

Review of Performance: (VTE 280 Telephone System, Fall 2012, 6 students)

Submitted by: Nelchor Permitez Ed. D.

Institutional Learning Outcomes (ILO):

ILO1: communicate effectively

ILO2: employ critical thinking [*& problem solving*]

ILO3: possess specific knowledge and skills in a major discipline or professional program of study

ILO4: take responsibility and develop skills for learning

ILO5: interact responsibly with people, cultures, and their environment

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	ILO	Reflection/Comment
1. Describe the major sections of the basic elements in a telephone system.	Troubleshoot radio communication , microwave, fiber optic and telephone systems.	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical activities.</p>

				<table border="1"> <thead> <tr> <th>Letter Grade</th> <th>Number of student</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>2</td> </tr> <tr> <td>B</td> <td>4</td> </tr> <tr> <td>C</td> <td>0</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	2	B	4	C	0
Letter Grade	Number of student											
A	2											
B	4											
C	0											
2. Describe the telephone system used in the U.S. and the F.S.M.	Troubleshoot radio communication , microwave, fiber optic and telephone systems.	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical activities.</p> <table border="1"> <thead> <tr> <th>Letter Grade</th> <th>Number of student</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>1</td> </tr> <tr> <td>B</td> <td>4</td> </tr> <tr> <td>C</td> <td>1</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	1	B	4	C	1
Letter Grade	Number of student											
A	1											
B	4											
C	1											

<p>3. Describe and troubleshoot the operations of the mechanical and electronic telephone sets.</p>	<p>Troubleshoot radio communication , microwave, fiber optic and telephone systems.</p>	<p>M</p>	<p>2,3,4</p>	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p> <table border="1" data-bbox="1087 760 2041 1036"> <thead> <tr> <th data-bbox="1087 760 1564 831">Letter Grade</th> <th data-bbox="1564 760 2041 831">Number of student</th> </tr> </thead> <tbody> <tr> <td data-bbox="1087 831 1564 902">A</td> <td data-bbox="1564 831 2041 902">2</td> </tr> <tr> <td data-bbox="1087 902 1564 974">B</td> <td data-bbox="1564 902 2041 974">3</td> </tr> <tr> <td data-bbox="1087 974 1564 1036">C</td> <td data-bbox="1564 974 2041 1036">1</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	2	B	3	C	1
Letter Grade	Number of student											
A	2											
B	3											
C	1											
<p>4. Describe and demonstrate two methods of signal processing and two types of connection links that are</p>	<p>Troubleshoot radio communication , microwave, fiber optic and telephone systems.</p>	<p>M</p>	<p>2,3,4</p>	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p>								

commonly used today's telecommunications, or telephone systems.

Students need more time in hands-on and other practical activities.

Letter Grade	Number of student
A	2
B	4
C	0

<p>5. Describe cellular telephone from a theoretical and hardware perspective.</p>	<p>Troubleshoot radio communication , microwave, fiber optic and telephone systems.</p>	<p>M</p>	<p>2,3,4</p>	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical activities.</p> <table border="1" data-bbox="1087 639 2039 914"> <thead> <tr> <th data-bbox="1087 639 1564 708">Letter Grade</th> <th data-bbox="1570 639 2039 708">Number of student</th> </tr> </thead> <tbody> <tr> <td data-bbox="1087 712 1564 776">A</td> <td data-bbox="1570 712 2039 776">2</td> </tr> <tr> <td data-bbox="1087 781 1564 844">B</td> <td data-bbox="1570 781 2039 844">4</td> </tr> <tr> <td data-bbox="1087 849 1564 912">C</td> <td data-bbox="1570 849 2039 912">0</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	2	B	4	C	0
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A	2											
B	4											
C	0											

Additional observations: Needs more trainer NIDA trainer card for telephone system and need Telecommunication trainer model TCM-200 which cost \$220 and lab manual / workbook \$34.95 to enhance the knowledge and skills of the students to the current trends of telecommunication.

Special comments: There were 2 students got A and 4 got B.

Recommendations: Modify the course outline and include the TCM-200 telecommunication trainer activities in the student learning outcome. Also need additional 2 phone simulator tone generator equipment to facilitate cord and cordless phone bench troubleshooting

Signature: _____

Date: _____

Name typed, position

Review of Performance: (**VEE 100 Soldering and Mechanical Termination Techniques**, Fall 2012, 28 students)

Submitted by: Nelchor Permitez Ed. D.

Institutional Learning Outcomes (ILO):

ILO1: communicate effectively

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Program Learning Outcomes (PLO)

PLO1: Practice Safety and occupational health procedures in the workplace.

