

# CIST 1122 - Hardware Installation and Maintenance ( version 201003L )

## Course Title                      Course Development      Learning Support

Hardware Installation and Maintenance      Standard                      No

### Course Description

This course serves to provide students with the knowledge of the fundamentals of computer technology, networking, and security along with the skills required to identify hardware, peripheral, networking, and security components with an introduction to the fundamentals of installing and maintaining computers. Students will develop the skills to identify the basic functionality of the operating system, perform basic troubleshooting techniques, utilize proper safety procedures, and effectively interact with customers and peers. This course is designed to help prepare students for the CompTIA A+ certification examination.

### Pre-requisites

Pre-requisites: All Required

|                   |
|-------------------|
| Program Admission |
|-------------------|

### Co-requisites

Co-requisites: None

### Course Length

|                                 | Minutes     | Contact Hour | Semester Credit | WLU           |
|---------------------------------|-------------|--------------|-----------------|---------------|
| <b>Lecture:</b>                 | <b>1500</b> | <b>30</b>    |                 |               |
| <b>Lab 2:</b>                   | <b>1500</b> | <b>30</b>    |                 |               |
| <b>Lab 3:</b>                   | <b>2250</b> | <b>45</b>    |                 |               |
| <b>Total:</b>                   | <b>5250</b> | <b>105</b>   | <b>4</b>        |               |
| <b>Semester Credit Hours:</b>   |             |              | <b>4</b>        | <b>161.25</b> |
| <b>Breakout Detail of Lab 3</b> |             |              |                 |               |
| <b>Practicum/Internship</b>     | <b>0</b>    | <b>0</b>     |                 |               |
| <b>Clinical</b>                 | <b>0</b>    | <b>0</b>     |                 |               |

### Competencies & Outcomes

| Order                         | Description   | Lecture | Lab 2 | Lab 3 | Total Min | Credit Hrs             | Pract Intern             | Clinical |
|-------------------------------|---|---------|-------|-------|-----------|------------------------|--------------------------|----------|
| 1                             | <b>Hardware</b>   | 400     | 400   | 600   | 1400      | 1                      | 0                        | 0        |
| <b>Order      Description</b> |   |         |       |       |           | <b>Learning Domain</b> | <b>Level of Learning</b> |          |
| 1                             | Identify hardware components and features including storage devices, motherboard components, power supplies, processors, cooling devices, memory, display devices, peripherals, adapter cards, laptop components and printer components |         |       |       |           | Cognitive              | Knowledge                |          |
| 2                             | Implement , install, configure, optimize and upgrade hardware components  |         |       |       |           | Psychomotor            | Mechanism                |          |
| 2                             | <b>Troubleshooting, Repair and Maintenance</b>  | 300     | 300   | 450   | 1050      | 1                      | 0                        | 0        |
| <b>Order      Description</b> |   |         |       |       |           | <b>Learning Domain</b> | <b>Level of Learning</b> |          |

|                           |                                       |   |                      |                      |                          |                      |                          |                      |
|---------------------------|---------------------------------------|---|----------------------|----------------------|--------------------------|----------------------|--------------------------|----------------------|
|                           | 1                                     | Explain and interpret common hardware and operating system troubleshooting scenarios and solutions        |                      |                      |                          |                      | Cognitive                | Knowledge            |
|                           | 2                                     | Perform preventive maintenance of hardware components and operating systems                               |                      |                      |                          |                      | Psychomotor              | Guided Response      |
| 3                         | <b>Operating Systems and Software</b> | 300   | 300                  | 450                  | 1050                     | 1                    | 0                        | 0                    |
|                           | Order                                 | Description   |                      |                      |                          |                      | Learning Domain          | Level of Learning    |
|                           | 1                                     | Compare and contrast different Windows operating systems and their features                               |                      |                      |                          |                      | Cognitive                | Analysis             |
|                           | 2                                     | Implement install, configure, optimize and upgrade operating systems                                      |                      |                      |                          |                      | Psychomotor              | Mechanism            |
|                           | 3                                     | Demonstrate proper use of user interfaces   |                      |                      |                          |                      | Cognitive                | Application          |
|                           | 4                                     | Explain the basics of boot sequences, methods and startup utilities                                       |                      |                      |                          |                      | Cognitive                | Knowledge            |
| 4                         | <b>Networking</b>                     | 190   | 215                  | 322                  | 727                      | 1                    | 0                        | 0                    |
|                           | Order                                 | Description   |                      |                      |                          |                      | Learning Domain          | Level of Learning    |
|                           | 1                                     | Identify the fundamental principles and components of networks and network related hardware               |                      |                      |                          |                      | Cognitive                | Knowledge            |
|                           | 2                                     | Compare and contrast the different network types, including both wired and wireless technologies          |                      |                      |                          |                      | Cognitive                | Analysis             |
|                           | 3                                     | Implement , install, configure, optimize and upgrade networks   |                      |                      |                          |                      | Psychomotor              | Mechanism            |
| 5                         | <b>Security</b>                       | 160   | 135                  | 203                  | 498                      | 0                    | 0                        | 0                    |
|                           | Order                                 | Description   |                      |                      |                          |                      | Learning Domain          | Level of Learning    |
|                           | 1                                     | Identify the fundamental principles of security concepts, technologies and features                       |                      |                      |                          |                      | Cognitive                | Knowledge            |
|                           | 2                                     | Implement , install, configure, upgrade and optimize security components                                  |                      |                      |                          |                      | Psychomotor              | Mechanism            |
|                           | 3                                     | Identify tools, diagnostic procedures and troubleshooting techniques for maintaining a secure environment |                      |                      |                          |                      | Cognitive                | Knowledge            |
| 6                         | <b>Operational Procedures</b>         | 150   | 150                  | 225                  | 525                      | 0                    | 0                        | 0                    |
|                           | Order                                 | Description   |                      |                      |                          |                      | Learning Domain          | Level of Learning    |
|                           | 1                                     | Describe the aspects and importance of safety and environmental procedures                                |                      |                      |                          |                      | Cognitive                | Comprehension        |
|                           | 2                                     | Demonstrate appropriate use of communication skills and professionalism in the workplace                  |                      |                      |                          |                      | Affective                | Valuing              |
| <b>Competency Totals:</b> |                                       | <b>Lecture</b><br>1500  | <b>Lab 2</b><br>1500 | <b>Lab 3</b><br>2250 | <b>Total Min</b><br>5250 | <b>Cred Hrs</b><br>4 | <b>Pract Intern</b><br>0 | <b>Clinical</b><br>0 |