Course Outcomes Guide (COG)

Course Title: EGR 208 Systems and Circuits **Date: May 9, 2016**

Course Team: Ed Sigler

Expected Learning Outcomes

1. Apply knowledge of mathematics, science, and engineering.
2. Apply calculus and differential equation techniques to circuit analysis
3. Identify, formulate and solve basic resistive and RLC circuit problems.
4. Use the techniques, skills, and modern engineering tools necessary for successful practice.
5. Design and conduct experiments and interpret analysis results

Assessment

The assessment for the course common mid-term and final exams administered to all sections of EGR 208. The problem types and complexity are maintained as constant as possible across semesters to track per class variations. Students are assessed on the following capabilities:

1. Analysis of resistive networks
2. Computation of Thevenin and Norton equivalent circuits
3. Analysis of circuits with operational amplifiers
4. Analysis of circuits with one or two energy storage devices and compute complete response
5. Analysis of resistive and active component networks and determine frequency response
6. Computation of AC circuits and determine frequency response
7. Determination of 1st and 2nd order filter responses
8. Analysis of Transformers
9. Analysis of low-pass, high-pass and band-pass filters and determining frequency response.
10. Laboratory experiments in resistive, LC, RLC, operation amplifiers transformers and filter networks.

Validation

Learning outcomes are assessed through homework problems, midterm exams, and the final exam. Common questions for each exam are given to each section of the course. Data collected from these exams will be used to identify areas of weakness and to adjust instruction accordingly.

Results

EGR 208 began as a seminar course. The first lecture course was conducted Fall 2015.

Major Findings

Fall 2015: Additional instruction is needed for application of the conservation of momentum to applied problems. Further, applications of Newton's 2nd Law with acceleration need to be stressed. These findings will be addressed though additional instruction, in-class worked examples and additional worked examples via Moodle.

Follow-up

The course will be adjusted to reflect the degree of difficulty for material. Resistive network coverage will be shortened to allow for deeper coverage of RCL circuit response, phasors, transformers and filter responses.

Budget Justification

No additional budget is required for this class.

Course: EGR 204 **SLOA Data** **Faculty Team: E. Sigler**

	SU 2015	FA 2015	SP 2016	FA 2016	SP 2017	SU 2017	FA 2017	SP 2018	SU 2018	FA 2019	SP 2019
# Active students	N/A	6	N/A								
%W		0									
*# walk-away Fs No final exam/grade = F		2									
% Success (A,B,C)		66.7%									
Common Comprehensive Final Exam Score Average		79.3%									
Mean course grade		2.33									
Item Analysis **Weakest Content Areas**											

*% Walk-away Fs = Did not take the final exam and received a grade of F.

** SA 2015 was class of 6 students