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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	ILO	Reflection/Comment			
1. Identify and perform the techniques for printed circuit track and pad repair as well as component insertion and extraction	Practice safety and occupational health procedures in the workplace	D	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p> <table border="1" data-bbox="1276 1307 1911 1346"> <tr> <td data-bbox="1276 1307 1585 1346">Letter Grade</td> <td data-bbox="1585 1307 1911 1346">Number of student</td> </tr> </table>		Letter Grade	Number of student
Letter Grade	Number of student						

				<table border="1"> <tr> <td>A</td> <td>7</td> </tr> <tr> <td>B</td> <td>12</td> </tr> <tr> <td>C</td> <td>9</td> </tr> </table>	A	7	B	12	C	9				
A	7													
B	12													
C	9													
2. Select the correct connection type and create reliable solder joints using basic hand soldering techniques	Use electronics tool and test equipment competently	D	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</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>6</td> </tr> <tr> <td>B</td> <td>14</td> </tr> <tr> <td>C</td> <td>7</td> </tr> <tr> <td>D</td> <td>1</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	6	B	14	C	7	D	1
Letter Grade	Number of student													
A	6													
B	14													
C	7													
D	1													
3. Demonstrate the correct method of terminating basic connector.	Use electronics tool and test equipment competently	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical procedure.</p> <table border="1"> <thead> <tr> <th>Letter Grade</th> <th>Number of student</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>7</td> </tr> <tr> <td>B</td> <td>12</td> </tr> <tr> <td>C</td> <td>8</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	7	B	12	C	8		
Letter Grade	Number of student													
A	7													
B	12													
C	8													

				F	1									
4. Describe characteristics of and procedures for making good wire wrap connection.	Use electronics tool and test equipment competently	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</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>8</td> </tr> <tr> <td>B</td> <td>12</td> </tr> <tr> <td>C</td> <td>7</td> </tr> <tr> <td>F</td> <td>1</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	8	B	12	C	7	F	1
Letter Grade	Number of student													
A	8													
B	12													
C	7													
F	1													
5. Test basic wiring and connector.	Use electronics tool and test equipment competently	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</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></td> <td></td> </tr> </tbody> </table>	Letter Grade	Number of student								
Letter Grade	Number of student													

				A	7
				B	12
				C	8
				F	1

Additional observations

Students need more time in project making the time is not sufficient to meet the highest competency level.

Special comments: Seven (7) students got A, twelve (12) students got B, eight 8 students got C and one (1) student got F. The student who got F fail to comply the requirements of the course due to absenteeism.

Recommendations: : Ball grid array (BGA) soldering, Infra red (IR) soldering and hot air soldering method must be included in the course to meet the fast changing technology in soldering process. Introduce power supply kit assembly on top of the telephone kit. Need to purchase new equipment such as hot air solder station and infrared soldering station and kits to improve the soldering skills of the students.

The solder kit cost should be bought and shoulder by individual students. Likewise it should be bought early to avoid delay as scheduled.

Signature: _____
Name typed, position

Date: _____

Review of Performance: (VEE 135 Digital 1, Fall 2012, 14 students)

Submitted by: Nelchor Permitez Ed. D.

Institutional Learning Outcomes (ILO):

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SLO#	Program SLO#	I, D, M	ILO	Reflection/Comment						
1. Identify and describe the history and development of digital electronics.	Use electronic tools and test equipment competently.	D	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p> <table border="1" data-bbox="1050 1234 1995 1347"> <thead> <tr> <th>Letter Grade</th> <th>Number of student</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>1</td> </tr> <tr> <td>B</td> <td>11</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	1	B	11
Letter Grade	Number of student									
A	1									
B	11									

				<table border="1"> <tr> <td>C</td> <td>2</td> </tr> </table>	C	2						
C	2											
2. Describe digital electronics hardware.	Use electronic tools and test equipment competently	D	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</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>3</td> </tr> <tr> <td>B</td> <td>4</td> </tr> <tr> <td>C</td> <td>7</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	3	B	4	C	7
Letter Grade	Number of student											
A	3											
B	4											
C	7											
3. Describe the basic operating principles of buffers and inverters.	Use electronic tools and test equipment competently	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</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>2</td> </tr> <tr> <td>B</td> <td>9</td> </tr> <tr> <td>C</td> <td>3</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	2	B	9	C	3
Letter Grade	Number of student											
A	2											
B	9											
C	3											
4. Describe various	Use electronic	M	2,3,4									

digital test equipment and their operating characteristics.	tools and test equipment competently			<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p> <table border="1" data-bbox="1052 496 2007 651"> <thead> <tr> <th>Letter Grade</th> <th>Number of student</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>2</td> </tr> <tr> <td>B</td> <td>1</td> </tr> <tr> <td>C</td> <td>11</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	2	B	1	C	11
Letter Grade	Number of student											
A	2											
B	1											
C	11											
5. Explain the purpose and the operation for the 555 Timer.	Use electronic tools and test equipment competently	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p> <table border="1" data-bbox="1052 1016 2007 1170"> <thead> <tr> <th>Letter Grade</th> <th>Number of student</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>1</td> </tr> <tr> <td>B</td> <td>4</td> </tr> <tr> <td>C</td> <td>9</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	1	B	4	C	9
Letter Grade	Number of student											
A	1											
B	4											
C	9											
6. Describe the purpose, construction, and operation of various integrated circuits.	Use electronic tools and test equipment competently.	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical procedure to</p>								

