tools into the hands of Detroit's next generation, and connecting that learning to real careers.



Every CODE313 pathway is built around one big idea: **the skills students practice today should lead directly to the jobs of tomorrow.**

Students don't just learn **about** technology. They fly it, code it, design it, and ship it, using the same platforms professionals use across Michigan and around the world.

01

THE NOW

Hands-on, project-based learning with real industry tools: the core concepts and tech stack students master today.

02

THE JOB OF TOMORROW

Where the industry is headed, and why our partners need Detroit talent ready to lead it.

03

WORKFORCE OUTCOMES

Clear career ladders, from entry-level roles to professional titles, so every student can see the path.

10 PATHWAYS. ONE FUTURE.

Pick a passion, then level it up into a profession. Each pathway takes students from hands-on learning to real credentials, portfolios, and career connections with our industry partners.

01**DRONE PATHWAY**

Transitioning from remote-controlled flight to data-driven autonomy.

CAREERS INCLUDE

Commercial Drone Pilot · GIS Data Specialist

02**GAME DEV PATHWAY**

Engineering engagement and complex systems.

CAREERS INCLUDE

Junior Game Developer · Gameplay Programmer

03**APP DEV PATHWAY**

Creating the tools we carry in our pockets.

CAREERS INCLUDE

Junior App Developer · UI/UX-Focused App Developer

04**AI PATHWAY**

Harnessing the power of predictive intelligence.

CAREERS INCLUDE

Data Scientist · AI Prompt Engineer

05**IMMERSIVE TECH PATHWAY**

Building the interface for the next generation of computing.

CAREERS INCLUDE

Junior Unity Developer · XR (Extended Reality) Developer

06**ROBOTICS PATHWAY**

Build the intelligent systems at the core of today's innovation economy.

CAREERS INCLUDE

Robotics Technician · Mechatronics Engineer

07**ADDITIVE MANUFACTURING PATHWAY**

From digital concept to physical reality.

CAREERS INCLUDE

3D Printing Technician · Additive Manufacturing Engineer

08**MUSIC PRODUCTION PATHWAY**

The math and physics of sound.

CAREERS INCLUDE

Sound Designer · Audio Post-Production Specialist

09**CYBERSECURITY PATHWAY**

Bridging the gap between digital literacy and information assurance.

CAREERS INCLUDE

Junior Security Analyst · Ethical Hacker (Penetration Tester)

10**WEB DEVELOPMENT PATHWAY**

Building the infrastructure of the modern world.

CAREERS INCLUDE

Junior Web Developer · Senior Web Developer

AUTONOMOUS FLIGHT & AERIAL INTELLIGENCE

DRONE PATHWAY

Transitioning from remote-controlled flight to data-driven autonomy.

THE NOW

PRECISION PILOTING & PROGRAMMING

This isn't just about flying; it's about the payload. Students master the physics of flight and the FAA regulations (Part 107) required for commercial operation. They learn to program autonomous flight paths where the drone conducts "missions" without human stick-input.

CORE CONCEPTS

Aerodynamics

Flight Geometry

Remote Sensing

GIS

Package Delivery

TECH STACK

DJI SDK

Python for DroneKit

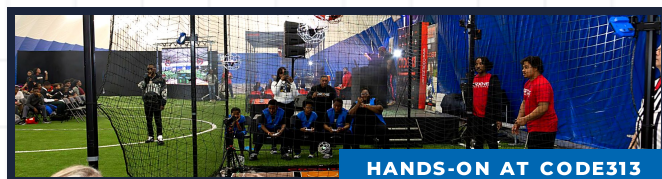
Pix4D (Photogrammetry)

THE JOB OF TOMORROW

YOUR FUTURE TAKES FLIGHT

The "Drone Economy" is revolutionizing agriculture, construction, and emergency response. Industry partners in infrastructure look for pilots who can translate aerial imagery into actionable data. Our students graduate knowing how to use drones as a professional tool, not a toy.

DETROIT, LOOK UP! YOUR FUTURE TAKES FLIGHT.



OUR PARTNERS

airspacelink.

VIP by OPD
Verified Industrial PropertiesGEM GLOBAL CENTER
OF MOBILITY

WORKFORCE OUTCOMES

YOUR CAREER LADDER

ENTRY LEVEL

- Commercial Drone Pilot
- Aerial Photographer / Mapper
- Drone Repair Technician



PROFESSIONAL LEVEL

- GIS Data Specialist
- Precision Agriculture Consultant
- UAS Fleet Manager

GAME DEVELOPMENT & DESIGN

GAME DEV PATHWAY

Engineering engagement and complex systems.

