

**Review of Performance:** VEE 135 Digital Electronics I Spring 2016, (19 students) P1  
**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.
- 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.

SLO#	Program SLO#	I, D, M	ISLO	Reflection/Comment												
1. Tell the history and development of digital electronics.	3. Interpret schematic diagrams and waveforms.	I, D	6, 7	<p>SLO was assessed using test questions using the assessment criteria as stated in the course outline. Result of assessment is shown below:</p> <table border="1"> <thead> <tr> <th>No. of Students</th> <th>Score</th> <th>Comment</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>4</td> <td>69 or lower</td> <td>Failed</td> <td>21 %</td> </tr> <tr> <td>15</td> <td>70 or better</td> <td>Passed</td> <td>79 %</td> </tr> </tbody> </table> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p>	No. of Students	Score	Comment	Percentage	4	69 or lower	Failed	21 %	15	70 or better	Passed	79 %
No. of Students	Score	Comment	Percentage													
4	69 or lower	Failed	21 %													
15	70 or better	Passed	79 %													
2. Describe and demonstrate the use of	2. Use electronic tools and test	I,D	6, 7	SLO was assessed using hands-on experiment and written test questions using the assessment criteria as stated in the course outline. Students were												

digital test equipment and its operating characteristics.	equipment competently.			<p>able to demonstrate the operation of the different digital test equipment. Result of assessment is shown below:</p> <table border="1" data-bbox="1026 329 1887 440"> <thead> <tr> <th>No. of Students</th> <th>Score</th> <th>Comment</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>69 or lower</td> <td>Failed</td> <td>16 %</td> </tr> <tr> <td>16</td> <td>70 or better</td> <td>Passed</td> <td>84 %</td> </tr> </tbody> </table> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p>	No. of Students	Score	Comment	Percentage	3	69 or lower	Failed	16 %	16	70 or better	Passed	84 %
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3	69 or lower	Failed	16 %													
16	70 or better	Passed	84 %													
3. Examine the purpose of the 555 timer and digital integrated circuits.	3. Interpret schematic diagrams and waveforms.	I, D	6, 7	<p>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 observe and explain the operation of the 555 timer using the NIDA trainers. Result of assessment is shown below:</p> <table border="1" data-bbox="1026 761 1887 872"> <thead> <tr> <th>No. of Students</th> <th>Score</th> <th>Comment</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>69 or lower</td> <td>Failed</td> <td>5 %</td> </tr> <tr> <td>18</td> <td>70 or better</td> <td>Passed</td> <td>95 %</td> </tr> </tbody> </table> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p>	No. of Students	Score	Comment	Percentage	1	69 or lower	Failed	5 %	18	70 or better	Passed	95 %
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1	69 or lower	Failed	5 %													
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4. Identify and describe the six basic logic gates and combinational circuits in digital electronics.	3. Interpret schematic diagrams and waveforms.	I, D	6, 7	<p>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 and explain the operation of the different logic gates using the NIDA trainers. Result of assessment is shown below:</p> <table border="1" data-bbox="1026 1195 1887 1305"> <thead> <tr> <th>No. of Students</th> <th>Score</th> <th>Comment</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>69 or lower</td> <td>Failed</td> <td>5 %</td> </tr> <tr> <td>18</td> <td>70 or better</td> <td>Passed</td> <td>95 %</td> </tr> </tbody> </table>	No. of Students	Score	Comment	Percentage	1	69 or lower	Failed	5 %	18	70 or better	Passed	95 %
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5. Recognize the number systems use in digital logic design and its conversion.	3. Interpret schematic diagrams and waveforms.	I, D,	6, 7	<p>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 convert different number system and perform experiment using the NIDA trainers. Result of assessment is shown below:</p> <table border="1"> <thead> <tr> <th>No. of Students</th> <th>Score</th> <th>Comment</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>69 or lower</td> <td>Failed</td> <td>5 %</td> </tr> <tr> <td>18</td> <td>70 or better</td> <td>Passed</td> <td>95 %</td> </tr> </tbody> </table> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p>	No. of Students	Score	Comment	Percentage	1	69 or lower	Failed	5 %	18	70 or better	Passed	95 %
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6. Identify and describe flip-flop circuits.	3. Interpret schematic diagrams and waveforms.	I, D	4, 6,7	<p>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 explain the operation of the different flip-flop circuits using the NIDA trainers. Result of assessment is shown below:</p> <table border="1"> <thead> <tr> <th>No. of Students</th> <th>Score</th> <th>Comment</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>69 or lower</td> <td>Failed</td> <td>5 %</td> </tr> <tr> <td>18</td> <td>70 or better</td> <td>Passed</td> <td>95 %</td> </tr> </tbody> </table> <p>Students need more time in hands-on and other practical procedure to reach mastery level performance.</p>	No. of Students	Score	Comment	Percentage	1	69 or lower	Failed	5 %	18	70 or better	Passed	95 %
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**Special comments:** 17 out of 19 or 89.5 % of the students got a grade of C and higher and 2 got D or 10.5 %.

**Summary of Grades:**

A+	=	0
A	=	0
A-	=	0
B+	=	5
B	=	4
B-	=	1
C+	=	2
C	=	5
C-	=	0
D+	=	0
D	=	0
D-	=	2
F	=	0

**Recommendations:** Laboratory equipment (NIDA cards) for Digital Electronics I must be enough for at least 3 to 5 sets to be able for the students to perform their required experimentation. Additional quality analog and digital multi-meter must also be purchase so that more hands on experimentation can be done.

Signature:      DANILO S. IBARROLA  
                          Instructor

**Date:** May 6, 2016