

Review of Performance: VEE 240 Signal Processing, Spring 2015, 14 students)
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:** Intercultural knowledge and competence.
- ILO6:** Information literacy.
- ILO7:** 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 Telecomm Industry.
- PLO6:** Troubleshoot microwave, fiber optics and telephone system.

| SLO# | Program SLO# | I, D, M | ISLO | Reflection/Comment |
|--|--|---------|------|---|
| 1. Describe analog pulse modulation circuit operation. | 3. Interpret schematic diagrams and waveforms. | D | 7 | <p>The SLO was assessed using hands-on troubleshooting and written test.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p> |

| | | | | <table border="1"> <thead> <tr> <th>Letter Grade</th> <th>Number of student</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>0</td> </tr> <tr> <td>B</td> <td>4</td> </tr> <tr> <td>C</td> <td>6</td> </tr> <tr> <td>D</td> <td>4</td> </tr> </tbody> </table> | Letter Grade | Number of student | A | 0 | B | 4 | C | 6 | D | 4 | | |
|--|--|---|---|--|--------------|-------------------|---|---|---|---|---|---|---|---|---|---|
| Letter Grade | Number of student | | | | | | | | | | | | | | | |
| A | 0 | | | | | | | | | | | | | | | |
| B | 4 | | | | | | | | | | | | | | | |
| C | 6 | | | | | | | | | | | | | | | |
| D | 4 | | | | | | | | | | | | | | | |
| 2. Describe Pulse coded modulation (PCM) circuit, operation and troubleshooting PCM circuit. | 3. Interpret schematic diagrams and waveforms. | D | 7 | <p>The SLO was assessed using hands-on troubleshooting and written test.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p> <table border="1"> <thead> <tr> <th>Letter Grade</th> <th>Number of student</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>0</td> </tr> <tr> <td>B</td> <td>0</td> </tr> <tr> <td>C</td> <td>7</td> </tr> <tr> <td>D</td> <td>4</td> </tr> <tr> <td>F</td> <td>3</td> </tr> </tbody> </table> | Letter Grade | Number of student | A | 0 | B | 0 | C | 7 | D | 4 | F | 3 |
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| B | 0 | | | | | | | | | | | | | | | |
| C | 7 | | | | | | | | | | | | | | | |
| D | 4 | | | | | | | | | | | | | | | |
| F | 3 | | | | | | | | | | | | | | | |
| 3. Describe Delta modulation (DM) circuit, operation and troubleshoot DM circuit. | 3. Interpret schematic diagrams and waveforms. | M | 7 | <p>The SLO was assessed using hands-on troubleshooting and written test.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p> <table border="1"> <thead> <tr> <th>Letter Grade</th> <th>Number of student</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>0</td> </tr> <tr> <td>B</td> <td>0</td> </tr> <tr> <td>C</td> <td>8</td> </tr> <tr> <td>D</td> <td>3</td> </tr> <tr> <td>F</td> <td>3</td> </tr> </tbody> </table> | Letter Grade | Number of student | A | 0 | B | 0 | C | 8 | D | 3 | F | 3 |
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| B | 0 | | | | | | | | | | | | | | | |
| C | 8 | | | | | | | | | | | | | | | |
| D | 3 | | | | | | | | | | | | | | | |
| F | 3 | | | | | | | | | | | | | | | |
| 4. Describe FSK (Frequency shift keying) circuit, | 3. Interpret schematic diagrams and | M | 7 | <p>The SLO was assessed using hands-on troubleshooting and written test.</p> <p>Students need more time in hands-on and other practical procedure to reach</p> | | | | | | | | | | | | |

| operation and troubleshoot FSK circuit. | waveforms. | | | mastery level performance. <table border="1" data-bbox="934 345 1915 570"> <thead> <tr> <th>Letter Grade</th> <th>Number of student</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>0</td> </tr> <tr> <td>B</td> <td>0</td> </tr> <tr> <td>C</td> <td>7</td> </tr> <tr> <td>D</td> <td>4</td> </tr> <tr> <td>F</td> <td>3</td> </tr> </tbody> </table> | Letter Grade | Number of student | A | 0 | B | 0 | C | 7 | D | 4 | F | 3 |
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| D | 4 | | | | | | | | | | | | | | | |
| F | 3 | | | | | | | | | | | | | | | |
| 5. Describe Phase shift Keying (PSK) circuit, operation and troubleshoot PSK circuit. | 3. Interpret schematic diagrams and waveforms. | M | 7 | The SLO was assessed using hands-on troubleshooting and written test. Students need more time in hands-on and other practical procedure to reach mastery level performance. <table border="1" data-bbox="934 748 1915 935"> <thead> <tr> <th>Letter Grade</th> <th>Number of student</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>0</td> </tr> <tr> <td>B</td> <td>4</td> </tr> <tr> <td>C</td> <td>7</td> </tr> <tr> <td>F</td> <td>3</td> </tr> </tbody> </table> | Letter Grade | Number of student | A | 0 | B | 4 | C | 7 | F | 3 | | |
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| F | 3 | | | | | | | | | | | | | | | |
| 6. Describe and analyze Time and Frequency division multiplexing circuit operation and troubleshooting. | 3. Interpret schematic diagrams and waveforms. | M | 7 | The SLO was assess using hands-on troubleshooting and written test. Students need more time in hands-on and other practical procedure to reach mastery level performance. <table border="1" data-bbox="934 1114 1915 1299"> <thead> <tr> <th>Letter Grade</th> <th>Number of student</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>0</td> </tr> <tr> <td>B</td> <td>3</td> </tr> <tr> <td>C</td> <td>7</td> </tr> <tr> <td>F</td> <td>4</td> </tr> </tbody> </table> | Letter Grade | Number of student | A | 0 | B | 3 | C | 7 | F | 4 | | |
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| F | 4 | | | | | | | | | | | | | | | |

Additional observations: Need to purchase additional set of NIDA cards to accommodate growing number of students enrolled in the course.

Special comments: 10 out of 14 or 71% of the students got a grade of C and 4 got F.

Recommendations: Need to increase the practice time of students for hands-on activity and buy additional NIDA cards for Signal Processing.

Signature: DANILO S. IBARROLA
 Instructor

Date: MAY 8, 2015