Kentucky CTE

Advanced Manufacturing: Metal Fabrication: Introduction to 3D Printing Technology 332001 (2026–2027)

Describe, using appropriate terminology, the concepts and applications of 3D (three-dimensional) printing. 1	1 Describe, using appropriate terminology, the concepts and applications of 3D (three-dimensional) printing. 1
Demonstrate a basic understanding of various 3D (three-dimensional) printing materials, chemical/mechanical properties, and necessary equipment settings to process them. 2	2 Demonstrate a basic understanding of various 3D (three-dimensional) printing materials, chemical/mechanical properties, and necessary equipment settings to process them. 2
Describe, using correct computer terminology, basic computer functions, uses of computers in society, and different types of software. 3	3 Describe, using correct computer terminology, basic computer functions, uses of computers in society, and different types of software. 3
Utilize computer and 3D (th pri tec	4 Utilize computer and 3D (three-dimensional) printing-related technology as a tool o manage, manipulate, use and present information both in a virtual model and eneral form. 4

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manage, manipulate, use and present information both in a virtual model and general form. 4	
Discuss ethical and responsible computing and 3D (three-dimensional) printing issues, such as copyright, patent, intellectual property rights, privacy, dangers of use, sustainability, security and internet safety. 5	5 Discuss ethical and responsible computing and 3D (three-dimensional) printing issues, such as copyright, patent, intellectual property rights, privacy, dangers of use, sustainability, security and internet safety. 5
Demonstrate awareness of the use and impact of computers and 3D (three-dimensional) printers in different areas of business, education, the home, and the global realm. 6	6 Demonstrate awareness of the use and impact of computers and 3D (three-dimensional) printers in different areas of business, education, the home, and the global realm. 6
Effectively use computer application programs and related graphical interfaces. 7	7 Effectively use computer application programs and related graphical interfaces. 7
Describe how 3D (three-dimensional) printing and computer technology globalization impacts varying cultures, commerce, materialism, and business opportunities. 8	8 Describe how 3D (three-dimensional) printing and computer technology globalization impacts varying cultures, commerce, materialism, and business opportunities. 8
Transfer and share files and information using physical methods, networks, email, and clo stc	9 Transfer and share files and information using physical methods, networks, email, and cloud-based data storage systems. 9

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Demonstrate a basic understanding and application of computer-based or mobile 3D (three-dimensional) imaging/scanning methods and equipment. 10	**10** **Demonstrate a basic understanding and application of computer-based or mobile 3D (three-dimensional) imaging/scanning methods and equipment.** 10
Locate and access relevant information sources found on networks such as the internet and be familiar with web browsers, search sources, sources of online help, and sources of information related to the field of study. 11	**11** **Locate and access relevant information sources found on networks such as the internet and be familiar with web browsers, search sources, sources of online help, and sources of information related to the field of study.** 11
Demonstrate an awareness of different types of software applications and operating systems, as well as software distribution, upgrading, and cloud computing. 12	**12** **Demonstrate an awareness of different types of software applications and operating systems, as well as software distribution, upgrading, and cloud computing.** 12
Perform common file-management functions effectively. 13	**13** **Perform common file-management functions effectively.** 13
Search, access, and transfer files to and from websites dedicated to functioning as 3D (three-dimensional) printing model file repositories. 14	**14** **Search, access, and transfer files to and from websites dedicated to functioning as 3D (three-dimensional) printing model file repositories.** 14
Effectively generate and manipulate 3D (three-dimensional) computer mo of	**15** **Effectively generate and manipulate 3D (three-dimensional) computer models using a variety of CAD (Computer-Aided Design) tools and techniques.** 15

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Design) tools and techniques. 15

Demonstrate an understanding of foundational 3D (three-dimensional) printing and slicing features such as support material, rafts, brims, and skirts. 16

16 Demonstrate an understanding of foundational 3D (three-dimensional) printing and slicing features such as support material, rafts, brims, and skirts. 16

Skillfully create effective presentations, spreadsheets, and basic word processing documents. 17

17 Skillfully create effective presentations, spreadsheets, and basic word processing documents. 17

Demonstrate an understanding of how continual growth in innovative reasoning, technological skills, and presentation impact personal economic opportunities as well as employability. 18

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Identify how to maintain computer and 3D (three-dimensional) printing equipment and solve common hardware problems. 19

19 Identify how to maintain computer and 3D (three-dimensional) printing equipment and solve common hardware problems. 19