

## Technology Education Frequently Asked Questions



Listed below are frequently asked questions about technology education. If you have additional questions about technology education in Maryland, please contact

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### 1. What is technology?

Technology is the innovation, change, or modification of the natural environment in order to satisfy perceived human wants and needs ([Standards for Technological Literacy](#), 2000). Technology comprises the entire system of people and organizations, knowledge, processes, and devices that go into creating and operating technological artifacts, as well as the artifacts themselves. Technology encompasses engineering know-how and design, manufacturing expertise, and various technical skills. Technology is the product of engineering and science (adapted from the [National Academy of Sciences](#), 2002).

### 2. What is technology education?

Technology education is an integrated, experience-based instructional program designed to prepare a population that is knowledgeable about technology – its systems, techniques, applications, and social and cultural significance. Students in technology education courses use the engineering design process to develop solutions to real-world problems while applying science, mathematics, and computer science content. The implementation of technical and [21<sup>st</sup> century skills](#) is emphasized through the application of course content.

Students have the options to continue their technological education by taking advanced technology education courses or enrolling in a career and technology education (CTE) program of study. Advanced technology education courses allow students to develop in-depth skills and knowledge related to one or more of the following areas – impacts of technology, technological issues, and/or engineering design. CTE programs of study increase the academic, career, and technical skills of students in order to prepare them for careers and postsecondary study. Technology and engineering CTE programs of study include [Project Lead the Engineering](#) and [Manufacturing Engineering Technology](#). Local school system leaders decided which advanced technology education courses and CTE programs of study will be available to students.

### 3. What is technological literacy?

Technological literacy is the ability to use, manage, assess, and understand technology ([Standards for Technological Literacy](#), 2000). The goal of technological literacy is to provide people with the tools to participate intelligently and thoughtfully in the world around them ([National Academy of Sciences](#), 2002).

### 4. Why are students required to earn one credit in technology education?

Technology education is a critical part of a comprehensive educational program. Students must be prepared to responsibly create, modify, use, assess, and interact with technology. Technology education fosters the development of technological literacy and exposes students to the work performed by STEM professionals such as engineers, scientists, and technicians. In addition to building problem solving, technical, and critical thinking skills, technology education prepares students to make well-informed decisions on matters that affect or are affected by technology ([National Academy of Sciences](#), 2002).

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### 5. Which courses count for a technology education graduation requirement?

Local school system leaders decide which courses to offer that will allow students to fulfill the technology education graduation requirement. School systems can offer students any of the Maryland State Department of Education’s (MSDE) preapproved engineering design or computer science-based courses listed in the table below. School system leaders can also identify additional courses that align to technology education standards by completing the curriculum alignment review process. If the course meets all components of the rubric, students may take the course to fulfill their technology education graduation requirement.

<b>MSDE Preapproved Courses for Technology Education Graduation Credit</b>	
<b>Engineering Design-Based Courses</b>	<b>Computer Science-Based Courses</b>
<ul style="list-style-type: none"> <li>• International Technology and Engineering Educators Association Foundations of Technology</li> <li>• Project Lead the Way Introduction to Engineering Design*</li> <li>• Project Lead the Way Principles of Engineering*</li> </ul>	<ul style="list-style-type: none"> <li>• Exploring Computer Science</li> <li>• Foundations of Computer Science*</li> <li>• Advanced Placement Computer Science Principles</li> </ul>

\*Identifies courses in a Career and Technology Education program of study. School systems must adhere to the Career and Technology Education complete program requirements.

### 6. How was the technology education standards developed?

Nationally, the task of developing content standards for technology education began in 1995 with the Technology for All Americans Project (TfAAP). The National Science Foundation and the National Aeronautics and Space Administration funded this effort to develop a nationally viable rationale and structure for technology education. The International Technology and Engineering Educators Association (ITEEA) led this effort and in 1996 TfAAP published [\*Technology for All Americans: A Rationale and Structure for the Study of Technology\*](#). This document provided the foundation for technology education state curriculum and established the guidelines for what each person should know and be able to do in order to be technologically literate.

In 2000, ITEEA published [\*Standards for Technological Literacy: Content for the Study of Technology\*](#). The Maryland State Department of Education used ITEEA’s standards as the basis for Maryland Technology Education Standards. In 2005 the Maryland State Department of Education published the Maryland Technology Education State Curriculum which defines what students must know and do to be technologically literate. In 2015, a team of stakeholders representing business, higher education, governmental agencies, and local school systems worked to revise Maryland Technology Education Standards. The revised document was released in 2016. Access the revised standards here >>  
[http://www.marylandpublicschools.org/msde/divisions/careertech/career\\_technology/voluntary\\_curriculum/docs/MDTechnologyEducationStandards.pdf](http://www.marylandpublicschools.org/msde/divisions/careertech/career_technology/voluntary_curriculum/docs/MDTechnologyEducationStandards.pdf)

### 7. How does technology education differ from educational technology?

Technology education is an instructional program required of all students. Students work individually and in teams as they learn how to use and interact with technology to develop solutions to problems and extend human capabilities. Educational Technology is the use of technology to support student learning and instruction, and includes all the electronic tools, both hardware and software, that assist individuals in their ability to acquire and communicate information.