Review of Performance: (**VEE 240 Signal Processing**, Spring 2016, 6 students)
Submitted by: Nelchor Permitez Ed. D.

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.
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 Telecomm Industry.
PLO6: Troubleshoot microwave, fiber optics and telephone system.

<table>
<tr><th>SLO#</th><th>Program SLO#</th><th>I, D, M</th><th>ISLO</th><th>Reflection/Comment</th></tr>
<tr><td>1. Describe analog pulse modulation circuit operation.</td><td>Interpret schematic diagrams and waveforms.</td><td>D</td><td>7</td><td>The SLO was assess using written test (quiz) and hands-on troubleshooting

<table><tr><td>Number of students</td><td>Score</td><td>Comment</td></tr><tr><td>6</td><td>70 or better</td><td>Passed</td></tr><tr><td>0</td><td>69 or lower</td><td>Failed</td></tr></table>
Observation: Students were able to describe analog pulse modulation circuit operation in theory and in hands-on. However they find it difficult using</td></tr>
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<table>
<tr><td></td><td></td><td></td><td></td><td>oscilloscope, signal generators, frequency counter and digital tester.</td></tr>
<tr><td>2. Describe Pulse coded modulation (PCM) circuit, operation and troubleshooting PCM circuit.</td><td>Interpret schematic diagrams and waveforms.</td><td>D</td><td>7</td><td>The SLO was assess using written test (quiz) and hands-on troubleshooting

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Observation: Students were able to describe Pulse coded modulation (PCM) circuit, operation and troubleshooting PCM circuit. However they find it difficult using oscilloscope, signal generators, frequency counter and digital tester.</td></tr>
<tr><td>3. Describe Delta modulation (DM) circuit, operation ar troubleshoot DM circuit.</td><td>Interpret schematic diagrams and waveforms.</td><td>M</td><td>7</td><td>The SLO was assess using written test (quiz) and hands-on troubleshooting

<table><tr><td>Number of students</td><td>Score</td><td>Comment</td></tr><tr><td>4</td><td>70 or better</td><td>Passed</td></tr><tr><td>2</td><td>69 or lower</td><td>Failed</td></tr></table>
Observation: Students were able to describe Delta modulation (DM) circuit, operation and troubleshoot DM circuit. However they find it difficult using oscilloscope, signal generators, frequency counter and digital tester. 2 students got a failing grade due to absenteeism.</td></tr>
<tr><td>4: Describe FSK (Frequency shift keying) circuit, operation and</td><td>Interpret schematic diagrams and waveforms.</td><td>M</td><td>7</td><td>The SLO was assess using written test (quiz) and hands-on troubleshooting

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<td>troubleshoot FSK circuit</td>
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<td></td>
<td></td>
<td>
<table>
<tr><td>2</td><td>69 or lower</td><td>Failed</td></tr>
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Observation: Students were able to describe FSK (Frequency shift keying) circuit, operation and troubleshoot FSK circuit.
However they find it difficult using oscilloscope, signal generators, frequency counter and digital tester. 2 students got a failing grade due to absenteeism.
</td>
</tr>
<tr>
<td>5. Describe Phase shift Keying (PSK) circuit, operation and troubleshoot PSK circuit.</td>
<td>Interpret schematic diagrams and waveforms.</td>
<td>M</td>
<td>7</td>
<td>The SLO was assess using written test (quiz) and hands-on troubleshooting
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Observation: Students were able to describe Phase shift Keying (PSK) circuit, operation and troubleshoot PSK circuit. However they find it difficult using oscilloscope, signal generators, frequency counter and digital tester. 2 students got a failing grade due to absenteeism.
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<td>6. Describe and analyze Time and Frequency division multiplexing circuit operation and troubleshooting.</td>
<td>Interpret schematic diagrams and waveforms.</td>
<td>M</td>
<td>7</td>
<td>The SLO was assess using written test (quiz) and hands-on troubleshooting
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Observation: Students were able to describe and analyze Time and Frequency division multiplexing circuit operation and troubleshooting. 2 students got a failing grade due to absenteeism.
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Additional observations: Need to purchase additional set of NIDA cards to accommodate growing number of students enrolled in the course.

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

Signature: NELCHOR T. PERMITEZ
Professor

Date: May 9, 2016