

Review of Performance: VEE 222 Discrete Devices II  
 Submitted by: Cirilo Recana

No. of Student: 15  
 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.

SLO#	PLO	I, D, M	ISLO	Reflection/Comment									
SLO#1 Describe the purpose and operation of Unijunction Transistor (UJT) and Silicon Controlled Rectifier (SCR).	4, 7	I (introduced level)	3	SLO was assessed by written test questions using the assessment criteria as stated in the course outline. Result of assessment is shown below: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>No. of students</th> <th>Score</th> <th>Comment</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>69 or lower</td> <td>Failed</td> </tr> <tr> <td>13</td> <td>70 or better</td> <td>Passed</td> </tr> </tbody> </table>	No. of students	Score	Comment	2	69 or lower	Failed	13	70 or better	Passed
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				<p>13% failed, 87% passed</p> <p><b>Observation:</b> <i>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.</i></p>									
SLO#2 Describe UJT oscillator circuit operation.	4, 7	I,D (introduced and demonstrate level)	3	<p>SLO was assessed by written 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> </tr> </thead> <tbody> <tr> <td>3</td> <td>69 or lower</td> <td>Failed</td> </tr> <tr> <td>12</td> <td>70 or better</td> <td>Passed</td> </tr> </tbody> </table> <p>20% failed, 80% passed</p> <p><b>Observation:</b> <i>Due to the pace of the class, most parts of hands-on experimentation were not delivered because of needed equipment such as analog meter and NIDA card for UJT experiment.</i></p>	No. of students	Score	Comment	3	69 or lower	Failed	12	70 or better	Passed
No. of students	Score	Comment											
3	69 or lower	Failed											
12	70 or better	Passed											
SLO#3 Describe SCR trigger circuit operation.	4, 7	I,D (introduced and demonstrate level)	3	<p>SLO was assessed by written 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> </tr> </thead> <tbody> <tr> <td>1</td> <td>69 or lower</td> <td>Failed</td> </tr> <tr> <td>14</td> <td>70 or better</td> <td>Passed</td> </tr> </tbody> </table> <p>7% failed, 93% passed</p> <p><b>Observation:</b> <i>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.</i></p>	No. of students	Score	Comment	1	69 or lower	Failed	14	70 or better	Passed
No. of students	Score	Comment											
1	69 or lower	Failed											
14	70 or better	Passed											

				<i>A good analog multi-meter and additional oscilloscope must be purchase so students can grasp the use of this instrument in their experimentation activities.</i>									
SLO#4 Describe SCR power control operation.	4, 7	D (demonstrate level)	3	<p>SLO was assessed by written 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> </tr> </thead> <tbody> <tr> <td>1</td> <td>69 or lower</td> <td>Failed</td> </tr> <tr> <td>14</td> <td>70 or better</td> <td>Passed</td> </tr> </tbody> </table> <p>7% failed, 93% passed</p> <p><b>Observation:</b> <i>Due to the size of the class, most parts of hands-on experimentation were not delivered because of needed additional NIDA cards and testing instruments are not enough for the class.</i></p> <p><i>Additional NIDA card for SCR, analog meter, digital meter and test console are needed.</i></p>	No. of students	Score	Comment	1	69 or lower	Failed	14	70 or better	Passed
No. of students	Score	Comment											
1	69 or lower	Failed											
14	70 or better	Passed											
SLO#5 Identify the relationship among Triac, SCRs , Diac and four-layered devices.	4, 7	I,D (introduced and demonstrate level)	3	<p>SLO was assessed by written 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> </tr> </thead> <tbody> <tr> <td>3</td> <td>69 or lower</td> <td>Failed</td> </tr> <tr> <td>12</td> <td>70 or better</td> <td>Passed</td> </tr> </tbody> </table> <p>20% failed, 80% passed</p> <p><b>Observation:</b> <i>Due to the pace of the class, most parts of hands-on experimentation were not delivered because of unavailability NIDA card for this experiment. We just emphasize more on the theoretical part of each component.</i></p>	No. of students	Score	Comment	3	69 or lower	Failed	12	70 or better	Passed
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3	69 or lower	Failed											
12	70 or better	Passed											

SLO#6 Describe the construction, operation and application of Programmable Unijunction Transistor (PUT).	4, 7	I,D (introduced and demonstrate level)	3	<p>SLO was assessed by written test questions using the assessment criteria as stated in the course outline. Result of assessment is shown below:</p> <table border="1" data-bbox="1228 321 1917 435"> <thead> <tr> <th>No. of students</th> <th>Score</th> <th>Comment</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>69 or lower</td> <td>Failed</td> </tr> <tr> <td>13</td> <td>70 or better</td> <td>Passed</td> </tr> </tbody> </table> <p>13% failed, 87% passed</p> <p><b>Observation:</b> <i>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.</i></p>	No. of students	Score	Comment	2	69 or lower	Failed	13	70 or better	Passed
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**Additional observations:** In reference with the data presented above, high percentage showed students are highly interested in hands-on experimentation or class activities.

**STUDENTS FINAL GRADES BREAKDOWN:**

**A = 1      B = 8      C = 6      D = [none]      F = [none]**

**Recommendations:** Laboratory equipments (NIDA cards) for discrete devices II must be enough for at least 3 to 5 sets to be able for the students to perform their required experiment. Additional good quality analog multi-meter and oscilloscope must also be purchase so that more hands on experimentation can be done.

A plan to modify and combine discrete devices I & II course into one course for electrical students use so that it focus only on discrete devices that are needed in the electrical controls.

Signature: **Cirilo B. Recana**  
Electrical Instructor

Date Submitted: December 2013