



KENTUCKY DEPARTMENT OF EDUCATION

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STATE RECOGNIZED FOR COMPUTER SCIENCE EDUCATION POLICY

(FRANKFORT, Ky.) – Code.org, a national non-profit organization that promotes computer science education and computer programming or coding, has recognized Kentucky for its “progressive state policy to make computer science count” as a core graduation requirement.

Kentucky Department of Education guidance states that based on course standards and the teacher of record, a computer science course can qualify as a 4th mathematics course or an elective science course if it involves computational thinking, problem solving, computer programming, and a significant emphasis on the science and engineering practices from the Kentucky Core Academic Standards.

For example, a student who takes and passes [AP Computer Science](#), which teaches computer programming and software development, may count it as one of the mathematics credits required for graduation as defined by [Kentucky's minimum high school graduation requirements](#).

While not a new policy, KDE's stand on computer science is being noted as one of many efforts to expand awareness and access to computer science as a way to promote 21st century skills.

“We recognize the impact that computer science education can have on students even if they don't plan on going into that for a career,” Commissioner Terry Holliday said. “It develops students' computational and critical thinking skills and shows them how to create new technologies not just use the ones we have. Students need this skill set to be prepared for the 21st century, regardless of what field of study or job they ultimately pursue.”

The U.S. Bureau of Labor Statistics predicts one in every two Science, Technology, Engineering and Math ([STEM](#)) jobs in the country will be in computing occupations, with more than 150,000 job openings annually making it one of the fastest growing occupations in the United States. The industries requiring computing professionals is diverse — two-thirds of computing jobs are in sectors other than information technology, including manufacturing, defense, health care, finance, and government.

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“In order to sustain American innovation, we need to ensure our students have the opportunity to take computer science courses,” said Fred Humphries, Microsoft Vice President for U.S. Government Affairs. “We applaud Kentucky leaders for taking action to allow computer science courses to count toward high school graduation requirements, which helps students learn the skills they’ll need to thrive in the 21st century economy.”

Efforts to promote computer science education are catching on in Kentucky. In addition to AP Computer Science, several schools offer [coding classes](#) – either as part of regular course offerings or as an extracurricular activity. Students participated in coding challenges at this year’s Kentucky Student Technology Leadership Program [annual conference](#). And last December, a number of Kentucky schools participated in an [Hour of Code](#), an effort to introduce students of all ages to coding and computer programming.

The College Board is scheduled to launch a second, new [AP Computer Science Principles](#) course in 2016-17. The course is designed around seven big ideas at the core of computer science—creativity, abstraction, data, algorithms, programming, Internet and impact—that are fundamental to computer science, but applicable to analysis in many disciplines. According to College Board, “the new course will introduce students to programming but will also give them an understanding of the fundamental concepts of computing, its breadth of application and its potential for transforming the world we live in. It will be rigorous, engaging and accessible.”

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[What is Computer Science?](#)

Computer science education encompasses “the study of computers and algorithmic processes, including their principles, their hardware and software designs, their applications, and their impact on society.” A few of the topics and activities that might be included in a computer science course include:

- Algorithmic problem-solving
- Computing and data analysis (managing, processing, visualizing and interpreting data)
- Human-computer interaction
- Modeling and simulating real-world problems
- Creating and manipulating graphics
- Programming (including game design)
- Security (including cryptography)
- Web design (illustrating principles of programming, human-computer interaction and abstraction)
- Robotics (designing and programming)
- Ethical and social issues in computing

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