Appendix #3
New Course and Programming Proposal

Middletown High School
Career and Technical Education
Game Development & Artificial Intelligence
2026-27

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OVERVIEW

The Game Development & Artificial Intelligence course essential learning framework will include foundational instruction in computer engineering, video game development, and AI technology.

Students will work with professional game development tools and explore AI as a practical tool for learning, creativity, problem-solving, and responsible personal and professional use.

Essential skills developed will include computational and algorithmic thinking, programming skills, and the ability to use computers to solve representative problems in engineering.

The Game Development & Artificial Intelligence course will provide students the opportunity to engage in three foundational elements:

- Dual concurrent enrollment to offer high school and college credit
- Co-curricular programming to expand and apply learning through hands-on, practical application beyond the classroom
- Industry Recognized Credentials to assist with bridging the gap between education and real-world employment

Dual Concurrent Enrollment

The Game Development & Artificial Intelligence course will seek to align with one of the following UConn Early College Experience courses.

Computer Science and Engineering
CSE 1010: Introduction to Computing for Engineers

- Credits: 3. Semester: Fall, Spring, or Full-year
- Description: Introduction to computing logic, algorithmic thinking, computing processes, and programming language and computing environment. Knowledge obtained in this course enables use of the computer as an instrument to solve computing problems. Representative problems from science, mathematics, and engineering will be solved.
- Student Eligibility: Instructor consent is required.

Digital Media and Design
DMD 2500: Introduction to Game Design

- Credits: 3. Semester: Fall, Spring, or Full-year
- Description: Introduction to the principles of game design and development. History of the industry, story, and game mechanics.
- Student Eligibility: Students must have the ability to access a professional game development tool such as Unity, Unreal, Godot, or Construct3. Students must possess digital literacy skills and can understand to set up a project and organize documents.

Engineering
ENGR 1195: Special Topics in Engineering: AI Literacy (AI for All)

- Credits: 2. Semester: Fall or Spring
- Description: Introduction to generative AI as a practical tool for learning, creativity, and problem-solving in academic and professional contexts. Students work hands-on with modern AI systems,

developing skills in prompt engineering, critical evaluation of AI outputs, and maintaining human judgment in AI-assisted workflows. The course focuses on accessibility and personalization to help students build AI workflows that support their learning and personal development through interactive labs, case studies, and reflection. Encourages sustainable AI use habits and covers ethical considerations including privacy, bias, transparency, and truthfulness in AI use. Emphasizes responsible AI use for personal growth and societal benefit.

- Student Eligibility: Successful completion of two years of high school STEM and Humanities coursework is recommended.

Co-curricular Programming

The Game Development & Artificial Intelligence course will provide students the opportunity to engage in an active and expanding community officially recognized as a student activity through the Connecticut Association of Schools.

Esports Team

Structured, competitive playing of multiplayer video games by student teams within an educational setting.

Connecticut High School Programs

- Brien Mcmahon HS, Conard HS, Immaculate HS, James Hillhouse HS, Mark T. Sheehan HS, Naugatuck HS, Sacred Heart HS, Staples HS, The Gilbert School, Weston HS, Windsor HS, Woodstock Academy, Xavier HS

Connecticut Collegiate Programs

- Albertus Magnus College, Central Connecticut State University, Post University, Quinnipiac University, Sacred Heart University, University of Bridgeport, University of Connecticut, University of Hartford

Industry Recognized Credentials

Verified certification of a student's real-world skill proficiency and career readiness in Career and Technical Education (CTE) pathways

Connecticut State Department of Education

Digital Technology

- Computer Programming, Computer Systems

Arts, Entertainment and Design

- 3D Animation, Game Development Fundamentals, Game Design Fundamentals

RATIONALE

The Game Development & Artificial Intelligence course will provide students with a multi-faceted, interdisciplinary program integrating computer engineering, video game development, and artificial intelligence.

Students will gain access to industry-relevant technologies and tools while developing transferable skills in problem-solving, creativity, collaboration, communication, and technological literacy.

The course will connect classroom learning to postsecondary education, career pathways, and scholarship opportunities in rapidly evolving technology fields.

Interdisciplinary Learning

Language Arts

Students will apply communication, storytelling, and critical analysis skills throughout the game-development process.

- Communication, storytelling, scriptwriting, technical writing, presentation, media literacy

Mathematics

Students will use mathematical reasoning to design, program, balance, and evaluate interactive game systems.

- Geometry, algebra, ratios & proportions, logic & problem-solving, financial mathematics

Science

Students will apply scientific reasoning, modeling, experimentation, and data analysis throughout the game-development process.

- Physics & motion, computer science, scientific modeling, data analysis, applied science

Technological Literacy

Students will develop practical technological literacy by using emerging digital tools, including artificial intelligence, to solve problems, create, communicate, and work responsibly in academic and professional contexts.

- Artificial Intelligence, emerging technology, responsible technology use, career readiness

Pathways and Careers

Students will explore postsecondary education and career pathways connecting learned technical, creative, and interdisciplinary skills to real-world technology and media applications.

- Software development, cybersecurity, artificial Intelligence, physical computing, game & Interactive media, X + CS

Scholarships

Students will gain access to potential college scholarship opportunities through participation in esports and related technology-focused co-curricular programs.

- College Esports, competitive experience, postsecondary connections, student portfolio

COURSE INFORMATION

Career and Technical Education
Game Development & Artificial Intelligence
Semester: Full year
Grades: 9-12
MHS Credits: 1.0
UConn ECE Credits: 2-3

EVALUATION

The implementation of the course will be evaluated through student performance, credential attainment, postsecondary connections, and program growth.

Assessment data will be reviewed annually to measure student learning, the effectiveness of the course's foundational elements, and overall program impact across a three-year implementation period.

Foundational Elements

- Dual Concurrent Enrollment: Track enrollment, course completion, college credit earned, and student achievement.
- Co-Curricular Programming: Track participation, competition, student engagement, and practical application of course curriculum.
- Industry-Recognized Credentials: Track credential participation, attainment, and alignment with Career and Technical Education career pathways.

Three-Year Program Growth Plan

Program effectiveness will be reviewed annually and cumulatively over three years to identify strengths, measure growth, and guide program improvement.

- Enrollment, retention, credential attainment, dual concurrent enrollment, co-curricular participation, student feedback, and postsecondary/career outcomes
- Projected enrollment (2027-28 school year)
  40 students (two sections)
  20 dual concurrent enrollments
  20 industry recognized credentials

COST

Year 1-3

The Game Development & Artificial Intelligence course will not initially require additional funding.

The Middletown High School Engineering lab has functional computers.

Most software and applications can be assessed through free education accounts.

Careers and National Employment Growth Projections

Pathways

Artificial Intelligence & Data
Computer and Information Research Scientist
Creative and Digital Media
Cross-Disciplinary / X + CS (Computer Science)
Engineering & Physical Computing
Game and Interactive Media
Information Security Analyst and Cybersecurity
Software Developers, Quality Assurance Analysts, and Testers

Related Articles

Connecticut Career Pathways Commission
Entertainment Software Association
NSF invites K-12 Students Design Video Games and Compete for Game Maker Awards
The Future of Jobs Report 2025

The Game Development & Artificial Intelligence course will offer students a highly engaging learning experience through which students can develop transferable skills in programming, computational thinking, mathematics, storytelling, design, problem-solving, and artificial intelligence as an emerging technology.

CURRICULUM AND PROGRAMMING COODINATORS

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