				<p>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>3</td> </tr> <tr> <td>B</td> <td>6</td> </tr> <tr> <td>C</td> <td>5</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	3	B	6	C	5
Letter Grade	Number of student											
A	3											
B	6											
C	5											
7. Identify and describe the AND gate operation. Measure input to output waveforms.	Use electronic tools and test equipment competently.	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</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>1</td> </tr> <tr> <td>B</td> <td>3</td> </tr> <tr> <td>C</td> <td>10</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	1	B	3	C	10
Letter Grade	Number of student											
A	1											
B	3											
C	10											
8. Identify and describe the OR gate operation. Measure input to output waveforms.	Use electronic tools and test equipment competently.	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</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>5</td> </tr> <tr> <td>B</td> <td>7</td> </tr> <tr> <td>C</td> <td>2</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	5	B	7	C	2
Letter Grade	Number of student											
A	5											
B	7											
C	2											
9. Identify and describe	Use electronic	M	2,3,4	The SLO was assess using hands-on troubleshooting and written quiz and								

<p>the NOT gate operation. Measure input to output waveforms.</p>	<p>tools and test equipment competently.</p>			<p>examination.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p> <table border="1" data-bbox="1052 461 2007 610"> <thead> <tr> <th>Letter Grade</th> <th>Number of student</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>4</td> </tr> <tr> <td>B</td> <td>8</td> </tr> <tr> <td>C</td> <td>2</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	4	B	8	C	2
Letter Grade	Number of student											
A	4											
B	8											
C	2											
<p>10. Identify and describe the NAND gate operation. Measure input to output waveforms.</p>	<p>Use electronic tools and test equipment competently.</p>	<p>M</p>		<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p> <table border="1" data-bbox="1052 870 2007 1021"> <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>1</td> </tr> <tr> <td>C</td> <td>13</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	0	B	1	C	13
Letter Grade	Number of student											
A	0											
B	1											
C	13											
<p>11. Identify and describe the NOR gate operation. Measure input to output waveforms.</p>	<p>Use electronic tools and test equipment competently.</p>	<p>M</p>	<p>2,3,4</p>	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p> <table border="1" data-bbox="1052 1281 2007 1356"> <thead> <tr> <th>Letter Grade</th> <th>Number of student</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>2</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	2				
Letter Grade	Number of student											
A	2											

				<table border="1"> <tr> <td>B</td> <td>2</td> </tr> <tr> <td>C</td> <td>10</td> </tr> </table>	B	2	C	10				
B	2											
C	10											
12. Identify and describe the XOR gate operation. Measure input to output waveforms.	Use electronic tools and test equipment competently.	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</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>1</td> </tr> <tr> <td>B</td> <td>4</td> </tr> <tr> <td>C</td> <td>9</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	1	B	4	C	9
Letter Grade	Number of student											
A	1											
B	4											
C	9											
13. Describe the purpose and operation of various combinational circuits.	Use electronic tools and test equipment competently.	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</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>3</td> </tr> <tr> <td>C</td> <td>11</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	0	B	3	C	11
Letter Grade	Number of student											
A	0											
B	3											
C	11											
14. Describe the different types of logic families and their operating characteristics.	Use electronic tools and test equipment competently.	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p>								

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Letter Grade	Number of student											
A	0											
B	3											
C	11											
15. Describe the number systems used in digital electronics. Perform mathematical calculations and conversions using digital mathematics.	Use electronic tools and test equipment competently.	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</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>2</td> </tr> <tr> <td>C</td> <td>12</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	0	B	2	C	12
Letter Grade	Number of student											
A	0											
B	2											
C	12											
16. Describe how a decimal encoder performs base 10 to binary conversion.	Use electronic tools and test equipment competently.	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</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>1</td> </tr> <tr> <td>C</td> <td>13</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	0	B	1	C	13
Letter Grade	Number of student											
A	0											
B	1											
C	13											
17. Describe how a binary decoder performs binary to 7	Use electronic tools and test equipment	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p>								

