

Student Name \_\_\_\_\_ Instructor Name \_\_\_\_\_

High School or Vocational Center \_\_\_\_\_ Grade \_\_\_\_\_

**COMPETENCY RECORD FOR ARTICULATION**  
**Muskegon Community College**  
**Electronics**

Please check below each skill the student has mastered as described, with 80 percent accuracy, or with an A or B grade. The skills needed for articulation of each course are listed.

**ELTR 109**  
**PC Maintenance 1**  
**3 Credit Hours**

Task	Satisfactory	Unsatisfactory
Introduction to Computer Repair <ul style="list-style-type: none"> <li>▪ Identify common technician qualities</li> <li>▪ Understand basic computer terms</li> <li>▪ Identify common computer parts</li> <li>▪ Recognize and identify common computer ports</li> </ul>		
Motherboard <ul style="list-style-type: none"> <li>▪ Define the purpose of the major components on a motherboard including the BIOS, clock, front side bus, and expansion slots</li> <li>▪ Explain the basic operation of a microprocessor and what issues must be considered when upgrading it</li> <li>▪ Recognize and identify the motherboard, CPU, and expansion slots</li> <li>▪ Compare and contrast motherboard expansion slots</li> <li>▪ Identify methods to add functionality to portable devices</li> <li>▪ Explain different motherboard technologies such as MMX, HyperTransport, HyperThreading, and dual/quad-core</li> </ul>		
System Configuration <ul style="list-style-type: none"> <li>▪ Distinguish between the various methods used to configure a computer</li> <li>▪ Describe how to replace a motherboard battery</li> <li>▪ Identify system resources such as interrupts, DMA channels, memory addresses, and I/O addresses</li> <li>▪ Differentiate between different PC buses and describe how to configure them</li> <li>▪ Describe how to configure and install adapters/devices in a Windows environment</li> <li>▪ Learn the benefits of a "one thing at a time" approach to problem solving</li> </ul>		

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<p><b>Disassembly and Power</b></p> <ul style="list-style-type: none"> <li>▪ Describe how static electricity can damage computer components</li> <li>▪ Describe what type of equipment causes RFI and EMI and what to do when they occur</li> <li>▪ List tools a technician needs</li> <li>▪ Define the importance and use of diagramming when disassembling a computer</li> <li>▪ Disassemble and reassemble a computer</li> <li>▪ Define and apply basic electronic terms that relate to computer support</li> <li>▪ Perform basic checks, such as voltage and continuity</li> <li>▪ Describe the purposes of a power supply</li> <li>▪ Install a power supply and connect the motherboard and devices to it</li> </ul>		
<p><b>Logical Troubleshooting</b></p> <ul style="list-style-type: none"> <li>▪ Perform basic procedures used when troubleshooting a PC</li> <li>▪ Describe how the POST error codes help when troubleshooting a computer</li> <li>▪ Describe the importance of good communication with the computer user</li> </ul>		
<p><b>Memory</b></p> <ul style="list-style-type: none"> <li>▪ Differentiate between different memory technologies</li> <li>▪ Plan for a memory installation or upgrade</li> <li>▪ Install and remove memory chips</li> <li>▪ Describe how memory works with the operating system</li> <li>▪ Optimize memory for Windows-based platforms</li> <li>▪ Troubleshoot memory problems</li> </ul>		
<p><b>Floppy Drives and IDE/SCSI Devices</b></p> <ul style="list-style-type: none"> <li>▪ Install or replace a floppy drive</li> <li>▪ Define and explain fundamental hard drive terminology</li> <li>▪ Compare and contrast IDE and SCSI technologies</li> <li>▪ Install and configure IDE and SCSI devices</li> <li>▪ Troubleshoot IDE and SCSI problems</li> <li>▪ Perform hard drive preventive maintenance</li> </ul>		
<p><b>Multimedia Devices</b></p> <ul style="list-style-type: none"> <li>▪ Differentiate between various CD and DVD technologies</li> <li>▪ Determine a CD or DVD X factor from an advertisement or specification sheet</li> <li>▪ Explain the basics of how a CD/DVD drive works</li> <li>▪ State the various interfaces and ports used to connect CD/DVD drives</li> <li>▪ Recommend, install, configure, and troubleshoot CD/DVD drives</li> <li>▪ Explain the basic operation of a sound card</li> <li>▪ Install, configure, and troubleshoot a sound card</li> <li>▪ Use Windows XP to verify CD/DVD drive and sound card installation</li> <li>▪ Explain the basic principles of how a scanner works</li> </ul>		

