



## Environmental Sustainability Sypek Center

Our Environmental Sustainability program immerses students in a comprehensive exploration of sustainable agriculture and urban farming, integrating science, technology, and business concepts essential to agroecology and controlled environment agriculture (CEA). Through this program, students delve into advanced practices such as hydroponics, vertical gardening, and regenerative farming, developing a holistic approach to global challenges in food security, resource conservation, and environmental impact.

The curriculum is designed to provide students with an in-depth understanding of how human activities influence ecosystems and how sustainable practices can be incorporated across sectors to conserve natural resources, reduce waste, and mitigate climate change. Through hands-on projects, real-world case studies, and collaborative activities, students will gain essential ecological and biological knowledge for innovative crop production and environmental stewardship.

Throughout the course, connections to the students Career Technical Student Organization (CTSO), FFA, reinforce students' understanding of agricultural education pathway and skill sets. By combining scientific exploration, technical application, and business acumen, this program prepares students to excel in diverse agricultural careers and contribute to sustainable global food systems. Students who successfully complete MCTS's Environmental Sustainability pathway will also earn dual credits as part of our articulation agreements with Mercer County Community College and Delaware Valley University.

### Environmental Sustainability I

Grade Level: 11 Credits: 20

This course integrates foundational knowledge, specialized skills, and advanced techniques across environmental science, plant science, hydroponics, and agricultural systems. Through engaging hands-on activities, projects, and real-world problem-solving scenarios, students will explore diverse concepts in agriculture, food, and natural resources. The course also introduces hydroponics as an innovative method of plant production and explores its application in agronomic and horticultural industries.

### Environmental Sustainability II

Grade Level: 12 Credits: 20

This course provides a comprehensive exploration of agricultural science, focusing on Controlled Environment Agriculture (CEA), food science and safety, agricultural business foundations, and advanced research and development. Through hands-on activities, real-world projects, and problem-solving scenarios, students will develop content knowledge, technical skills, and employability traits essential for modern agriculture. The curriculum integrates agricultural business practices such as financial planning, risk management, and business plan development, with students designing and presenting solutions to local challenges. As a capstone, students will apply their knowledge in Agricultural Research and Development (ARD) projects, conducting research, analyzing data, creating innovative solutions, and presenting findings to peers and professionals.



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#### Industry Valued Credentials & Certifications

OSHA 10 certification  
General Industry (Agriculture)  
CareerSafe

#### Articulation Agreements

Mercer County Community College  
Delaware Valley University