segment conversions.	competently.			<p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p> <table border="1" data-bbox="1052 386 2007 537"> <thead> <tr> <th data-bbox="1052 386 1528 423">Letter Grade</th> <th data-bbox="1530 386 2007 423">Number of student</th> </tr> </thead> <tbody> <tr> <td data-bbox="1052 425 1528 462">A</td> <td data-bbox="1530 425 2007 462">0</td> </tr> <tr> <td data-bbox="1052 464 1528 501">B</td> <td data-bbox="1530 464 2007 501">3</td> </tr> <tr> <td data-bbox="1052 503 1528 537">C</td> <td data-bbox="1530 503 2007 537">11</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	0	B	3	C	11
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B	3											
C	11											
18. Identify and describe the operation of a 4-bit comparator.	Use electronic tools and test equipment competently.	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p> <table border="1" data-bbox="1052 797 2007 948"> <thead> <tr> <th data-bbox="1052 797 1528 834">Letter Grade</th> <th data-bbox="1530 797 2007 834">Number of student</th> </tr> </thead> <tbody> <tr> <td data-bbox="1052 836 1528 873">A</td> <td data-bbox="1530 836 2007 873">0</td> </tr> <tr> <td data-bbox="1052 875 1528 912">B</td> <td data-bbox="1530 875 2007 912">4</td> </tr> <tr> <td data-bbox="1052 914 1528 948">C</td> <td data-bbox="1530 914 2007 948">10</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	0	B	4	C	10
Letter Grade	Number of student											
A	0											
B	4											
C	10											
19.Explain the basic operating principles of a flip-flop circuit.	Use electronic tools and test equipment competently.	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p> <table border="1" data-bbox="1052 1208 2007 1357"> <thead> <tr> <th data-bbox="1052 1208 1528 1245">Letter Grade</th> <th data-bbox="1530 1208 2007 1245">Number of student</th> </tr> </thead> <tbody> <tr> <td data-bbox="1052 1247 1528 1284">A</td> <td data-bbox="1530 1247 2007 1284">0</td> </tr> <tr> <td data-bbox="1052 1286 1528 1323">B</td> <td data-bbox="1530 1286 2007 1323">6</td> </tr> <tr> <td data-bbox="1052 1325 1528 1357">C</td> <td data-bbox="1530 1325 2007 1357">8</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	0	B	6	C	8
Letter Grade	Number of student											
A	0											
B	6											
C	8											

20. Identify and describe the purpose and the operation of an RS flip-flop circuit.	Use electronic tools and test equipment competently.	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p> <table border="1" data-bbox="1052 496 2003 646"> <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>5</td> </tr> <tr> <td>C</td> <td>9</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	0	B	5	C	9
Letter Grade	Number of student											
A	0											
B	5											
C	9											
21. Identify and describe the purpose and the operation of a Clocked RS flip-flop circuit.	Use electronic tools and test equipment competently.	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p> <table border="1" data-bbox="1052 907 2003 1057"> <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>11</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	0	B	3	C	11
Letter Grade	Number of student											
A	0											
B	3											
C	11											
22. Identify and describe the purpose and the operation of a D-type flip-flop circuit.	Use electronic tools and test equipment competently.	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p> <table border="1" data-bbox="1052 1317 2003 1351"> <thead> <tr> <th>Letter Grade</th> <th>Number of student</th> </tr> </thead> <tbody> </tbody> </table>	Letter Grade	Number of student						
Letter Grade	Number of student											

				A	1								
				B	7								
				C	6								
23. Identify and describe the purpose and the operation of a JK flip-flop circuit.	Use electronic tools and test equipment competently.	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</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>8</td> </tr> <tr> <td>C</td> <td>6</td> </tr> </tbody> </table>		Letter Grade	Number of student	A	0	B	8	C	6
Letter Grade	Number of student												
A	0												
B	8												
C	6												
24. Identify and describe the purpose and the operation of a Master Slave flip-flop circuit.	Use electronic tools and test equipment competently.	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</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>10</td> </tr> </tbody> </table>		Letter Grade	Number of student	A	0	B	4	C	10
Letter Grade	Number of student												
A	0												
B	4												
C	10												

Additional observations: Needs 1 set of cards for digital NIDA cards set to accommodate growing number of students.

Special comments: 2 students got B, 12 got C and 1 got F for absenteeism.

Recommendations: Need to buy one more set of NIDA digital electronics card to handle more students during the hands on activity and thus improve the instruction of 1 trainer is to 3 students ratio.

Signature: _____
Name typed, position

Date: _____

Review of Performance: (VEE 235 Digital 2, Fall 2011, 12 students)
 Submitted by: Nelchor Permitez Ed. D.

Institutional Learning Outcomes (ILO):

- ILO1: communicate effectively
- ILO2: employ critical thinking [*& problem solving*]
- ILO3: possess specific knowledge and skills in a major discipline or professional program of study
- ILO4: take responsibility and develop skills for learning
- ILO5: interact responsibly with people, cultures, and their environment

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	ILO	Reflection/Comment				
1. Describe the basic operating principles of registers and memory circuits.	Interpret schematics diagrams and waveforms.	D	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p> <table border="1" style="width: 100%; margin-top: 10px;"> <tr> <td style="text-align: center;">Letter Grade</td> <td style="text-align: center;">Number of student</td> </tr> <tr> <td style="text-align: center;">A</td> <td style="text-align: center;">2</td> </tr> </table>	Letter Grade	Number of student	A	2
Letter Grade	Number of student							
A	2							

				<table border="1"> <tr> <td>B</td> <td>10</td> </tr> <tr> <td>C</td> <td>0</td> </tr> </table>	B	10	C	0				
B	10											
C	0											
2. Identify the purpose and probe the input and output of a 4 bit storage register.	Interpret schematics diagrams and waveforms.	D	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</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>2</td> </tr> <tr> <td>B</td> <td>11</td> </tr> <tr> <td>C</td> <td>0</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	2	B	11	C	0
Letter Grade	Number of student											
A	2											
B	11											
C	0											
3. Identify and describe the function and probe the input and output of a 4 bit shift register.	Interpret schematics diagrams and waveforms.	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</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>3</td> </tr> <tr> <td>B</td> <td>9</td> </tr> <tr> <td>C</td> <td>0</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	3	B	9	C	0
Letter Grade	Number of student											
A	3											
B	9											
C	0											

<p>4: Identify and describe the function and probe the input and output of an 8 bit shift register.</p>	<p>Interpret schematics diagrams and waveforms.</p>	<p>M</p>	<p>2,3,4</p>	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p> <table border="1" data-bbox="1041 532 2024 688"> <thead> <tr> <th>Letter Grade</th> <th>Number of student</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>2</td> </tr> <tr> <td>B</td> <td>10</td> </tr> <tr> <td>C</td> <td>0</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	2	B	10	C	0
Letter Grade	Number of student											
A	2											
B	10											
C	0											
<p>5. Describe the normal operation and the characteristics of a 64 bit memory circuit</p>	<p>Interpret schematics diagrams and waveforms.</p>	<p>M</p>	<p>2,3,4</p>	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p> <table border="1" data-bbox="1041 1058 2024 1214"> <thead> <tr> <th>Letter Grade</th> <th>Number of student</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>2</td> </tr> <tr> <td>B</td> <td>10</td> </tr> <tr> <td>C</td> <td>0</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	2	B	10	C	0
Letter Grade	Number of student											
A	2											
B	10											
C	0											
<p>6. Describe how counting circuit perform arithmetic functions.</p>	<p>Interpret schematics diagrams and waveforms.</p>	<p>M</p>	<p>2,3,4</p>	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</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>2</td> </tr> <tr> <td>B</td> <td>10</td> </tr> <tr> <td>C</td> <td>0</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	2	B	10	C	0
Letter Grade	Number of student											
A	2											
B	10											
C	0											
7. Recognize the normal operation of a ripple counter circuit.	Interpret schematics diagrams and waveforms.	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</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>2</td> </tr> <tr> <td>B</td> <td>10</td> </tr> <tr> <td>C</td> <td>0</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	2	B	10	C	0
Letter Grade	Number of student											
A	2											
B	10											
C	0											
8. Describe the purpose of an up counter circuit.	Interpret schematics diagrams and waveforms.	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</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>3</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	3				
Letter Grade	Number of student											
A	3											

				<table border="1"> <tr> <td>B</td> <td>9</td> </tr> <tr> <td>C</td> <td>0</td> </tr> </table>	B	9	C	0				
B	9											
C	0											
9. describe the purpose of a down counter circuit.	Interpret schematics diagrams and waveforms.	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</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>2</td> </tr> <tr> <td>B</td> <td>10</td> </tr> <tr> <td>C</td> <td>0</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	2	B	10	C	0
Letter Grade	Number of student											
A	2											
B	10											
C	0											
10. Describe the function and the operating characteristic of a 4 bit adder.	Interpret schematics diagrams and waveforms.	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</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>1</td> </tr> <tr> <td>B</td> <td>9</td> </tr> <tr> <td>C</td> <td>2</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	1	B	9	C	2
Letter Grade	Number of student											
A	1											
B	9											
C	2											
11. Describe the normal operation of 4 bit subtractor	Interpret schematics	M	2,3,4	The SLO was assess using hands-on troubleshooting and written quiz and								

	diagrams and waveforms.			<p>examination.</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>2</td> </tr> <tr> <td>B</td> <td>10</td> </tr> <tr> <td>C</td> <td>0</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	2	B	10	C	0
Letter Grade	Number of student											
A	2											
B	10											
C	0											
12. Explain the basic principles of conversion at data circuits.	Interpret schematics diagrams and waveforms.	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</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>2</td> </tr> <tr> <td>B</td> <td>10</td> </tr> <tr> <td>C</td> <td>0</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	2	B	10	C	0
Letter Grade	Number of student											
A	2											
B	10											
C	0											
13. Identify the purpose of D/A conversion circuit and its operating characteristic	Interpret schematics diagrams and waveforms.	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p>								

				Letter Grade	Number of student								
				A	2								
				B	8								
				C	0								
14. Identify the purpose and describe the basic operation of a data selector circuit and measure its output signals.	Interpret schematics diagrams and waveforms.	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</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>2</td> </tr> <tr> <td>B</td> <td>2</td> </tr> <tr> <td>C</td> <td>8</td> </tr> </tbody> </table>		Letter Grade	Number of student	A	2	B	2	C	8
Letter Grade	Number of student												
A	2												
B	2												
C	8												
15. Describe the function of a data distribution circuit and its operating characteristics and measure its output signals.	Interpret schematics diagrams and waveforms.	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</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>2</td> </tr> <tr> <td>B</td> <td>10</td> </tr> <tr> <td>C</td> <td>0</td> </tr> </tbody> </table>		Letter Grade	Number of student	A	2	B	10	C	0
Letter Grade	Number of student												
A	2												
B	10												
C	0												

Additional observations: Needs more NIDA cards for digital set to accommodate growing number of students in electronics and telecommunication program..

