

Delaware Pathways

Computer Science



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Framing Our Conversation

Our Goals for Today:

- Provide an overview of the **Computer Science** program of study;
- Discuss professional development opportunities for teachers;
- Discuss early college and early career experiences for students; and
- Discuss next steps and how to submit the program application.

Program of Study Overview

Computer Science:

- This is a three (3) course Career & Technical Education (CTE) program that engages students in open-ended problem solving where students study computational practices such as algorithm development, problem solving, and programming within the context of problems relevant to their everyday lives.
 - **Partners:** UD, DSU, DTCC, code.org, and the College Board
 - **Benefits:** Two Advanced Placement courses; curriculum developed in partnership with business & industry and higher education; course specific professional development; national and state network of support including student scholarships and early college credit.

Information Technology, Computer Science

Course 1

Exploring Computer Science (ECS)

Students are introduced to computers and algorithmic problem-solving including the exploration and examination of instances, design, coding, testing, and verification. Students design and develop programs, manage and interpret data, and work in groups to build and program a robot.

Course 2

AP Computer Science Principles (CSP)

Students work individually and in small groups to explore algorithms and the need for a structured approach to problem solving. Students write programs in Javascript, build web applications, and gain an understanding of the nature and structure of complex data sets.

Course 3

AP Computer Science A (CSA)

Students explore problem solving, design strategies and methodologies, organization of data (data structures), approaches to processing data (algorithms), analysis of potential solutions, and the ethical and social implications of computing.

Professional Development

Exploring Computer Science (ECS):

- A one-week professional development session will occur in the summer of 2015, followed by quarterly meetings with teachers through the year.
 - **Where:** Delaware State University
 - **When:** July 20 – 24, 2015
 - **Provided by:** Gail Chapman in partnership with faculty from DSU and UD
 - **Cost:** No cost for registration, costs for teacher participation are allowable expenses through the Innovative grant

Professional Development

Computer Science Principles (CSP):

- A one-week professional development session will occur in the summer of 2015, followed by online professional development and mentoring
 - **Where:** University of Delaware
 - **When:** June 22 – 26, 2015
 - **Provided by:** Terry Harvey, Lori Pollock, James Atlas, and Chrystalla Mouza from UD
 - **Cost:** Costs for registration and teacher participation are paid through NSF funding from UD

Early Career & College Experiences

Work-Based Learning Experiences:

- LEAs are encouraged to engage their advisory committees through industry-mentored projects and experiences:
 - Building a website, application, or user interface;
 - Developing methods for data collection and aggregation to support a case study or local project; and
 - Using robotics to automate processes in business settings.

Articulation:

- There are hundreds of post-secondary institutions across the country that currently recognize Advanced Placement.
- In-state articulations are under development with DTCC, DSU, and UD.

Program of Study Application

Application and Approval Process for Computer Science:

- The programs of study application can be found online at:
<http://dedoe.schoolwires.net/domain/211>
- All applications are due on April 30, 2015

The LEA is required to:

- Staff a Program Advisory Committee;
- Complete the “Value-added Opportunities” portion of the application; and
- Complete the Program of Study Matrix.

Contact Information

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