

Student Name: \_\_\_\_\_

Date: \_\_\_\_\_

**PROGRAM COMPETENCY PROFILE FOR CAREER TECHNICAL EDUCATION**  
**Career Cluster: Information Technology**

**Program Name: Computer Installation and Repair Technology/Technician CIP: 470104**  
 National Standard: CompTIA A+

Effective 8/09

<b>Competencies</b> (statement that provides the overview and defines the instructional area) <b>Student will:</b>	<b>Knowledge, Content and Skills</b> (what a student needs to know and be able to do and upon which they will be assessed ) <b>Student will:</b>	<u>NH Common Core State Standards</u> – Aligned <ul style="list-style-type: none"> <li>• English/Language Arts/Literacy: E</li> <li>• Mathematics: M</li> <li>• Science: S</li> <li>• Art: A</li> </ul>	<b>Rating Scale -Sample Performance Assessments</b> (Performance tasks the student needs to demonstrate in order to be rated proficient in meeting the competency) <b>Student will:</b>				
<b>Understand proper use of tools and equipment, and preventative maintenance practices to provide a safe work environment</b>	1. Practice proper electrical safety. <b>AAI 8. Health, Safety, and Environment:</b> Explain the health and safety laws and practices affecting the employee, the surrounding community, and the environment in this industry.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 25%;">1</td> <td style="width: 25%;">2</td> <td style="width: 25%;">3</td> <td style="width: 25%;">4</td> </tr> </table>	1	2	3	4
	1	2	3	4			
	2. Demonstrate proper tool practices and techniques.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 25%;">1</td> <td style="width: 25%;">2</td> <td style="width: 25%;">3</td> <td style="width: 25%;">4</td> </tr> </table>	1	2	3	4
	1	2	3	4			
	3. Apply proper electrostatic discharge procedures.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 25%;">1</td> <td style="width: 25%;">2</td> <td style="width: 25%;">3</td> <td style="width: 25%;">4</td> </tr> </table>	1	2	3	4
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4. Differentiate between low and high voltage AC and DC electrical systems.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 25%;">1</td> <td style="width: 25%;">2</td> <td style="width: 25%;">3</td> <td style="width: 25%;">4</td> </tr> </table>	1	2	3	4	
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5. Demonstrate proper care of materials, tools, and equipment.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 25%;">1</td> <td style="width: 25%;">2</td> <td style="width: 25%;">3</td> <td style="width: 25%;">4</td> </tr> </table>	1	2	3	4	
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<b>Understand and utilize fundamental electrical concepts in order to insure safe connections.</b>	6. Describe the four basic electrical quantities (volts, amps, ohms, watts).		<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 25%;">1</td> <td style="width: 25%;">2</td> <td style="width: 25%;">3</td> <td style="width: 25%;">4</td> </tr> </table>	1	2	3	4
	1	2	3	4			
	7. Describe the relationship between electricity and magnetism.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 25%;">1</td> <td style="width: 25%;">2</td> <td style="width: 25%;">3</td> <td style="width: 25%;">4</td> </tr> </table>	1	2	3	4
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8. Measure current, voltage and resistance.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 25%;">1</td> <td style="width: 25%;">2</td> <td style="width: 25%;">3</td> <td style="width: 25%;">4</td> </tr> </table>	1	2	3	4	
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<b>Comprehend basic hardware principles, methods, and procedures in order to set up and troubleshoot systems</b>	9. Select components of a microcomputer system.		<table border="1"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table>	1	2	3	4
	1	2	3	4			
	10. Identify available system resources.		<table border="1"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table>	1	2	3	4
	1	2	3	4			
	11. Configure the computer BIOS (basic input/output system).		<table border="1"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table>	1	2	3	4
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12. Illustrate important considerations when selecting a system board.		<table border="1"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table>	1	2	3	4	
1	2	3	4				
13. Identify common peripheral ports, associated cabling, and connectors.		<table border="1"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table>	1	2	3	4	
1	2	3	4				
14. Identify basic printing concepts, operations, and components.		<table border="1"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table>	1	2	3	4	
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<b>Comprehend basic system hardware principles, methods, and procedures in order to set up and troubleshoot systems</b>	15. Install a system device and random access memory.		<table border="1"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table>	1	2	3	4
	1	2	3	4			
	16. Configure data storage devices.		<table border="1"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table>	1	2	3	4
	1	2	3	4			
17. Set up peripheral devices.		<table border="1"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table>	1	2	3	4	
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18. Configure a system board.		<table border="1"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table>	1	2	3	4	
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<b>Understand software application concepts and utilization in order to enhance customer service</b>	19. Install and configure computer software. <b>AAI 5. Underlying Principles of Technology:</b> Explain through discussion the technological systems used within this industry.		<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4
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	20. Demonstrate the use of word processing, database, spreadsheet, and communications software.		<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4
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21. Discern ethical and legal practices.		<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4	
1	2	3	4				
22. Demonstrate the process of saving, retrieving, deleting, and copying files.		<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4	
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<b>Comprehend and utilize computer operating systems in order to repair and maintain a system</b>	23. Differentiate between various operating systems and express a basic knowledge of each.		<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4
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	24. Discuss the function of and install device drivers.		<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4
	1	2	3	4			
25. Partition and format a drive and load the operating system. <b>AAI 4. Technical and Production Skills:</b> Identify specific production and technical skills required for this industry.		<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4	
1	2	3	4				
26. Demonstrate the use of the basic operating system commands.		<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4	
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<b>Comprehend basic maintenance principles, methods, and procedures to prevent system failure</b>	27. Describe the function and consequences of scandisk and defragmentation.		<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4
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	28. Perform basic system maintenance.		<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4
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	29. Discuss the importance of surge protection and uninterruptible power supplies.		<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4
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30. Devise a virus protection and detection plan.		<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4	
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31. Explain a procedure for backups and fault tolerance.		<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4	
1	2	3	4				