Special comments: 10 students got grades of B and 2 student got A.

Recommendations: Modify the course outline and increase number of time for hands-on.

Signature: _____
Name typed, position

Date: _____

Review of Performance: (VEE 230 Radio communication, Fall 2012, 7 students)

Submitted by: Nelchor Permitez Ed. D.

Institutional Learning Outcomes (ILO):

ILO1: communicate effectively

ILO2: employ critical thinking [*& problem solving*]

ILO3: possess specific knowledge and skills in a major discipline or professional program of study

ILO4: take responsibility and develop skills for learning

ILO5: interact responsibly with people, cultures, and their environment

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	ILO	Reflection/Comment								
1. Describe the basic communications system, various signal processing techniques and the safety precautions to be observed when dealing with this type of equipment.	Practice career in telecommunication industry. Troubleshoot microwave, fiber optic, radio communication and telephone system	I	2,3,4	<p>The SLO was assessed using hands-on troubleshooting and written quiz and examination.</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>3</td> </tr> <tr> <td>B</td> <td>4</td> </tr> <tr> <td>C</td> <td>0</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	3	B	4	C	0
Letter Grade	Number of student											
A	3											
B	4											
C	0											

<p>2. Describe and measure Amplitude Modulated signals.</p>	<p>Practice career in telecommunication industry.</p> <p>Troubleshoot microwave, fiber optic, radio communication and telephone system</p>	<p>D</p>	<p>2,3,4</p>	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p> <table border="1" data-bbox="991 496 1969 646"> <thead> <tr> <th>Letter Grade</th> <th>Number of student</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>1</td> </tr> <tr> <td>B</td> <td>6</td> </tr> <tr> <td>C</td> <td>0</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	1	B	6	C	0
Letter Grade	Number of student											
A	1											
B	6											
C	0											
<p>3. Describe and measure Frequency Modulated signals..</p>	<p>Practice career in telecommunication industry.</p> <p>Troubleshoot microwave, fiber optic, radio communication and telephone system</p>	<p>D</p>	<p>2,3,4</p>	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p> <table border="1" data-bbox="991 971 1969 1120"> <thead> <tr> <th>Letter Grade</th> <th>Number of student</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>2</td> </tr> <tr> <td>B</td> <td>5</td> </tr> <tr> <td>C</td> <td>0</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	2	B	5	C	0
Letter Grade	Number of student											
A	2											
B	5											
C	0											
<p>4. Identify Single Sideband transmitters and receivers, different types of</p>	<p>Practice career in telecommunication industry.</p>	<p>I</p>	<p>2,3,4</p>	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p>								

transmission lines and their characteristics.	Troubleshoot microwave, fiber optic, radio communication and telephone system			<table border="1" data-bbox="991 315 1969 467"> <thead> <tr> <th data-bbox="991 315 1482 354">Letter Grade</th> <th data-bbox="1482 315 1969 354">Number of student</th> </tr> </thead> <tbody> <tr> <td data-bbox="991 354 1482 393">A</td> <td data-bbox="1482 354 1969 393">2</td> </tr> <tr> <td data-bbox="991 393 1482 431">B</td> <td data-bbox="1482 393 1969 431">5</td> </tr> <tr> <td data-bbox="991 431 1482 467">C</td> <td data-bbox="1482 431 1969 467">0</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	2	B	5	C	0
Letter Grade	Number of student											
A	2											
B	5											
C	0											
5. Describe Amplitude Modulated circuits.	Practice career in telecommunication industry. Troubleshoot microwave, fiber optic, radio communication and telephone system	I	2,3,4	<p data-bbox="991 537 1969 607">The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p data-bbox="991 646 1969 716">Students need more time in hands-on and other practical procedure to reach mastery level performance.</p> <table border="1" data-bbox="991 792 1969 945"> <thead> <tr> <th data-bbox="991 792 1482 831">Letter Grade</th> <th data-bbox="1482 792 1969 831">Number of student</th> </tr> </thead> <tbody> <tr> <td data-bbox="991 831 1482 870">A</td> <td data-bbox="1482 831 1969 870">2</td> </tr> <tr> <td data-bbox="991 870 1482 909">B</td> <td data-bbox="1482 870 1969 909">2</td> </tr> <tr> <td data-bbox="991 909 1482 945">C</td> <td data-bbox="1482 909 1969 945">3</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	2	B	2	C	3
Letter Grade	Number of student											
A	2											
B	2											
C	3											
6 . Describe basic Amplitude Modulation circuit construction.	Practice career in telecommunication industry. Troubleshoot microwave, fiber optic, radio communication	I	2,3,4	<p data-bbox="991 1013 1969 1083">The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p data-bbox="991 1122 1969 1192">Students need more time in hands-on and other practical procedure to reach mastery level performance.</p> <table border="1" data-bbox="991 1268 1969 1377"> <thead> <tr> <th data-bbox="991 1268 1482 1307">Letter Grade</th> <th data-bbox="1482 1268 1969 1307">Number of student</th> </tr> </thead> <tbody> <tr> <td data-bbox="991 1307 1482 1346">A</td> <td data-bbox="1482 1307 1969 1346">2</td> </tr> <tr> <td data-bbox="991 1346 1482 1377">B</td> <td data-bbox="1482 1346 1969 1377">4</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	2	B	4		
Letter Grade	Number of student											
A	2											
B	4											