Task	Satisfactory	Unsatisfactory
<p><b>Serial Devices</b></p> <ul style="list-style-type: none"> <li>▪ Describe the difference between serial and parallel data transfers</li> <li>▪ Configure a serial port, external serial device, or internal modem, and all its associated system resources and individual settings</li> <li>▪ Define basic handshaking between a DTE device and a DCE device</li> <li>▪ Use Windows tools to determine which system resources can be assigned to serial devices and determine if they are working properly</li> <li>▪ Explain basic modern concepts and analog modem limitations</li> <li>▪ Compare and contrast analog modems, cable modems, and digital modems</li> </ul>		
<p><b>Video</b></p> <ul style="list-style-type: none"> <li>▪ Describe the components of the video subsystem</li> <li>▪ Differentiate among monitor types including laptop displays</li> <li>▪ Define basic monitor theory and terminology</li> <li>▪ Describe issues regarding video memory</li> <li>▪ Install a video adapter and associated software</li> <li>▪ Perform basic video troubleshooting techniques</li> </ul>		
<p><b>Printers</b></p> <ul style="list-style-type: none"> <li>▪ Explain basic printing concepts</li> <li>▪ Describe how each type of printer operates</li> <li>▪ Detail how printers require and use software</li> <li>▪ Perform a printer installation</li> <li>▪ Perform preventive printer maintenance</li> <li>▪ Control printers from Windows and make appropriate printer adjustments</li> <li>▪ Recognize and troubleshoot printing problems in the Windows environment</li> <li>▪ Solve common printer problems and solutions</li> </ul>		
<p><b>Basic Windows and Windows Commands</b></p> <ul style="list-style-type: none"> <li>▪ Identify, explain, and use common desktop icons</li> <li>▪ Manage files and folders including attributes, compression, and encryption</li> <li>▪ Describe the purpose of the registry and how it is organized into subtrees</li> <li>▪ Work from a command prompt and perform basic functions using commands (to access the file structure, create a file, view a file, copy and delete files, and set attributes on files and directories)</li> </ul>		
<p><b>Windows XP Professional and Windows 7</b></p> <ul style="list-style-type: none"> <li>▪ Distinguish between Windows XP Professional and other operating systems</li> <li>▪ Back up and restore the System State</li> <li>▪ Configure and use System Restore utility</li> <li>▪ Install, configure, and troubleshoot Windows XP Pro and Win 7</li> <li>▪ Use the proper control panel to control Windows XP hardware and software</li> <li>▪ Install hardware and software on a Windows XP and Win 7 computer</li> <li>▪ Use the driver roll back feature</li> <li>▪ Use Windows XP's Administrative tools including Microsoft Management console</li> <li>▪ Explain the boot process and troubleshoot boot problems including using various boot options</li> <li>▪ Define when to access and how to use Computer Management console, Task Manager, and Event Viewer</li> </ul>		

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<p><b>Introduction to Networking</b></p> <ul style="list-style-type: none"> <li>▪ Differentiate between peer-to-peer and server-based networks</li> <li>▪ Identify commonly used network topologies</li> <li>▪ Compare and contrast types of network cabling</li> <li>▪ Explain the differences between various network access methods</li> <li>▪ Explain how Ethernet works</li> <li>▪ Articulate commonly used network protocols</li> <li>▪ Define the purpose and identification of a MAC address and an IP address</li> <li>▪ Apply IP addressing concepts</li> <li>▪ Define the purpose of DHCP, WINS, and DNS</li> <li>▪ Configure an NIC for network connectivity</li> </ul>		
<p><b>Computer and Network Security</b></p> <ul style="list-style-type: none"> <li>▪ Detail common components contained in a security policy</li> <li>▪ Describe techniques and devices used in computers and networks</li> <li>▪ Recommend laptop security methods and devices</li> <li>▪ Detail and perform operating system and data protection</li> <li>▪ Optimize a Windows-based system for security</li> <li>▪ Define common wireless security terms</li> </ul>		

Instructor's Signature \_\_\_\_\_ Date \_\_\_\_\_