**Review of Performance:** **VEE 135 Digital Electronics I** Spring 2016, (14 students) **P2**
**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.

<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. Tell the history and development of digital electronics.</td><td>3. Interpret schematic diagrams and waveforms.</td><td>I, D</td><td>6, 7</td><td>SLO was assessed using test questions using the assessment criteria as stated in the course outline. Result of assessment is shown below:
<table>
<tr><th>No. of Students</th><th>Score</th><th>Comment</th><th>Percentage</th></tr>
<tr><td>1</td><td>69 or lower</td><td>Failed</td><td>7 %</td></tr>
<tr><td>13</td><td>70 or better</td><td>Passed</td><td>93 %</td></tr>
</table>
Students need more time in hands-on and other practical procedure to reach mastery level performance.</td></tr>
<tr><td>2. Describe and demonstrate the use of</td><td>2. Use electronic tools and test</td><td>I,D</td><td>6, 7</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</td></tr>
</table>

<table>
<tr>
<td>digital test equipment and its operating characteristics.</td>
<td>equipment competently.</td>
<td></td>
<td></td>
<td>able to demonstrate the operation of the different digital test equipment. Result of assessment is shown below:
<table>
<tr><th>No. of Students</th><th>Score</th><th>Comment</th><th>Percentage</th></tr>
<tr><td>0</td><td>69 or lower</td><td>Failed</td><td>0 %</td></tr>
<tr><td>14</td><td>70 or better</td><td>Passed</td><td>100 %</td></tr>
</table>
Students need more time in hands-on and other practical procedure to reach mastery level performance.</td>
</tr>
<tr>
<td>3. Examine the purpose of the 555 timer and digital integrated circuits.</td>
<td>3. Interpret schematic diagrams and waveforms.</td>
<td>I, D</td>
<td>6, 7</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 observe and explain the operation of the 555 timer using the NIDA trainers. Result of assessment is shown below:
<table>
<tr><th>No. of Students</th><th>Score</th><th>Comment</th><th>Percentage</th></tr>
<tr><td>0</td><td>69 or lower</td><td>Failed</td><td>0 %</td></tr>
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</table>
Students need more time in hands-on and other practical procedure to reach mastery level performance.</td>
</tr>
<tr>
<td>4. Identify and describe the six basic logic gates and combinational circuits in digital electronics.</td>
<td>3. Interpret schematic diagrams and waveforms.</td>
<td>I, D</td>
<td>6, 7</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 and explain the operation of the different logic gates using the NIDA trainers. Result of assessment is shown below:
<table>
<tr><th>No. of Students</th><th>Score</th><th>Comment</th><th>Percentage</th></tr>
<tr><td>1</td><td>69 or lower</td><td>Failed</td><td>7 %</td></tr>
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<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>5. Recognize the number systems use in digital logic design and its conversion.</td><td>3. Interpret schematic diagrams and waveforms.</td><td>I, D,</td><td>6, 7</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 convert different number system and perform experiment using the NIDA trainers. Result of assessment is shown below:<br><br><table><tr><th>No. of Students</th><th>Score</th><th>Comment</th><th>Percentage</th></tr><tr><td>1</td><td>69 or lower</td><td>Failed</td><td>7 %</td></tr><tr><td>13</td><td>70 or better</td><td>Passed</td><td>93 %</td></tr></table><br>Students need more time in hands-on and other practical procedure to reach mastery level performance.</td></tr>
<tr><td>6. Identify and describe flip-flop circuits.</td><td>3. Interpret schematic diagrams and waveforms.</td><td>I, D</td><td>4, 6,7</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 explain the operation of the different flip-flop circuits using the NIDA trainers. Result of assessment is shown below:<br><br><table><tr><th>No. of Students</th><th>Score</th><th>Comment</th><th>Percentage</th></tr><tr><td>1</td><td>69 or lower</td><td>Failed</td><td>7 %</td></tr><tr><td>13</td><td>70 or better</td><td>Passed</td><td>93 %</td></tr></table><br>Students need more time in hands-on and other practical procedure to reach mastery level performance.</td></tr>
</table>

**Special comments:** 13 out of 14 or 93% of the students got a grade of C and higher and 1 or 7% got a grade of F due to absences and missed quizzes and activities.

**Summary of Grades:**

| | | |
|---|---|---|
| **A+** | **=** | **0** |
| **A** | **=** | **1** |
| **A-** | **=** | **2** |
| **B+** | **=** | **0** |
| **B** | **=** | **3** |
| **B-** | **=** | **3** |
| **C+** | **=** | **3** |
| **C** | **=** | **0** |
| **C-** | **=** | **1** |
| **F** | **=** | **1** |

**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