I. Assessment Outcomes from the Course Syllabus

X (A) Ability to apply knowledge of mathematics, science and engineering. (G) Ability to communicate effectively in written and oral formats.
(B) Ability to design and conduct experiments as well as analyze and interpret data.

(C) Ability to design a system, component, or process to meet desired needs. (H) A broad education necessary to understand the impact of engineering solutions in global, economic, and societal context.
(D) Ability to function on multidisciplinary teams.

X (E) Ability to identify, formulate, and solve engineering problems.

X (F) An understanding of professional and ethical responsibility.

II. List of Course Topics from the Course Syllabus

1. Introduction to circuit theory and Ohm's law.
2. Kirchoff's laws.
3. Power and independent sources.
4. Voltage and current dividers.
5. Superposition.
7. Thevenin and Norton equivalents.
8. Source transformations.
10. Introduction to AC analysis and waveforms.
11. Complex numbers.
12. Phase analysis.
13. Impedance in the frequency domain.
14. RC, RL and RLC circuits.
15. Introduction to AC power.
17. Power factor.
18. Transformers.
19. Electrical safety.

III. Course Assessment Summary Table: one row of the table should be devoted to each of the checked outcomes in part I.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Topics</th>
<th>Specific Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>(A) Ability to apply knowledge of mathematics, science and engineering.</td>
<td>1-18</td>
<td>Circuit analysis problems requires a knowledge of mathematics and basic science</td>
</tr>
<tr>
<td>(E) Ability to identify, formulate, and solve engineering problems</td>
<td>1-18</td>
<td>Homework and exam problems require understanding basic concepts, laws, and methods</td>
</tr>
<tr>
<td>(F) An understanding of professional and ethical responsibility.</td>
<td>19</td>
<td>Electrical safety and the National Electrical Code are discussed</td>
</tr>
</tbody>
</table>

IV. Using the table as a guide, for each outcome summarize your evaluation of the students’ achievement of that outcome; cite student performance on the identified measures as evidence to support your conclusions.

(A) Ability to apply knowledge of mathematics, science and engineering.

Overall, most of the students displayed an adequate ability to apply concepts learned during the course. Students had difficulty solving Thevenin equivalent circuits and First-order circuits as shown by an average exam score of 53%. Understanding of physics, advanced algebra, and calculus was demonstrated on exams. The average score for 3 exams was 67%.

(E) Ability to identify, formulate, and solve engineering problems

Exam and homework problems required solving engineering problems.

(F) An understanding of professional and ethical responsibility

Electrical safety information and an introduction to the National Electrical Code were presented to the students.
V. Qualitative Assessment of Student Performance: using the arguments above and other data support the claim that students who completed this course with a grade of C or better have achieved each of the intended outcomes of this course.

The types of problems given on exams demonstrated that the students did achieve the desired outcomes of competency for ABET Criterion (A) & (E). ABET Criterion (F) was assessed by taking attendance for the lecture on electrical safety.

VI. Concerns: state any concerns you may hold about this class – were the students adequately prepared coming into it? Are there topics or outcomes where (some) students were weak after completing the course? Other concerns? Were there any comments on students’ course evaluations that should be addressed in future instances of the course? This section is very important for improving our program: it provides critical input to the curriculum committee for identifying areas requiring attention.

Students were weak in understanding Thevenin Equivalent and First-order circuits.

Signature ___________________________ Date: ______________________

Please email a copy of the completed form to Patricia Arnold, patricia@eecs.wsu.edu and deliver a signed hardcopy to her mailbox.