



INFORMATION TECHNOLOGY FUNDAMENTALS

Bill McIlwain

E-mail: wemcilwain@madisoncity.k12.al.us

Course Description:

IT Fundamentals is designed for the students to gain the knowledge to identify and explain the basic hardware and software components of a computer, as well as recognize network components and protocols, and common security threats and vulnerabilities.

Before taking this course, students should have a basic understanding of computers, including the following skills:

- Installing and running programs.
 - Using basic productivity software including word processing applications.
 - Saving files created by common applications.
 - Browsing the Internet.
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Course Objectives:

By the time students have completed this course, they should be able to do the following:

- Set up a new computer
- Identify system requirements when purchasing a new computer
- Understand the technology and specifications used to describe computer components, and make informed choices about which device characteristics are required for the situation.
- Install or upgrade the operating system.
- Manage external devices.
- Identify basic security threats.
- Troubleshoot common computer problems that can be resolved without replacing internal components.
- Recognize basic networking topologies and protocols.
- Connect to a small home network.

In addition, this course will help prepare the student to pursue the IT Fundamentals+ and A + CompTIA certification exams.

- IT Fundamentals+ certification exam can be taken by the student at the end of the semester.
- Exam can be proctor in class by your teacher.
- Exam is paid for by Madison City Schools



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Classroom Expectations:

You are expected to conduct yourself in a respectful and productive manner. In addition to all the rules and expectations listed in the student handbook, I expect you to have a positive attitude, treat others with respect, practice self-discipline, and demonstrate responsibility. If these conditions are not met, you can expect one-on-one meetings with me, parent/instructor conferencing, and administrative action, if necessary.

Concerning the use of cell phones and other electronic devices:

Devices should be on silent and kept in your purse, backpack, or pocket during class unless otherwise instructed. You may not place it on your desk. Parents, guardians, and other family members should call the front office in case of emergency.

If you violate this rule, you can expect the following consequences:

- *First offense* – The phone or device will be placed in a phone chart at the front of the room. You may pick it up at the end of class.
 - *Second offense* – The phone or device will again be placed in a phone chart at the front of the room until the end of class and a parent/guardian will be notified.
 - *Third offense* – This is defiance and I will notify an administrator.
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Grading Policy:

Major assessments will count 70 percent of your grade. Homework and classwork will account for 30 percent of your grade. Grades will be updated weekly in PowerSchools. Each grading period will consist of nine weeks.

Make-up Work Policy:

Make-up tests will **only** be given to a student who has an **excused absence**. **The student must make arrangements with the teacher to take a make-up test. Tests may be taken during Patriot Path with prior arrangement from each teacher.** A student only has two chances (the next two Patriot Paths after the absence) to make up a test. All make-up tests will be administered in the designated classroom on the Patriot Path session roster.

Homework/Classwork: Students who are absent for **excused reasons** will be permitted to make up missed work. **It is the student's responsibility to get their work assignments the day upon return to school and complete the assignments according to a time frame determined by the teacher within two weeks of the date of the last absence.** Grades of zero will be assigned for assignments missed because of unexcused absences.



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Text and Other Required Reading:

- **TestOut.com** online training and labs: **IT Fundamentals Pro**
(Students will have access to the PC Pro license for a year after activation)

- **CompTIA IT Fundamentals (ITF+)**
Study Guide: Exam FC0 U61 2nd Edition
by Quentin Docter

Materials and Supplies Needed:

Flash Drive, Pencil/Pen, brain.
Note taking is strongly encouraged!
*Other materials for IT Fundamentals curriculum will be added on an as needed basis.

Laptops

Concerning laptop utilization: 1. Student laptops should not be hard-wired to the network or have print capabilities. 2. Use of discs, flash drives, jump drives, or other USB devices will not be allowed on Madison City computers. 3. Neither the teacher, nor the school is responsible for broken, stolen, or lost laptops. 4. Laptops and other electronic devices will be used at the individual discretion of the teacher.

Turnitin Notice

The majority of writing assignments in this course will be submitted to Turnitin via the Schoology learning platform. Turnitin generates a report on the originality of student writing by comparing it with a database of periodicals, books, online content, student papers, and other published work. This program will help students discern when they are using sources fairly, citing properly, and paraphrasing effectively - skills essential to all academic work.

Students will have the opportunity to review their Turnitin originality report and will have the opportunity to make revisions before submitting their work for grading. Once their work is submitted, teachers have the opportunity to view the student/s originality report and grade accordingly.

Accommodations

Requests for accommodations for this course or any school event are welcomed from students and parents.



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18 - TENTATIVE WEEK PLAN*	
Week 1	Unit 1: PC Technician IT Fundamentals introduction, IT job search, Safety quiz, Open TestOut account
Week 2	Binary, History of Computers, Troubleshooting procedures, PC Tools and maintenance
Week 3	Unit 2: System Components Motherboards, System Cases, Processors, Random Access Memory
Week 4	BIOS, Expansion Cards, Video & Audio Cards
Week 5	Unit 3: Peripheral Devices Device connectors, Different Display Devices
Week 6	Driver management, Printing devices
Week 7	Unit 4: Software/Operating Systems Operating system functions & OS Versions, Linux, Windows, MAC
Week 8	Software Development, Introduction to Different Programming Languages, Programming Terminology
Week 9	Unit 5: Networking/Storage Network devices, Basic Network connections, Cisco Packet Tracer Activities
Week 10	Network topologies, Ethernet standards, Cabling, IP addressing
Week 11	Network storage, Network troubleshooting
Week 12	Unit 6: Security Introduction Password policies, Best practices, Authentication
Week 13	Web browsing preparation and maintenance, Email and online safety
Week 14	Unit 7: Threats & Vulnerabilities Malware, Social Engineering, Stuxnet
Week 15	Historic ciphers, Physical security
Week 16	Unit 8: Wireless & Wireless Security Explore different wireless connections, Creating a SOHO network, Wireless security
Week 17	Internet of Things, Securing the Internet of Everything
Week 18	Finals



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Please sign below to acknowledge that you have received, read, and understood the syllabus.

Student name: _____

Student signature: _____

Parent/guardian name: _____

Parent/guardian signature: _____

Parent/guardian, please provide two ways for me to contact you (email address, phone numbers):

Parent/guardian Email:

Parent/Guardian Phone number:
