EE 410: Advanced Analog Design
Syllabus

Fall 2017
Room: KC 137
Days: MWF
Time: 2:00-2:50 P.M.

Course Web Site: csserver.evansville.edu/~richardson

Instructor: Dr. Tony Richardson
Office: KC261
Phone: 488-2250
Email: richardson@evansville.edu

Catalog Description: EE 410 Analog Circuit Synthesis (3) Lecture/project covers analysis and design of active circuits. Major topics include feedback, instrumentation amplifiers, active filter design, non-linear circuits, signal generators, and voltage regulation circuits. Prerequisites: Electrical Engineering 310, 343.

Prerequisite: EE 310 Linear Systems Theory


Software:
(1) LTspice IV Circuit Simulator
(2) MATLAB or Octave numerical analysis software.

Grading: There will be three exams during the course. The third exam will be given during the final exam period, it is not a comprehensive exam. There will be approximately six project assignments. Homework assignments will be given on an approximately weekly basis.

<table>
<thead>
<tr>
<th>Item</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Three Exams</td>
<td>60%</td>
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<tr>
<td>Projects</td>
<td>25%</td>
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<tr>
<td>Homework</td>
<td>15%</td>
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Class Policies: Students are expected to abide by the Academic Honor Code. No aid should be given or requested on any examination. Students may collaborate on homework (in fact, this is encouraged), but each student must submit their own work. Each student is expected to be able to recreate any homework solutions submitted.

Credit Hour Policy: This course meets the federal requirements of 15 in-class hours plus an expected 30 hours of out-of-class work per credit hour.

Disability Policy: It is the policy and practice of the University of Evansville to make reasonable accommodations for students with properly documented disabilities. Students should contact the Office of Counseling and Health Education at 488-2663 to seek services or accommodations for disabilities. Written notification to faculty from the Office of Counseling and Health Education is required for academic accommodations.

Class Communication: To receive notifications (class reminders, assignment hints and corrections, answers to exam questions, etc) from the instructor related to this course do one (or both) of the following: (1) text @ue-ee410 to 81010 (or 812-301-1469) to receive notifications by text, (2) send email (empty subject and body are ok) to ue-ee410@mail.remind.com to receive notifications by email. Alternatively, browse to remind.com/join/ue-ee410 to join OR install the Remind app or your smart phone/pad (Apple, Android) to join and receive notifications. To receive more general notifications from Dr. Richardson (class cancellations, departmental event reminders, winning lottery numbers, etc) please also text @ue-rich to 81010 (or 812-301-1469) or send email to ue-rich@mail.remind.com. Note that I remove all participants from all of my Remind classes at the end of the every semester, so you will need to rejoin the ue-rich class even if you have previously been a member.

Topics:
1) Operational Amplifier Characteristics
2) Bilinear Circuits
3) Second Order Circuits
4) Design of Circuits with Desired System Response
5) Butterworth Filter Design
6) Chebyshev Filter Design
7) Inverse Chebyshev Filter Design
8) Frequency Transformations
9) Time-Delay Filter Design
10) Design of Equalization Filters