**Review of Performance:** **VTE 260 Microwave** Spring 2017, (**12** students, **11** males **1** female)
**Submitted by:** Danilo S. Ibarrola

**Institutional Student Learning Outcomes (ISLO):**
**ILO1:** Effective oral communication.
**ILO2:** Effective written communication.
**ILO3:** Critical Thinking
**ILO4:** Problem Solving
**ILO5:** Inter-cultural knowledge and competence.
**ILO6:** Information literacy.
**IL07:** Foundations and skills for life-long learning.
**ILO8:** Quantitative reasoning.

**Program Learning Outcomes (PLO)**
**PLO1:** Practice Safety and occupational health procedures in the workplace.
**PLO2:** Use electronic tools and test equipment competently.
**PLO3:** Interpret schematic diagrams and waveforms.
**PLO4:** Build electronic projects to a given specification.
**PLO5**: Practice a career in the Telecom Industry.
**PLO6:** Troubleshoot microwave, fiber optics, radio communication and telephone system.

| SLO# | Program SLO# | I, D, M | ISLO | Reflection/Comment | |
|---|---|---|---|---|---|
| 1. Understand basic principles of microwave communication system. | Troubleshoot microwave, fiber optics, radio communication and telephone system. | M | 7 | **Course Result** | SLO was assessed by written test questions using the assessment criteria as stated in the course outline. Students were able to describe how microwave communication works. **12** (**11** male & **1** female**)** out of **12** students **(100%)** completed the CSLO. |
| | | | | **Target Met** | Yes |

<table>
<tr><td></td><td></td><td></td><td></td><td>Students need more time in hands-on and other practical procedure to reach mastery level performance.</td></tr>
<tr><td>2. Demonstrate understanding of microwave transmitter and receiver.</td><td>Troubleshoot microwave, fiber optics, radio communication and telephone system.</td><td>M</td><td>7</td><td><table><tr><td>Course Result</td><td>SLO was assessed using hands-on experiment and written test questions using the assessment criteria as stated in the course outline. Students were able to describe the operation of the microwave transmitter and receiver using the NIDA trainers. 12 (11 male & 1 female) out of 12 students (100%) completed the CSLO.</td></tr><tr><td>Target Met</td><td>Yes</td></tr></table><br>Students need more time in hands-on and other practical procedure to reach mastery level performance.</td></tr>
<tr><td>3. Identify waveguides with other methods of energy transfer.</td><td>Troubleshoot microwave, fiber optics, radio communication and telephone system.</td><td>M</td><td>7</td><td><table><tr><td>Course Result</td><td>SLO was assessed using hands-on experiment and written test questions using the assessment criteria as stated in the course outline. Students were able to compare different types of waveguides and explain its advantages and disadvantages. They were also able to assemble a sample waveguide made of cardboard paper. 12 (11 male & 1 female) out of 12 students (100%) completed the CSLO.</td></tr><tr><td>Target Met</td><td>Yes</td></tr></table><br>Students need more time in hands-on and other practical procedure to reach mastery level performance.</td></tr>
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<tr>
<td>4. Know transmission devices and medium in microwave communication system.</td>
<td>Troubleshoot microwave, fiber optics, radio communication and telephone system.</td>
<td>M</td>
<td>7</td>
<td>
<table>
<tr><td>Course Result</td><td>SLO was assessed using hands-on experiment and written test questions using the assessment criteria as stated in the course outline. Students were able to describe the different types of antenna system and explain the functions of its parts in microwave communication. 12 (11 male & 1 female) out of 12 students (100%) completed the CSLO.</td></tr>
<tr><td>Target Met</td><td>Yes</td></tr>
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Students need more time in hands-on and other practical procedure to reach mastery level performance.
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<tr>
<td>5. Recognize the tube and semiconductor microwave devices.</td>
<td>Troubleshoot microwave, fiber optics, radio communication and telephone system.</td>
<td>M</td>
<td>7</td>
<td>
<table>
<tr><td>Course Result</td><td>SLO was assessed by written test questions using the assessment criteria as stated in the course outline. Students were able differentiate vacuum tubes and semiconductor devices used in microwave communication. 12 (11 male & 1 female) out of 12 students (100%) completed the CSLO.</td></tr>
<tr><td>Target Met</td><td>Yes</td></tr>
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Students need more time in hands-on and other practical procedure to reach mastery level performance.
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<tr>
<td>6. Troubleshoot microwave transmitter and receiver system.</td>
<td>Troubleshoot microwave, fiber optics, radio communication and telephone system.</td>
<td>M</td>
<td>7</td>
<td>
<table>
<tr><td>Course Result</td><td>SLO was assessed using hands-on experiment and written test questions using the assessment criteria as stated in the course outline. Students were able to identify and localize fault in microwave transmitter and receiver. 12 (11 male</td></tr>
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| | | | | | |
|---|---|---|---|---|---|
| | | | | | & **1** female**)** out of **12** students **(100%)** completed the CSLO. |
| | | | | **Target Met** | Yes |
| | | | | Students need more time in hands-on and other practical procedure to reach mastery level performance. | |

**Special comments: 12** out of **12 (11** male **1** female) or **100%** of the students got a grade of C and higher.

**Summary of Grades:**

| | | |
|---|---|---|
| **A+** | **=** | **0** |
| **A** | **=** | **0** |
| **A-** | **=** | **0** |
| **B+** | **=** | **5** |
| **B** | **=** | **6** |
| **B-** | **=** | **1** |
| **C+** | **=** | **0** |
| **C** | **=** | **0** |
| **C-** | **=** | **0** |
| **D+** | **=** | **0** |
| **D** | **=** | **0** |
| **D-** | **=** | **0** |
| **F** | **=** | **0** |

**Recommendations:** Additional microwave communication equipment must be purchase so that more hands on experiments can be done and students are more interested when taught with actual devices shown to them instead of pictures or mock-up. Annual visit to telecommunications partners is necessary for the students to fully understand the actual devices functions, connections and actual operations in the field.

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Instructor

**Date:** May 5, 2017