

**MASTERY**  
— CODING —



# Michigan CTE Programs Solutions

## Who is Mastery Coding?

Founded by a California Teacher of the Year Award Winner, Mastery Coding provides expertly crafted coding curricula for K-12 schools. Our students learn coding and technology skills aligned to modern workforce needs. This way, students can step into high-paying jobs with the critical aptitudes employers desperately seek.

## Our Mission

To provide schools with coding curriculum that is accessible, engaging, data-driven, updated, and sustainable for years to come.

## What We Do

Mastery Coding provides expert coding curricula that allows:

**students** with no prior coding experience to learn to integrate academic and technical skills that focus and reinforce the concepts that are needed in the increasingly digital workplace. Michigan students to work in an industry-based coding landscape that offers Michigan's Industry Recognized Credentials and transferable skills with endless potential for stackable credentials.

**teachers** with no prior coding experience to successfully teach a series of project-based coding classes with confidence, and be supported with the resources necessary to engender academic achievement.

**districts** to on-board a comprehensive curriculum that offers cutting-edge coding courses for elementary, middle, and high school students (including several Michigan CTE Programs).

## 11.0201 Computer Programming/ Programmer

Mastery Coding has developed a 3 year course sequence solution to fully support the **Computer Programming/ Programmer** pathway utilizing the following courses:

Year 1	Game Development Foundations	Available NOW
Year 2	Game Development I	Available NOW
Year 3	Game Development II	BTS 2022

Upon completing these courses, students will know everything they need to pass the industry-recognized **Unity User: Programmer, Unity User: Artist, Unity Certified Associate: Game Developer**, and **MTA: Software Development Foundations** exams.

These courses incorporate the MDE standards/components, preparing students to apply entry-level coding languages in program writing, program customization, prototype testing, and other aspects of operating systems and networks. Industry standards are used in all Mastery Coding courses, providing real-world programming experience for students in the following segments:

- Logic and Problem Solving
- Beginning Application Development (Coding)
- Advanced Application Development (Database, Files)
- Leadership and Teamwork
- Programming Fundamentals and Syntax

## 11.0201 Computer Programming/ Programmer Courses

### Game Development Foundations

**Game Development Foundations** leverages the excitement of creating games to teach computer science, mathematics, and problem-solving. Upon completion of this course, students will be proficient in JavaScript, computational thinking, 2D graphics, and game development principles.

**Topics:** JavaScript coding, cartesian coordinate systems, vector arithmetic, 2D animation, user interface, and game development organization.

### Game Development I

**Game Development I** teaches C# coding and game design with the Unity 3D Engine. Upon course completion, students will have the ability to create a 3D game from scratch on their own.

**Topics:** Object-Oriented Programming, C#, game physics, vector arithmetic, programming best practices, git version control, asset management, 3D modeling, animation, cross-platform input support.

**Prerequisites:** Game Development Foundations

**Certifications:** Unity User: Programmer, Unity User: Artist

### Game Development II

**Game Development II** focuses on the full development lifecycle. From design, to asset creation, to coding tools and behaviors. Students learn new skills and techniques in C# and Unity and are introduced to the Blender 3D modeling software to create their own art assets.

**Topics:** Intermediate C#, git version control, asset management, 3D modeling, animation, code collaboration, cross-platform input support.

**Prerequisites:** Game Development I

**Certifications:** Unity Certified Associate, MTA: Software Development Foundations