# IT Essentials – PC Hardware and Software
# Grades 11-12

**Units of Credit:** One Semester (Elective)

**Prerequisites:** None

**Course Description:**
IT Essentials: PC Hardware and Software is a hands-on, career-oriented e-learning solution with an emphasis on practical experience to help students develop fundamental computer skills, along with essential career skills. The Cisco® IT Essentials curriculum helps students prepare for entry-level ICT career opportunities and the CompTIA A+ certification, which helps students differentiate themselves in the marketplace to advance their careers. In addition, the course provides a learning pathway to the Cisco CCNA® Discovery and CCNA Exploration curricula. Leadership and professionalism will be developed through SkillsUSA-VICA and the Professional Development Program. Students are assessed by observing and measuring performance on tests, quizzes, assigned tasks and projects and by the quality of work produced.

**Topics:**
- Computer hardware basics
- Operating system basics and installation
- Graphical and command-line operating system basics
- Computer system maintenance planning techniques
- Computer assembly and troubleshooting
- Installation and troubleshooting of peripherals
- Ergonomic needs and considerations
- Career opportunities and intern possibilities

*NOTE: Throughout this document, learning target types are identified as knowledge ("K"), reasoning ("R"), skill ("S"), or product ("P").*

**STANDARD 1: Students experience various career opportunities and assess personal career pathways.**

**Benchmark 1:**
Explore and identify personal interests, aptitudes, and abilities and develop strategies to achieve tentative career goals.

**Learning Targets (*Type*):**
1. I can use Montana Career Information Systems (MCIS) and/or other systems or web resources to investigate and evaluate my personal interests, aptitudes and abilities. *(S)*
2. I can formulate tentative career goals. *(R)*
3. I can evaluate approaches for meeting my goals. *(R)*

**Benchmark 2:**
Utilize local resources to research career plans.

**Learning Targets (*Type*):**
1. I can identify local resources to develop career plans. *(K)*

2. I can contact my school career counselor or teacher to pursue career pathways. *(S)*

**Benchmark 3:**

Recognize the interrelationships of family, community, career, and leisure roles.

**Learning Targets (*Type*):**

1. I can describe the importance of balance between family and community in regards to career and leisure activities. *(K)*
2. I can compare and contrast the needs of career and leisure activities and how they relate to and/or affect family and community. *(R)*
3. I can demonstrate employability and social skills relative to careers. *(S)*

**STANDARD 2: Students demonstrate an understanding and apply principles of Resource Management (i.e., financial, time, personal management)**

**Benchmark 1:**

Prepare a budget and keep financial records.

**Learning Targets (*Type*):**

1. I can research and report cost of materials and time. *(R,S)*
2. I can document financial inputs and outputs. *(S)*
3. I can identify the necessity to maintain accurate financial records. *(K)*
4. I can stay within a fixed budget. *(S,P)*

**Benchmark 2:**

Prioritize, allocate time, prepare and follow schedules to complete a project.

**Learning Targets (*Type*):**

1. I can estimate the required time to complete a project. *(R)*
2. I can prioritize resources, equipment and tasks. *(R)*
3. I can reflect upon completion. *(K)*

**Benchmark 3:**

Apply appropriate time to task.

**Learning Targets (*Type*):**

1. I can implement a time schedule for task completion. *(S)*

**Benchmark 4:**

Use physical resources wisely to accomplish a goal.

**Learning Targets (*Type*):**

1. I can identify the resources necessary to accomplish the task. *(K)*
2. I can maintain the tools of the trade. *(S)*
3. I can maximize the use of my resources. *(S)*

**STANDARD 3: Students acquire and utilize personal and leadership skills to become successful, productive citizens.**

**Benchmark 1:**

Demonstrate active leadership skills by participation in group activities and projects.

**Learning Targets (*Type*):**

1. I can investigate various leadership styles. *(R)*
2. I can apply leadership styles in group activities and projects. *(R)*
3. I can work as part of a team to design, build, analyze, and test group projects. *(S)*
4. I can develop personal and professional leadership skill through participation in the SkillsUSA student organization activities.(CTSO) *(S)*

**Benchmark 2:**
Demonstrate positive personal and work ethics.
**Learning Targets (*Type*):**
1. I can arrive on time for class and work. *(S)*
2. I can develop personal and work related goals. *(K,P)*
3. I can describe ethical behavior in the workplace. *(K)*
4. I can complete a project by given project completion deadlines. *(S)*
5. I can manage my time so that I can complete assignments and projects by using my time wisely each and every class period. *(R,S)*

**Benchmark 3:**
Demonstrate skills to be a productive citizen.
**Learning Targets (*Type*):**
1. I can develop professional relationships with community members. *(S)*
2. I can contribute to my community in a positive manner. *(S,P)*

