**COURSE DESCRIPTION**

**Course** **Title:** Applying Technology 7

**Course** **Number:** 00731

**Course** **Prerequisites:** None

**Course Description:** 7th Grade Technology Education is a semester-long, activity-based course that introduces students to Technology by examining the systems of communication, manufacturing, construction, transportation, and bio-related technologies. Emphasis will be placed on the design process and the application of using tools and materials to complete various Technology activities. This course provides a foundation for future studies in Technology and is a pre-requisite for 8th Grade Technology Education.

**Suggested Grade** **Level**: Grade 7

**Length of Course:** One Semester

**Units of** **Credit:** .5

**PDE Certification and Staffing Policies and Guidelines (CSPG) Required Teacher Certifications:**

CSPG 65 PK-12

To find the CSPG information, go to [CSPG](https://www.education.pa.gov/Educators/Certification/Staffing%20Guidelines/Pages/default.aspx)

**Certification verified by the WCSD Human Resources** **Department:** Yes No

**WCSD STUDENT DATA SYSTEM INFORMATION**

**Course** **Level:** Academic

**Mark** **Types:** Check all that apply.

F – Final Average MP – Marking Period EXM – Final Exam

**GPA** **Type**:  GPAEL-GPA Elementary  GPAML-GPA for Middle Level  NHS-National Honor Society

UGPA-Non-Weighted Grade Point Average  GPA-Weighted Grade Point Average

**State Course** **Code**: 21051

To find the State Course Code, go to [State Course Code](https://nces.ed.gov/forum/sced.asp), download the Excel file for *SCED*, click on SCED 6.0 tab, and choose the correct code that corresponds with the course.

**TEXTBOOKS AND SUPPLEMENTAL MATERIALS**

**Board Approved Textbooks, Software, and Materials:**

**Title:** Introduction to Technology

**Publisher:** Glencoe/McGraw-Hill

**ISBN #:**  0-07-861219-5

**Copyright Date:** 2005

**WCSD Board Approval Date:** 2007

**Supplemental Materials:** CAD Software, Pro Engineering Computer Aided Drafting Program/Software

**Curriculum Document**

**WCSD Board Approval:**

**Date** **Finalized:** 2/15/2018

**Date Approved:**  3/12/2018

**Implementation Year:** 2018-2019

**SPECIAL EDUCATION, 504, and GIFTED REQUIREMENTS**

The teacher shall make appropriate modifications to instruction and assessment based on a student’s Individual Education Plan (IEP), Chapter 15 Section 504 Plan (504), and/or Gifted Individual Education Plan (GIEP).

**SCOPE AND SEQUENCE OF CONTENT AND CONCEPTS**

**Marking Period 1**

* Introduction to Technology
* Design
* Manufacturing

**Marking Period 2**

* Construction Technology
* Transportation Technology
* Communication Technology
* Bio-Related Technology

**Marking Period 3**

* Introduction to Technology
* Design
* Manufacturing

**Marking Period 4**

* Construction Technology
* Transportation Technology
* Communication Technology
* Bio-Related Technology