THE NOW

INTERACTIVE SYSTEMS & LOGIC

Game development is the "Decathlon of Coding." Students must master physics, logic, sound, and visual art simultaneously. They learn to build State Machines, the same logic used to program everything from smart elevators to automated factory floors.

CORE CONCEPTS

Collision Detection

Game Physics

Object-Oriented Programming

TECH STACK

Unity

C#

Godot

Maya

THE JOB OF TOMORROW

GAMIFICATION & SIMULATION

The skills used to build games are now used to build Industrial Simulations and training tools for surgeons and pilots. Our partners value the "System Thinking" that game designers bring to the table.

PRESS PLAY ON A CAREER THAT'S ANYTHING BUT A GAME.



HANDS-ON AT CODE313

OUR PARTNERS



WORKFORCE OUTCOMES

YOUR CAREER LADDER

ENTRY LEVEL

- Junior Game Developer
- Unity Developer (Entry-Level)
- QA Tester / Game Tester



PROFESSIONAL LEVEL

- Gameplay Programmer
- Technical Artist
- Simulation Designer
- Senior Game Developer

APP DEVELOPMENT

APP DEV
PATHWAY

Creating the tools we carry in our pockets.

THE NOW

PROBLEM SOLVING THROUGH
SOFTWARE

This curriculum focuses on the Lifecycle of an App. Students don't just write code; they practice "Design Thinking" to identify a problem in their community and build a functional mobile solution.

CORE CONCEPTS

UI/UX Design

Cross-Platform Development

Logic Flow

TECH STACK

Swift (iOS)

Kotlin (Android)

Flutter

THE JOB OF TOMORROW

THE APP ECONOMY

With billions of smartphone users, the demand for "Mobile-First" solutions is permanent. Industry partners look for developers who can bridge the gap between a business need and a user-friendly interface.

SPOT A PROBLEM IN YOUR COMMUNITY. BUILD THE APP THAT SOLVES IT.



HANDS-ON AT CODE313

OUR PARTNERS

WORKFORCE
OUTCOMES

YOUR CAREER LADDER

ENTRY LEVEL

- Junior App Developer
- Application Developer I
- Associate Software Engineer



PROFESSIONAL LEVEL

- UI/UX-Focused App Developer
- Full Stack Developer
- iOS Developer

ARTIFICIAL INTELLIGENCE & DATA SCIENCE

AI
PATHWAY

Harnessing the power of predictive intelligence.

THE NOW

TEACHING MACHINES TO LEARN

Students demystify AI by building their own models. They learn how to clean data, recognize patterns, and understand the Ethics of Algorithms. This is about moving from "using AI" to "building AI."

CORE CONCEPTS

Machine Learning

Neural Networks

Natural Language Processing

TECH STACK

Python

TensorFlow

PyTorch

Jupyter Notebooks

THE JOB OF TOMORROW

THE AI-DRIVEN WORKFORCE

AI is the "New Electricity." Every industry is looking for talent that can implement AI to automate tasks and predict trends. Our partners need "AI-literate" workers to lead their digital transformation.

STOP JUST USING AI. START BUILDING IT.



HANDS-ON AT CODE313

OUR PARTNERS

WORKFORCE
OUTCOMES

YOUR CAREER LADDER

ENTRY / PROFESSIONAL LEVEL

- Data Scientist
- AI Prompt Engineer

- Machine Learning Specialist

IMMERSIVE MEDIA (AR/VR)

IMMERSIVE TECH PATHWAY

Building the interface for the next generation of computing.

THE NOW

SPATIAL COMPUTING & INTERACTIVITY

Students shift from being players to being Architects of Reality. This curriculum focuses on creating 3D environments and overlaying digital information onto the physical world. They learn the logic of "spatial triggers," how a user's movement in the real world creates an action in the virtual one.

CORE CONCEPTS

3D Asset Creation

UX for Spatial Environments

Logic Scripting

TECH STACK

Unity 3D

Unreal Engine

C#

Blender

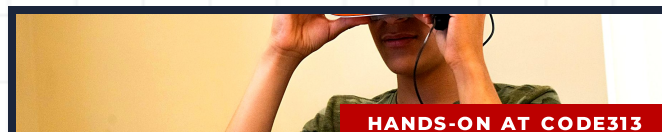
ARKit (Apple)

THE JOB OF TOMORROW

THE INDUSTRIAL METAVERSE

VR and AR are transforming workforce training and remote assistance. Imagine a mechanic in Detroit repairing a machine in London using AR glasses, or a surgeon practicing a procedure in VR. Our partners need developers who can build these high-stakes simulations.

DON'T JUST PLAY IN NEW WORLDS. ARCHITECT THEM.