**Benchmark 4:**
Apply self-esteem building practices.
**Learning Targets (*Type*):**
1. I can define and provide evidence of my strengths in my career interest areas. *(K,S)*
2. I can persevere through set backs and stay focused on my goals. *(S)*

**Benchmark 5:**
Demonstrate appreciation for diverse perspective needs and characteristics.
**Learning Targets (*Type*):**
1. I can develop a working relationship with diverse populations. *(K,S)*
2. I can demonstrate communication skills that contribute to positive relationships. *(S)*
3. I can work to understand diverse points of view. *(R)*

**Benchmark 6:**
Practice several methods of effective communication.
**Learning Targets (*Type*):**
1. I can demonstrate good listening skills. *(S)*
2. I can effectively communicate verbally through collaborative projects. *(S,P)*
3. I can develop quality written professional communications. *(P)*

**STANDARD 4: Students acquire and demonstrate current technical skills leading to an occupation.**

**Benchmark 1:**
Practice technical skills and procedures required for an occupation.
**Learning Targets (*Type*):**
1. I can demonstrate knowledge and skill with computer fundamentals such as system components, memory, connections, PC assembly/disassembly and maintenance procedures. *(K,S)*
2. I can demonstrate knowledge and skill with software applications related to operating systems, diagnostic software and platforms. *(K,S)*
3. I can develop skills, knowledge and understanding of local area networks in topics such as topologies, network design, software, protocols and OSI layers. *(K,S)*
4. I can develop knowledge and understanding of peer-to-peer network concepts. *(K,S)*

5. I can develop knowledge and skills related to drive components and related problems and applications. *(K,S)*

**Benchmark 2:**

Practice safe and appropriate use of technology.

**Learning Targets (*Type*):**

1. I can engage in meaningful, hands-on, minds-on and conceptual based computer systems related concepts. *(K,R,S)*
2. I can demonstrate and develop skills with wide area networks including e-mail, *(S)* Internet, network topologies, components, routers, WAN services and other related content. *(S)*
3. I can develop competencies in the safe and efficient use of the tools, machines, materials, and processes of PC technology. *(S)*

**Benchmark 3:**

Select the appropriate tools, equipment, and procedures for the task.

**Learning Targets (*Type*):**

1. I can select the correct tools and equipment to most efficiently solve problems that I encounter. *(K,S)*
2. I can demonstrate knowledge and understanding of service equipment and digital techniques. *(K,S)*
3. I can use tools, machines, and equipment to repair PCs. *(K,R,S)*
4. I can creatively solve problems by considering the tools, equipment and resources available to successfully complete projects within the given guidelines. *(R,S)*
5. I can develop skills necessary to work with others and solve problems. *(S)*

**Benchmark 4:**

Manage and maintain technological tools and follow troubleshooting protocol.

**Learning Targets (*Type*):**

1. I can develop skills knowledge and understanding of dial up communications concepts such as phone lines, communication software, file transfer and troubleshooting. *(K,S)*
2. I can demonstrate knowledge and understanding of basic I/O such as keyboards, video, monitors, troubleshooting and other I/O components. *(K,S)*

**Benchmark 5:**

Apply technical information to a variety of sources.

**Learning Targets (*Type*):**

1. I can apply concepts from mathematics, science, communications and computer skills in the context of computer systems technology. *(K,S)*
2. I can demonstrate knowledge and understanding of computer systems careers, employment outlook and post-secondary education opportunities. *(K,S)*

**STANDARD 5: Students know and demonstrate the requirements of the workplace through authentic application.**

**Benchmark 1:**

Practice and demonstrate academic and technical skills to a workplace setting.

**Learning Targets (*Type*):**

1. I can practice, and demonstrate my technical workplace skills in my school lab. *(S)*
2. I can research, write and present on the technical content utilizing academic skills found

in workplace settings. *(R,S,P)*

**Benchmark 2:**

Apply the concepts of entrepreneurship.

**Learning Targets (*Type*):**

1. I can explain the concepts of entrepreneurship. *(K)*
2. I can demonstrate the concepts of entrepreneurship through a unique project. *(R,S)*
3. I can present my unique project to an authentic audience. *(S,P)*

**Benchmark 3:**

Identify possible outcomes and consequences of decisions.

**Learning Targets (*Type*):**

1. I can identify possible consequences of carelessness and horseplay. *(K)*
2. I can explain potential outcomes of not following directions, (i.e. safety, guidelines, rubrics). *(R)*

**Benchmark 4:**

Use acceptable industry standard equipment in a school setting.

**Learning Targets (*Type*):**

1. I can successfully use acceptable industry standard equipment to produce an authentic product within budget constraints. *(S,R,P)*