<b>Understand basic troubleshooting methods, procedures, and techniques to troubleshoot and repair a system</b>	32. Troubleshoot and solve computer problems.		<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4
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	33. Differentiate between hardware, software and user related problems (pc triad).		<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4
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34. Interpret the meaning of common error codes and startup messages.		<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4	
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35. Use diagnostic software to locate a computer problem.		<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4	
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	36. Troubleshoot the boot process of a computer system.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 25%;">1</td> <td style="width: 25%;">2</td> <td style="width: 25%;">3</td> <td style="width: 25%;">4</td> </tr> </table>	1	2	3	4
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	37. Identify service techniques for printers and other peripherals.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 25%;">1</td> <td style="width: 25%;">2</td> <td style="width: 25%;">3</td> <td style="width: 25%;">4</td> </tr> </table>	1	2	3	4
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	38. Troubleshoot a networked computer.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 25%;">1</td> <td style="width: 25%;">2</td> <td style="width: 25%;">3</td> <td style="width: 25%;">4</td> </tr> </table>	1	2	3	4
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<b>Understand customer service concepts and practices to effectively communicate with customers</b>	39. Demonstrate the ability to provide customers with technical support (e.g., answering questions related to hardware and software).		<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 25%;">1</td> <td style="width: 25%;">2</td> <td style="width: 25%;">3</td> <td style="width: 25%;">4</td> </tr> </table>	1	2	3	4
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<b>Comprehend methods used to locate and utilize support resources in order to find solutions to problems</b>	40. Utilize the intranet and Internet for locating and obtaining PC resources.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 25%;">1</td> <td style="width: 25%;">2</td> <td style="width: 25%;">3</td> <td style="width: 25%;">4</td> </tr> </table>	1	2	3	4
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	41. Demonstrate use of product documentation to assist in the proper configuration and installation of devices.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 25%;">1</td> <td style="width: 25%;">2</td> <td style="width: 25%;">3</td> <td style="width: 25%;">4</td> </tr> </table>	1	2	3	4
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	42. Utilize a variety of resources to locate drivers and documentation.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 25%;">1</td> <td style="width: 25%;">2</td> <td style="width: 25%;">3</td> <td style="width: 25%;">4</td> </tr> </table>	1	2	3	4
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<b>Understand basic network concepts to interconnect systems</b>	43. Describe current LAN (local area network) topologies.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 25%;">1</td> <td style="width: 25%;">2</td> <td style="width: 25%;">3</td> <td style="width: 25%;">4</td> </tr> </table>	1	2	3	4
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	44. Identify and differentiate between a variety of network hardware to include hubs, switches and routers.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table>	1	2	3	4
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	45. Describe the underlying concepts of TCP/IP (transmission control protocol/internet protocol).		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table>	1	2	3	4
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	46. Identify basic networking concepts, common network protocols, and software.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table>	1	2	3	4
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	47. Identify procedures for connecting a workstation to a network.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table>	1	2	3	4
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<b>Comprehend network principles and procedures to repair and maintain the networked system</b>	48. Demonstrate familiarity with network operating system and configuration techniques.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table>	1	2	3	4
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	49. Attach and test connectors to network cabling.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table>	1	2	3	4
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	50. Install and configure a network adapter.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table>	1	2	3	4
1	2	3	4				
51. Network two or more computers.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table>	1	2	3	4	
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52. Share computer resources in a networked environment.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table>	1	2	3	4	
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<b>Understand the fundamental concepts of entrepreneurship and how entrepreneurship influences the economy</b>	53. Discuss and assess venture creation possibilities and identify the steps in planning the venture. <b>AAI 1. Planning:</b> Explain the key elements of a long-term plan for a successful company. <b>AAI 2. Management:</b> Discuss the different forms of management and ownership within this industry. <b>AAI 3. Finance:</b> Explain the key components of financial management of a company.		<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4
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	54. Identify the resources needed for venture startup and operation.		<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4
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	55. Discuss the options in planning the venture’s future (growth, development, demise). <b>AAI 6. Labor Issues:</b> Explain the employees’ and employers’ rights and responsibilities in this industry. <b>AAI 7. Community Issues:</b> Discuss the ways a company can impact its community and the ways a community can impact a company.		<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4
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	56. Identify and discuss the traits and behaviors of an entrepreneur (leadership, personal assessment, personal management).		<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4
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<b>Understand the importance of personal growth and leadership to enhance career success</b>	57. Demonstrate personal growth, community leadership, democratic principles and social responsibility by participating in activities/events offered through student organizations.		<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4
1	2	3	4				
<b>Understand the necessary employability skills in order to achieve success in today's workplace</b>	<b>58. Decision-Making &amp; Problem-Solving:</b> Demonstrate and apply good decision-making and problem-solving skills by outlining issues in situations/problems and determining, collecting, and organizing information needed in order to formulate a solution.		<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table> <b>For Example:</b> - create an outline - create a troubleshooting log - make class presentation - develop and test strategies or options that work - provide examples of the strategies or options tested or tried - compare and analyze pros and cons of identified strategies or options - through teamwork, arrive at a decision or determine a solution that is well suited to the task - independently arrive at a decision or determine a solution that is well suited to the task - communicate in a clear format how the solution was formed - justify or describe how and why a particular solution option was chosen	1	2	3	4
1	2	3	4				

