I. Assessment Outcomes from the Course Syllabus

☐ (A) Ability to apply knowledge of mathematics, science and engineering.
☐ (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.
☐ (D) Ability to function on multidisciplinary teams.
☐ (E) Ability to identify, formulate, and solve engineering problems.
☐ (F) An understanding of professional and ethical responsibility.
☐ (G) Ability to communicate effectively in written and oral formats.
☐ (H) A broad education necessary to understand the impact of engineering solutions in global, economic, and societal context.
☐ (I) Recognize the need for, and have the ability to engage in life long learning.
☐ (J) Have a broad education and knowledge of contemporary issues.
☐ (K) Ability to use techniques, skills and modern engineering tools necessary for engineering practices.

II. List of Course Topics from the Course Syllabus

Introduction and overview
1. single phase and three-phase ac circuits
2. phasors and complex power
Magnetic circuits and transformers
3. magnetic circuits
4. transformers
Rotating machines
5. generalized rotating machines principles
6. induction machines
7. synchronous machines
8. dc machines
Transmission of electric power
9. transmission line parameters
10. transmission line modeling and power transfer capacity
11. power flow calculations
Power system operations
12. power plant controls, generation scheduling
13. open transmission and electricity markets

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>1-13</td>
<td>Homworks 1-12&lt;br&gt;Midterm exams 1-3&lt;br&gt;Quizzes 1-4</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.

After completion of all assignments and midterm exams it appeared that the students were able to apply basic mathematical and engineering techniques learned in the course to solve practical problems related to electrical energy systems. The exams given were designed to be more challenging on purpose and the results were lower than usual, but they gradually improved during the semester, from 58% to 68%, on average.

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 challenging assignments and exams made the students put a lot of effort and take the course very seriously. As a result, some students were not happy with the amount of work and their corresponding results and few of them dropped the class after the first midterm exam. However, the majority of the students gained understanding of the basic concepts and applications, and further developed their problem solving skills as shown with the progress on the exams. At the end, after concluding the grades, several students confessed that while the course seemed difficult they appreciated the improvements they sensed in their overall academic abilities.

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.

As already stated in previous reports, the course material is intense, especially the rotating machinery part. If it is to be covered properly within a reduced amount of time somewhat
different approach is needed. The current textbook does not facilitate this. Simply cutting and
omitting parts of it will yield worse results, with time spent without any appreciable knowledge
 gained.
Due to some logistics problems with organizing this course, the classes were taught at
two consecutive days early in the morning. This did not turn to be good neither for the
students nor for the instructor and should be avoided in the future.

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.