ENEE 610 - Fall 2018
Course Description

1. Course: ENEE 610, Electrical Network Theory
2. Time: TuTh 3:30 – 4:45
3. Place: Room AJC 2119
4. Instructor: R. W. Newcomb

   Office: AVWII-1347; MicroSystemss Lab: AVW1349; MSLab
   Phones: Office: (301) 405-3662   Home: (301) 622-0177 (before 9:30pm)
   Office Hours: Tu 2:00 – 3:00
   email address: newcomb@eng.umd.edu

5. GTA: none assigned
6. Prerequisite: Graduate standing in EE or consent of instructor
7. Textbook Recommended: B. Peikari, "Fundamentals of Network Analysis and Synthesis," reprint Edition: web address www.jaicobooks.com postal address: Jaico Publishing House, 121 M. G. Road, Mumbai 23, India. The editor R.H. Sharma can be reached at email Jaicopub@vsnl.com.. [some still available from the author at "Peikari, Behrouz" bxp@engr.smu.edu; may be in bookstore].

   Recommended Programs: Spice; any version of PSpice, MATHCAD and/or MATLAB.
8. References:
   a) M. Hasler and J. Neirynck, Nonlinear Circuits, Artech House, Norwood, MA, 1986.
   b) Journal Articles from: IEEE Transactions on Circuits and Systems, CSSP Journal; ISCAS
      Proceedings, Electronics Letters, IEEE Journal of Solid State Circuits, etc…
   c) Appendices of A. S. Sedra & K. C. Smith, "Microelectronic Circuits," Oxford U. Press, New York.
9. Course Description:

   This course covers the theory of electrical networks with an emphasis upon computer aided design and advanced analog circuit theory aspects including synthesis. Treatment is from the abstract to the concrete and includes computer aided circuit design, especially for the use of PCs. Students are expected to get a good general knowledge of advanced network theory and synthesis as well as the experience of an in depth circuit theory study. Course web page with lecture notes and possible files of interest:

   http://www.ece.umd.edu/~newcomb/courses/fall2018/610/ENEE610_fall2018.html
10. Course Operation:

    Lectures and discussions will be given at the class period, including computer demonstrations. The student is to become an expert on a paper from the literature in the field of electrical network theory. For this and depending upon class size, two student presentations are planned, one to give the background theory, and the other giving a computer aided design based upon the theory of the paper chosen. A formal engineering paper summarizing work based on the journal paper and its background and related information is then to be submitted at the end of the course. Every student will be a commentator on another student's paper and presentations. The student should work problems from the textbook or similar source or make up appropriate ones. To record this, a notebook should be kept, with a table of contents indexing it and dating the work as done, showing the examples worked, details of theorems proven, etc., along with other materials studied for the course.

    Use of PSpice (or/and Unix Spice or any other circuit analysis program) is encouraged [version 8 disks are on the web at http://www.ece.umd.edu/~newcomb/spice_dl.htm]. Disks of their latest evaluation version may still be obtained from Cadence at http://www.cadencepcb.com/products/downloads/default.asp. The PCs of the Jasmine Lab are available for use as are the computers of Rooms AVW 1442. PSpice can now be accessed via EIT.umd.edu/vcl. VLSI fabrications via MOSIS of designs are possible - see the instructor for details.
11. Grading:
    Grading will be based roughly on the following:
       20% = homework and notebook
       10% = class presentations and participation including commentator activities
       45% = final report
       25% = final [Tu 12/18 /18 in classroom 10:30-12:30]