	n and telephone system			C	1								
7. Measure signals in a diode modulator and demodulator circuit.	Practice career in telecommunication industry. Troubleshoot microwave, fiber optic, radio communication and telephone system	D	2,3,4	The SLO was assess using hands-on troubleshooting and written quiz and examination. Students need more time in hands-on and other practical procedure to reach mastery level performance.	<table border="1"> <thead> <tr> <th>Letter Grade</th> <th>Number of student</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>2</td> </tr> <tr> <td>B</td> <td>2</td> </tr> <tr> <td>C</td> <td>3</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	2	B	2	C	3
Letter Grade	Number of student												
A	2												
B	2												
C	3												
8. Troubleshoot Amplitude Modulated transmitter and receiver systems.	Practice career in telecommunication industry. Troubleshoot microwave, fiber optic, radio communication and telephone system	M	2,3,4	The SLO was assess using hands-on troubleshooting and written quiz and examination. Students need more time in hands-on and other practical procedure to reach mastery level performance.	<table border="1"> <thead> <tr> <th>Letter Grade</th> <th>Number of student</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>2</td> </tr> <tr> <td>B</td> <td>5</td> </tr> <tr> <td>C</td> <td>0</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	2	B	5	C	0
Letter Grade	Number of student												
A	2												
B	5												
C	0												
9. Describe Frequency Modulated circuits.	Practice career in	I	2,3,4	The SLO was assess using hands-on troubleshooting and written quiz and examination.									

	telecommunication industry. Troubleshoot microwave, fiber optic, radio communication and telephone system			Students need more time in hands-on and other practical procedure to reach mastery level performance. <table border="1"> <thead> <tr> <th>Letter Grade</th> <th>Number of student</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>3</td> </tr> <tr> <td>B</td> <td>4</td> </tr> <tr> <td>C</td> <td>0</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	3	B	4	C	0
Letter Grade	Number of student											
A	3											
B	4											
C	0											
10. Describe basic Frequency Modulated Circuit operation.	Practice career in telecommunication industry. Troubleshoot microwave, fiber optic, radio communication and telephone system	I	2,3,4	The SLO was assess using hands-on troubleshooting and written quiz and examination. Students need more time in hands-on and other practical procedure to reach mastery level performance. <table border="1"> <thead> <tr> <th>Letter Grade</th> <th>Number of student</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>2</td> </tr> <tr> <td>B</td> <td>5</td> </tr> <tr> <td>C</td> <td>0</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	2	B	5	C	0
Letter Grade	Number of student											
A	2											
B	5											
C	0											
11. Describe Frequency Modulated transmitter and receiver circuits.	Practice career in telecommunication industry. Troubleshoot microwave,	I	2,3,4	The SLO was assess using hands-on troubleshooting and written quiz and examination. Students need more time in hands-on and other practical procedure to reach mastery level performance.								

	fiber optic, radio communication and telephone system			<table border="1"> <thead> <tr> <th>Letter Grade</th> <th>Number of student</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>2</td> </tr> <tr> <td>B</td> <td>5</td> </tr> <tr> <td>C</td> <td>0</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	2	B	5	C	0
Letter Grade	Number of student											
A	2											
B	5											
C	0											
12. Observe the operation and measure signals in an integrated circuit transmitter and receiver.	Practice career in telecommunication industry. Troubleshoot microwave, fiber optic, radio communication and telephone system	D	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</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>2</td> </tr> <tr> <td>B</td> <td>5</td> </tr> <tr> <td>C</td> <td>0</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	2	B	5	C	0
Letter Grade	Number of student											
A	2											
B	5											
C	0											
13. Troubleshoot Frequency Modulated transmitter and receivers.	Practice career in telecommunication industry. Troubleshoot microwave, fiber optic, radio communication and telephone	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</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>2</td> </tr> <tr> <td>B</td> <td>4</td> </tr> <tr> <td>C</td> <td>1</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	2	B	4	C	1
Letter Grade	Number of student											
A	2											
B	4											
C	1											

	system			
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Additional observations: Need to purchase additional set of Radio communication FM, AM and SSB NIDA cards to accommodate growing number of students enrolled in the course.

Special comments: There are 2 students got A and 5students got B.