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**PROGRAM COMPETENCY PROFILE FOR CAREER TECHNICAL EDUCATION**  
**Career Cluster: Information Technology**

**Program Name: Computer Installation and Repair Technology/Technician CIP: 470104**

Effective 8/09

National Standard: CompTIA A+

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	<b>59. Self –Management:</b> Demonstrate and apply self-management skills by adhering to regulations, being responsible, and following through on commitments. <b>AAI 9. Personal Work Habits:</b> Explain the work habits an employer looks for in an employee in this industry.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 25%;">1</td> <td style="width: 25%;">2</td> <td style="width: 25%;">3</td> <td style="width: 25%;">4</td> </tr> </table> <b>For Example:</b> - have a written test on applicable policies and procedures - assess student orientation knowledge through instructor observations and written unit test - review student handbook - adhere to regulations in school, classroom, and everyday settings - build trust by being consistent, dependable, and verbally positive with others - ask questions and listen to others - keep track of assignments and/or responsibilities - have work done on time - respond positively to constructive feedback - show respect for others and their points of view - set individual goals and document progress toward achieving those goals - take initiative to pursue learning - adapt as necessary to create a positive outcome for self and others - advocate appropriately for himself/herself	1	2	3	4
1	2	3	4				

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	<b>60. Communication Skills:</b> Demonstrate and apply effective communication skills: verbal, written, visual, and listening.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 25%;">1</td> <td style="width: 25%;">2</td> <td style="width: 25%;">3</td> <td style="width: 25%;">4</td> </tr> </table> <p><b>For Example:</b></p> <ul style="list-style-type: none"> <li>- be given a work order that contains written instructions of a specific job and complete the work order</li> <li>- create a power point presentation</li> <li>- participate in a debate</li> <li>- perform mock interviews</li> <li>- develop a topic</li> <li>- include details to support a main point</li> <li>- use appropriate grammar and sentence structure</li> <li>- organize writing and/or presentation materials</li> <li>- use constructive feedback to improve skill</li> <li>- participate in discussion and conversation by listening, entering in, taking turns, responding to others' remarks, asking questions, summarizing and closing, as appropriate to the given context</li> <li>- use varied vocabulary for clarity and effectiveness</li> <li>- support his/her ideas in a public forum using the appropriate visual/audio aides</li> <li>- select and use the appropriate media and method(s) to communicate the subject effectively</li> <li>- adapt writing, speaking, and/or visual presentations effectively to a particular audience</li> <li>- act on or respond appropriately to verbal and non-verbal cues from the audience</li> </ul>	1	2	3	4
1	2	3	4				