**Standards/Eligible Content and Skills**

| **Performance Indicator** | **PA Core Standard and/or Eligible Content** | **Marking Period Taught** |
| --- | --- | --- |
| Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks. | RST.6-8.3 | MP1, MP2, MP3, MP4 |
| Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually. | RST.6-8.7 | MP1, MP3 |
| Write arguments focused on discipline-specific content. | WHST.6-8.1 | MP1, MP3 |
| Provide a concluding statement or section that follows from and supports the argument presented. | WHST.6-8.1.e | MP1, MP3 |
| Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes. | WHST.6-8.2 | MP1, MP3 |
| Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples. | WHST.6-8.2.b | MP1, MP3 |
| Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts. | WHST.6-8.2.c | MP1, MP3 |
| Use precise language and domain-specific vocabulary to inform about or explain the topic. | WHST.6-8.2.d | MP1, MP3 |
| Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently. | WHST.6-8.6 | MP1, MP3 |
| Research information from various sources to use and maintain technological products or systems. | 3.5.6-8.A | MP1, MP3 |
| Use instruments to gather data on the performance of everyday products. | 3.5.6-8.B | MP1, MP2, MP3, MP4 |
| Analyze how the creation and use of technologies consumes renewable, non-renewable, and inexhaustible resources; creates waste; and may contribute to environmental challenges. | 3.5.6-8.D | MP1, MP2, MP3, MP4 |
| Consider the impacts of a proposed or existing technology and devise strategies for reducing, reusing, and recycling waste caused by its creation. | 3.5.6-8.E | MP2, MP4 |
| Analyze examples of technologies that have changed the way people think, interact, live, and communicate. | 3.5.6-8.F | MP2, MP4 |
| Examine the ways that technology can have both positive and negative effects at the same time. | 3.5.6-8.I | MP1, MP3 |
| Use tools, materials, and machines to safely diagnose, adjust, and repair systems. | 3.5.6-8.J | MP1, MP2, MP3, MP4 |
| Use devices to control technological systems. | 3.5.6-8.K | MP1, MP2, MP3, MP4 |
| Design methods to gather data about technological systems. | 3.5.6-8.L | MP1, MP3 |
| Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved. | 3.5.6-8.M | MP1, MP2, MP3, MP4 |
| Interpret the accuracy of information collected. | 3.5.6-8.O | MP1, MP3 |
| Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem. | 3.5.6-8.P | MP1, MP3 |
| Apply a technology and engineering design thinking process. | 3.5.6-8.Q | MP1, MP2, MP3, MP4 |
| Develop innovative products and systems that solve problems and extend capabilities based on individual or collective needs and wants. | 3.5.6-8.R | MP1, MP2, MP3, MP4 |
| Illustrate the benefits and opportunities associated with different approaches to design. | 3.5.6-8.S | MP1, MP2, MP3, MP4 |
| Create solutions to problems by identifying and applying human factors in design. | 3.5.6-8.T | MP1, MP2, MP3, MP4 |
| Evaluate and assess the strengths and weaknesses of various design solutions given established principles and elements of design. | 3.5.6-8.U | MP1, MP2, MP3, MP4 |
| Refine design solutions to address criteria and constraints. | 3.5.6-8.V | MP1, MP2, MP3, MP4 |
| Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions. | 3.5.6-8.W | MP1, MP2, MP3, MP4 |
| Defend decisions related to a design problem. | 3.5.6-8.X | MP1, MP2, MP3, MP4 |
| Demonstrate how knowledge gained from other content areas affects the development of technological products and systems. | 3.5.6-8.BB | MP2, MP4 |
| Engage in a research and development process to simulate how inventions and innovations have evolved through systematic tests and refinements. | 3.5.6-8.DD | MP1, MP2, MP3, MP4 |
| Demonstrate how systems thinking involves considering relationships between every part, as well as how the systems interact with the environment in which it is used. | 3.5.6-8.FF | MP1, MP2, MP3, MP4 |
| Compare how different technologies involve different sets of processes. | 3.5.6-8.LL | MP1, MP2, MP3, MP4 |

**ASSESSMENTS**

**PDE Academic Standards, Assessment Anchors, and Eligible Content: The** teacher must be knowledgeable of the PDE Academic Standards, Assessment Anchors, and Eligible Content and incorporate them regularly into planned instruction.

**Formative Assessments: The teacher will use various assessment methods to conduct in-process evaluations of student learning.**

**Effective formative assessments for this course include:**

Formative Assessments:

• Written assignments

• Lab reports

• Web based

* Objective Quizzes

• Use rubrics to assess process, not just product

• Peer evaluations by rubric

**Summative Assessments: The teacher will use various assessment methods to evaluate student learning at the end of an instructional task, lesson, and/or unit.**

**Effective summative assessments for this course include:**

Summative Assessments:

• Performance Assessments

• Written tests

* Projects
* Student Presentations