Review of Performance: VEE 110/P1 Discrete Devices I
Submitted by: Cirilo Recana

No. of Student: 12
Semesters: Fall 2013

Institutional Student Learning Outcomes (ISLO's)

1. Effective oral communication
2. Effective written communication
3. Critical thinking
4. Problem solving
5. Intercultural knowledge and competence
6. Information literacy
7. Foundations and skills for life-long learning
8. Quantitative reasoning

Program Learning Outcomes (PLO's)

1. Practice safety and occupational health procedures in the workplace.
2. Use electricity hand and power tools competently.
3. Test electrical equipment.
4. Interpret schematic wiring diagrams and waveforms.
5. Determine the amount of load per circuit.
6. Install residential wiring circuits according to given specification and plan.
7. Identify and interpret basic solid state (electronics) symbols and circuits schematics commonly found in the electrical industry.
8. Analyze circuit operation on basic motors.
9. Perform basic troubleshooting on basic motors.
10. Install and perform basic maintenance on air-conditioning units.
11. Interpret and install circuits according to rules and regulations of the National Electrical Code book.
12. Install and analyze basic motor control circuits.

<table>
<tr><th>SLO#</th><th>PLO</th><th>I, D, M</th><th>ISLO</th><th>Reflection/Comment</th></tr>
<tr><td>SLO#1 Explain the construction, principle of operation and testing method of semiconductor diodes.</td><td>3, 7</td><td>I (introduced level)</td><td>3</td><td>SLO was assessed by written 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></tr>
<tr><td>2</td><td>69 or lower</td><td>Failed</td></tr>
<tr><td>10</td><td>70 or better</td><td>Passed</td></tr>
</table></td></tr>
</table>

<table>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>17% failed, 83% passed

Observation: Due to the pace of the class, most parts of hands-on experimentation were not delivered because of needed additional time spent on theoretical concept and circuit calculation.</td>
</tr>
<tr>
<td>SLO#2 Describe the operation and troubleshoot semiconductor diode limiter (clipper) and clamper circuits.</td>
<td>3, 7</td>
<td>I,D (introduced and demonstrate level)</td>
<td>3</td>
<td>SLO was assessed by written 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></tr>
<tr><td>1</td><td>69 or lower</td><td>Failed</td></tr>
<tr><td>11</td><td>70 or better</td><td>Passed</td></tr>
</table>
8.3% failed, 92% passed

Observation: Due to the pace of the class, most parts of hands-on experimentation were not delivered because of needed additional time spent on theoretical concept and circuit calculation.</td>
</tr>
<tr>
<td>SLO#3 Describe the purpose of an amplifier, the classes of operation and identify the three main BJT configurations.</td>
<td>3, 7</td>
<td>I,D (introduced and demonstrate level)</td>
<td>3</td>
<td>SLO was assessed by written 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></tr>
<tr><td>3</td><td>69 or lower</td><td>Failed</td></tr>
<tr><td>9</td><td>70 or better</td><td>Passed</td></tr>
</table>
25% failed, 75% passed

Observation: Due to the pace of the class, most parts of hands-on experimentation were not delivered because of needed additional time spent on theoretical concept and circuit calculation.</td>
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</table>

<table>
<tr>
<td>SLO#4 Describe the operating characteristics and measure the circuit parameters of the following amplifier types:
Common Emitter
Common Collector
Common Base</td>
<td>3, 7</td>
<td>D (demonstrate level)</td>
<td>3</td>
<td>SLO was assessed by written test questions using the assessment criteria as stated in the course outline. Result of assessment is shown below:

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</table>
17% failed, 83% passed

Observation: Due to the pace of the class, most parts of hands-on experimentation were not delivered because of needed additional time spent on theoretical concept and circuit calculation.</td>
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<tr>
<td>SLO #5 Describe the operation of the following types of rectification
Half wave
Full wave
Bridge</td>
<td>3, 7</td>
<td>I,D (introduced and demonstrate level)</td>
<td>3</td>
<td>SLO was assessed by written test questions using the assessment criteria as stated in the course outline. Result of assessment is shown below:

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</table>
25% failed, 75% passed

Observation: Due to the pace of the class, most parts of hands-on experimentation were not delivered because of needed additional time spent on theoretical concept and circuit calculation.</td>
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<td>SLO#6 Describe the operation of various RC and RL filter circuits.</td>
<td>3, 7</td>
<td>I (introduced level)</td>
<td>3</td>
<td>SLO was assessed by written test questions using the assessment criteria as stated in the course outline. Result of assessment is shown below:

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<td>17% failed, 83% passed

Observation: Due to the pace of the class, most parts of hands-on experimentation were not delivered because of needed additional time spent on theoretical concept and circuit calculation.</td>
</tr>
<tr>
<td>SLO#7 Describe the operation of zener diodes and basic zener voltage regulators.</td>
<td>3, 7</td>
<td>I (introduced level)</td>
<td>3</td>
<td>SLO was assessed by written test questions using the assessment criteria as stated in the course outline. Result of assessment is shown below:

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25% failed, 75% passed

Observation: Due to the pace of the class, most parts of hands-on experimentation were not delivered because of needed additional time spent on theoretical concept and circuit calculation.</td>
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<tr>
<td>SLO#8 Identify voltage regulator circuits and explain their operation.</td>
<td>3, 7</td>
<td>D (demonstrate level)</td>
<td>3</td>
<td>SLO was assessed by written test questions using the assessment criteria as stated in the course outline. Result of assessment is shown below:

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SLO#9 Describe the purpose and operation of an I.C. Regulator.	3, 7	I,D (introduced and demonstrate level)	3	*Due to the pace of the class, SLO was not covered.*
SLO#10 Explain the operation and advantages of Half and Full Wave Voltage Doublers.	3, 7	I,D (introduced and demonstrate level)	3	*Due to the pace of the class, SLO was not covered*

Additional observations: In reference with the data presented above, the last two SLO' was not covered due to class pace and very limited experimental testing equipment and NIDA cards available. But high percentage showed students are interested in combining theoretical and hands-on/laboratory activities.

FINAL GRADES BREAKDOWN:
A = 3 **B** = 4 **C** = 5 **D** = [none] **F** = [none]

Recommendations: Additional laboratory equipments such as analog and digital multi-meter and oscilloscope must be provided so that lab exercises will be well performed by the students per lesson. It is suggested that at least a maximum of 15 students per class with a 1:3 lab equipment ratios.

A modification of the SLO's is suggested to a minimal number to be achievable every semester.

Signature: **Cirilo B. Recana** Date Submitted: December 2013
Electrical Instructor