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	<b>61. Ability to Work with Others:</b> Demonstrate and apply the necessary skills in order to work effectively with others.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 25%;">1</td> <td style="width: 25%;">2</td> <td style="width: 25%;">3</td> <td style="width: 25%;">4</td> </tr> </table> <p><b>For Example:</b></p> <ul style="list-style-type: none"> <li>- role play a situation in which there is a conflict which must be resolved</li> <li>- compose a list of what she/he believes to be the most common problems within that profession after reviewing appropriate work ethics standards</li> <li>- conduct an interview with a manager and share report with classmates</li> <li>- demonstrate knowledge of individual strengths he/she brings to a group</li> <li>- demonstrate knowledge of and respect for cultural and individual differences</li> <li>- demonstrate beginning skills in conflict management by outlining the issues involved and others' points of view</li> <li>- demonstrate knowledge of the possible roles and responsibilities that individuals assume while working with others</li> <li>- demonstrate knowledge of group skills: listening, brainstorming, clarifying information, showing initiative, acknowledging contributions, defining group tasks, and responding positively to constructive feedback</li> <li>- demonstrate increasing skills in conflict management by brainstorming a variety of solutions and their possible outcomes</li> <li>- apply his/her individual strengths to enhance a group's performance</li> <li>- assume responsibilities within a group</li> <li>- demonstrate the use of group skills in a way that enhances a group's performance</li> <li>- demonstrate skills in conflict management by describing, justifying, and applying a resolution process, and reflecting on the outcome</li> </ul>	1	2	3	4
1	2	3	4				

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	<b>62. Information Use - Research, Analysis, Technology:</b> Demonstrate and apply the use of information through research, analysis, and technology.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 25%;">1</td> <td style="width: 25%;">2</td> <td style="width: 25%;">3</td> <td style="width: 25%;">4</td> </tr> </table> <b>For Example:</b> - do a research project and develop a presentation for the class - keep a daily notebook - show use of a plan for gathering information - gather information from a variety of sources, using a variety of technologies - use sources that are current and appropriate to the topic - evaluate sources for correct and trustworthy information - document sources of information appropriately - demonstrate and apply the skills in using software applications (MS Office) - use a filing/organization system for information, such as notebook, disk, etc. - justify the use of a particular organizational system for a particular product - demonstrate effective communication skills (written, oral, listening) - effectively present a thesis, supporting evidence, and a conclusion using a variety of media	1	2	3	4
1	2	3	4				

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	<b>63. Mathematical Concepts:</b> Demonstrate mathematical and computation skills as applied to real world situations.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 25%;">1</td> <td style="width: 25%;">2</td> <td style="width: 25%;">3</td> <td style="width: 25%;">4</td> </tr> </table> <b>For Example:</b> - keep a log of all possible uses of mathematics noticed throughout the class/lab/worksite - compute accurately, applying addition, subtraction, multiplication, and division on real numbers, fractions, percents, and decimals - collect, interpret, organize and display relevant data for solving a mathematics problem - translate real world problems into mathematical representations - express and present mathematical ideas clearly in everyday written and oral language - express in written and oral language how mathematics connects to other contexts outside the mathematics classroom - use basic numerical concepts such as whole numbers and percentages in practical situations; make reasonable estimates of arithmetic results without a calculator; and use tables, graphs, diagrams, and charts to obtain or convey quantitative information - approach practical problems by choosing appropriately from a variety of mathematical techniques; use quantitative data to construct logical explanations for real world situations; express mathematical ideas and concepts orally and in writing; and understand the role of chance in the occurrence and prediction of events	1	2	3	4
1	2	3	4				

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	<p><b>64. General Safety:</b> Demonstrate and apply safe practices and procedures in the workplace.</p>		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table> <p><b>For Example:</b></p> <ul style="list-style-type: none"> <li>- develop scenarios of hazards and accidents using publications and the internet</li> <li>- be observed by teacher</li> <li>- take written quizzes/written tests</li> <li>- demonstrate knowledge of safety and sanitation practices and procedures</li> <li>- identify and report hazardous conditions and safe working procedures</li> <li>- use personal protective equipment and clothing</li> </ul>	1	2	3	4
1	2	3	4				
	<p><b>65. Career Development:</b> Demonstrate personal/career development skills by completing a career plan.</p>		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table> <p><b>For Example:</b></p> <ul style="list-style-type: none"> <li>- complete a self-awareness inventory</li> <li>- develop a career portfolio</li> <li>- use a career software, such as Choices, to measure their aptitudes and abilities for particular careers</li> <li>- use available resources (college catalogs and websites) to research information about postsecondary educational opportunities</li> <li>- select a career in the field and outline educational and skill requirements, expected job growth, and salaries</li> <li>- review with teacher software printout to assess their aptitudes and abilities</li> <li>- make appropriate choices in pursuit of postsecondary education or training and/or direct entry into the world of work</li> <li>- plan a senior experiential project to review and evaluate a variety of career choices</li> </ul>	1	2	3	4
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