Recommendations: Modify the course outline must be increase its credit number and include topics such as include high frequency (HF) radio transceiver, citizens band (CB) transceiver, and transceiver station setup and antenna installation in the topics and increase the allotted time for hands-on. In addition, cellular phone technology and servicing must be included on this course. Must buy FM and AM receiver card for NIDA radio communication activity some of our cards are already non functional and need to be replace.

Signature: _____

Date: _____

Name typed, position

Review of Performance: (**VEE 240 Signal Processing**, Fall 2012, 15 students)
 Submitted by: Nelchor Permitez Ed. D.

Institutional Learning Outcomes (ILO):

- ILO1: communicate effectively
- ILO2: employ critical thinking [*& problem solving*]
- ILO3: possess specific knowledge and skills in a major discipline or professional program of study
- ILO4: take responsibility and develop skills for learning
- ILO5: interact responsibly with people, cultures, and their environment

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	ILO	Reflection/Comment								
1. Give general description of analog pulse modulation, pulse amplitude modulation (PAM), pulse width modulation (PWM) and pulse position modulation (PPM)	Perform Troubleshooting techniques to maintain , diagnose, and repair electronic equipment and devices	D	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Letter Grade</th> <th>Number of student</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>7</td> </tr> <tr> <td>B</td> <td>8</td> </tr> <tr> <td>C</td> <td>0</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	7	B	8	C	0
Letter Grade	Number of student											
A	7											
B	8											
C	0											

<p>2. Describe Pulse coded modulation (PCM) circuit, operation and troubleshooting PCM circuit.</p>	<p>Perform Troubleshooting techniques to maintain , diagnose, and repair electronic equipment and devices</p>	<p>D</p>	<p>2,3,4</p>	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p> <table border="1" data-bbox="907 496 1885 646"> <thead> <tr> <th>Letter Grade</th> <th>Number of student</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>2</td> </tr> <tr> <td>B</td> <td>11</td> </tr> <tr> <td>C</td> <td>2</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	2	B	11	C	2
Letter Grade	Number of student											
A	2											
B	11											
C	2											
<p>3. Describe Delta modulation (DM) circuit, operation and troubleshoot DM circuit.</p>	<p>Perform Troubleshooting techniques to maintain , diagnose, and repair electronic equipment and devices</p>	<p>M</p>	<p>2,3,4</p>	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p> <table border="1" data-bbox="907 906 1885 1055"> <thead> <tr> <th>Letter Grade</th> <th>Number of student</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>3</td> </tr> <tr> <td>B</td> <td>9</td> </tr> <tr> <td>C</td> <td>3</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	3	B	9	C	3
Letter Grade	Number of student											
A	3											
B	9											
C	3											
<p>4: Describe FSK (Frequency shift keying) circuit, operation and troubleshoot FSK circuit</p>	<p>Perform Troubleshooting techniques to maintain , diagnose, and repair electronic equipment and</p>	<p>M</p>	<p>2,3,4</p>	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p> <table border="1" data-bbox="907 1317 1885 1349"> <thead> <tr> <th>Letter Grade</th> <th>Number of student</th> </tr> </thead> </table>	Letter Grade	Number of student						
Letter Grade	Number of student											

	devices			<table border="1"> <tr> <td>A</td> <td>6</td> </tr> <tr> <td>B</td> <td>8</td> </tr> <tr> <td>C</td> <td>1</td> </tr> </table>	A	6	B	8	C	1		
A	6											
B	8											
C	1											
5. Describe Phase shift Keying (PSK) circuit, operation and troubleshoot PSK circuit.	Perform Troubleshooting techniques to maintain , diagnose, and repair electronic equipment and devices	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</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>3</td> </tr> <tr> <td>B</td> <td>10</td> </tr> <tr> <td>C</td> <td>2</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	3	B	10	C	2
Letter Grade	Number of student											
A	3											
B	10											
C	2											
6. Describe Time division Multiplexing (TDM) circuit, operation and troubleshoot TDM circuit.	Perform Troubleshooting techniques to maintain , diagnose, and repair electronic equipment and devices	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</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>3</td> </tr> <tr> <td>B</td> <td>7</td> </tr> <tr> <td>C</td> <td>5</td> </tr> </tbody> </table>	Letter Grade	Number of student	A	3	B	7	C	5
Letter Grade	Number of student											
A	3											
B	7											
C	5											
7. Describe Frequency Division Multiplexing (FDM) circuit, operation and troubleshoot FDM	Perform Troubleshooting techniques to maintain , diagnose, and	M	2,3,4	<p>The SLO was assess using hands-on troubleshooting and written quiz and examination.</p> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p>								

circuit	repair electronic equipment and devices				
				Letter Grade	Number of student
				A	4
				B	7
				C	4

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

Special comments: There were 2 students got A, 10 students got B and 3 students got C.

Recommendations: Need to buy additional 1 set of signal processing card to accommodate more students during hands on activity. Students must have and should shoulder the cost of the copy of Nida reference manual for signal processing.

Signature: _____

Name typed, position

Date: _____