HANDS-ON AT CODE313

OUR PARTNERS



WORKFORCE OUTCOMES

YOUR CAREER LADDER

ENTRY LEVEL

- Junior Unity Developer
- 3D Modeler
- VR Technical Support



PROFESSIONAL LEVEL

- XR (Extended Reality) Developer
- Simulation Engineer
- Immersive UX Designer

AUTONOMY, ROBOTICS & ENGINEERING

ROBOTICS PATHWAY

Build the intelligent systems at the core of today's innovation economy.

THE NOW

FROM SENSORS TO SYSTEMS

Students engage in project-based learning to master the mechanics of movement. Using advanced kits and sensors, they don't just "build a robot"; they solve a mission.

CORE CONCEPTS

Mechanical Systems

Electrical Circuits

Applied Physics

TECH STACK

C++

Block-Based Logic

LIDAR Concepts

THE JOB OF TOMORROW

AUTOMATION & INDUSTRY

Our curriculum prepares students for the Mobility and Manufacturing 4.0 sectors. By understanding how hardware communicates with software, students gain the exact skills requested by our automotive and logistics partners.

THE MOTOR CITY BUILT THE WORLD. NOW WE'RE PROGRAMMING IT.



HANDS-ON AT CODE313

OUR PARTNERS

STELLANTIS



WORKFORCE OUTCOMES

YOUR CAREER LADDER

ENTRY LEVEL

- Robotics Technician
- Assembly Line Programmer
- Field Service Tech



PROFESSIONAL LEVEL

- Mechatronics Engineer
- Automation Specialist
- Systems Integrator

PATHWAY 07

ADDITIVE MANUFACTURING: 3D PRINTING & CAD DESIGN

MANUFACTURING PATHWAY

From digital concept to physical reality.

THE NOW

DESIGN, SLICE & PRINT

Students move beyond downloading pre-made files. They learn the engineering behind Computer-Aided Design (CAD), understanding how to design for structural integrity. By troubleshooting hardware and experimenting with different filaments, they master the full lifecycle of a physical product.

CORE CONCEPTS

Parametric Modeling

Material Science (Polymers)

Tolerances & Fit

TECH STACK

Fusion 360

Tinkercad

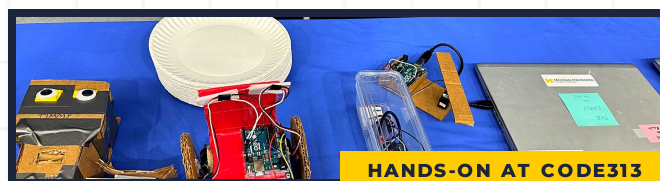
Cura (Slicing Software)

THE JOB OF TOMORROW

DISTRIBUTED MANUFACTURING

The "Just-in-Time" supply chain relies on 3D printing to create parts on-site rather than shipping them across the globe. Industry partners in the medical and automotive fields look for technicians who can rapidly iterate designs to reduce waste and cost.

DREAM IT. DESIGN IT. PRINT IT. DETROIT-MADE.



OUR PARTNERS

STELLANTIS



SIEMENS

logitech

HENRY
FORD
HEALTH

WORKFORCE OUTCOMES

YOUR CAREER LADDER

ENTRY LEVEL

- 3D Printing Technician
- Prototype Lab Assistant
- CAD Drafter



PROFESSIONAL LEVEL

- Additive Manufacturing Engineer
- Industrial Designer
- Biomedical Prosthetics Specialist

MUSIC PRODUCTION & AUDIO ENGINEERING

MUSIC PRODUCTION PATHWAY

The math and physics of sound.

THE NOW

DIGITAL SIGNAL PROCESSING

Music at CODE313 isn't just about "making beats"; it's about Audio Engineering. Students learn the physics of sound waves, frequency modulation, and the technical side of digital recording.

CORE CONCEPTS

Signal Flow

MIDI Sequencing

Synthesis

Sound Design

TECH STACK

Ableton Live

Logic Pro

Audacity

THE JOB OF TOMORROW

SONIC BRANDING & SPATIAL AUDIO

From podcasts to the 3D audio in VR headsets, high-quality sound is a massive industry. Our partners in media and entertainment need engineers who can manipulate sound for any platform.

**FROM THE CITY THAT GAVE THE WORLD MOTOWN:
THE NEXT SOUND STARTS HERE.**



HANDS-ON AT CODE313

OUR PARTNERS



WORKFORCE OUTCOMES

YOUR CAREER LADDER

ENTRY / PROFESSIONAL LEVEL

- Sound Designer
- Audio Post-Production Specialist

- Podcast Engineer

CYBERSECURITY & DIGITAL DEFENSE

CYBERSECURITY PATHWAY

Bridging the gap between digital literacy and information assurance.

THE NOW

FOUNDATIONS OF TRUST

Students dive into the "Cat and Mouse" world of digital security. This curriculum moves beyond basic password safety into the mechanics of how data moves and where it is vulnerable. Through hands-on labs, students learn to identify threats before they become breaches.

CORE CONCEPTS

Network Architecture

Threat Modeling

Encryption

Ethics & Law

TECH STACK

Linux Command Line

Wireshark

Virtual Machines

Packet Tracer

THE JOB OF TOMORROW

PROTECTING THE GLOBAL ECONOMY

As every industry, from healthcare to automotive, moves to the cloud, the "Attack Surface" grows. Our curriculum is aligned with the NIST Cybersecurity Framework, ensuring students speak the same language as the security chiefs (CISOs) at Fortune 500 companies.

EVERY SYSTEM NEEDS A DEFENDER. DETROIT, SUIT UP.

OUR PARTNERS

CISCO



CHASE



PNC

Comerica



WORKFORCE OUTCOMES

YOUR CAREER LADDER

ENTRY LEVEL

- Junior Security Analyst
- Help Desk Tier II
- IT Compliance Coordinator



PROFESSIONAL LEVEL

- Ethical Hacker (Penetration Tester)
- Incident Response Manager
- Cloud Security Architect

WEB & CLOUD DEVELOPMENT

WEB & CLOUD PATHWAY

Building the infrastructure of the modern world.

THE NOW

RESPONSIVE ARCHITECTURE

Students move beyond basic HTML to master the Full-Stack experience. They learn how to build dynamic applications that talk to databases and scale across devices. By focusing on "Mobile-First" design, they ensure their products are accessible to everyone, everywhere.

CORE CONCEPTS

DOM Manipulation

API Integration

Database Management (SQL/NoSQL)

TECH STACK

React.js

Node.js

GitHub

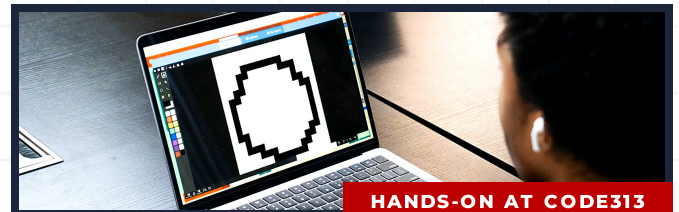
Tailwind CSS

THE JOB OF TOMORROW

THE DISTRIBUTED WEB

As businesses move entirely to the cloud, "Web Developer" has evolved into Cloud Engineer. Our partners need developers who understand deployment, security, and user data privacy.

THE WHOLE WORLD RUNS ON THE WEB. LET'S BUILD IT.



HANDS-ON AT CODE313

OUR PARTNERS



WORKFORCE OUTCOMES

YOUR CAREER LADDER

ENTRY LEVEL

- Junior Web Developer
- Front-End Developer (Junior)
- Back-End Developer (Junior)
- UI Developer



PROFESSIONAL LEVEL

- Senior Web Developer
- Front-End Engineer
- Lead Front-End / Back-End Developer
- Web Application Engineer
- UI/UX Engineer

REAL PEOPLE. REAL STORIES.



FEATURED YOUTH

DAVONTAY DELACERDA

COMMITMENT, CONSISTENCY & FLIGHT

Davontay entered CODE313's Youth Part 107 Drone Program at 17 years old, alongside many other scholars. Session after session, he kept showing up. At just 17, he passed his **FAA Part 107 Certification**, an achievement many adults work years toward.

From there, Davontay became a professional drone pilot, working with CODE313 and companies such as Aerial Loop, getting paid to do what he loves. Now he's building toward launching his own drone company. The sky is not the limit.

CERTIFIED AT AGE **17**

FAA PART **107**
CERTIFIED PILOT

WORKING AS **PAID**
DRONE PILOT



FEATURED PARTNER

VIP BY DRP

CODE313 is proud to partner with VIP by DRP to capture high-quality aerial drone footage that brings industrial properties to life. CODE313's trained drone pilots gain real-world experience producing dynamic marketing visuals that showcase property scale, access, and potential, connecting hands-on drone skills to real industry applications.

THIS IS WHAT A PATHWAY LOOKS LIKE.

YOUR STORY COULD BE NEXT



YOUR FUTURE STARTS NOW.

DON'T WAIT. SAVE YOUR SPOT TODAY.

HEADQUARTERS

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SCAN TO JOIN

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ENROLL A STUDENT

BRING US TO YOUR
SCHOOL

BECOME A PARTNER

VOLUNTEER OR DONATE



**THE FUTURE IS BEING
CODED IN DETROIT.**

HEADQUARTERS

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