

EE 4474
Syllabus – Fall 2018

Catalog Description: **EE 4474 Advanced Circuit Theory 3 credits.** Methods of analog electrical circuit analysis and synthesis. Topics include signal flow graphs, multi-port networks, simulation techniques, and topological methods for formulation of network equations. PREREQ: EE 3340. D

Prerequisites by Topic:

Knowledge of basic circuit analysis techniques, including phasor analysis.
Knowledge of basic calculus and numerical methods.

Class Meetings: 1:00PM – 2:15PM Tuesday and Thursday

Classroom: REND 104

Instructor: Dr. R. E. Stuffle, Professor, Department of Electrical Engineering.

Office Location: LEL Rm. 216

Office Hours: I do not plan to schedule formal office hours, but have an open-door policy instead. When not in class or attending a meeting, I am usually in my office from 8:00AM to 5:00PM on Monday through Thursday (lunch hour excepted). Fridays vary depending on my research and service activities. If you want to be sure to find me in my office, please make an appointment in advance.

Office Telephone: (208) 282-3950

E-mail: **gene.stuffle@isu.edu** I check my e-mail once or twice most evenings. If you send me a message before 9:00PM on a weekday, I will almost always answer it prior to retiring that evening. Weekends and holidays are more of a hit-and-miss situation, although I do occasionally check for messages even then.

Assignments: All assignments will be made available through the class web site (**<http://www.stuffle.net>**). Other resource materials will be available at this site also.

Copies of all handout materials, and solutions to selected current homework and exam problems, will be posted at the class web site. These solutions will normally be made available on the same day the graded papers are returned to you.

Class Participation: You should feel free to ask questions at any time during the class period, and I encourage you to do so. If something is unclear to you, it is probably not clear to some of your classmates, and I should be made aware of that fact. You will also be expected to voluntarily contribute to classroom

discussions and respond to questions posed as part of the lecture.

Attendance: I do not take attendance, but you will be held responsible for all material presented in class or assigned for out-of-class study.

Schedule: A tentative schedule is available separately.

Exams: There will be two take-home exams, in addition to the Final Exam.

Homework: As you will see below, homework will determine a significant portion of your grade in this class. Late assignments will *not* be accepted, and no make-up assignments will be given. If you know you're going to be absent or out of town, ask for the assignment ahead of time. If you turn it in early, you won't be penalized; if you turn it in late, it won't count.

Also note that you are expected to format your homework papers neatly. It is expected that you will use standard $8\frac{1}{2}'' \times 11''$ paper (*not* $8'' \times 10''$, and *not* paper that has been torn out of a spiral-bound notebook), and write on only one side of the paper. Problems and solutions should be submitted in order, and must be organized so that they are clear and easy to follow. Those which are more than $\frac{1}{2}$ page in length should begin on a new sheet of paper.

Working together on homework assignments is acceptable, and permitted, so long as the solutions you submit are individually-prepared and do not appear to be virtual "carbon-copies" of others' work (regardless of who the original author is). Always check your work! Correct answers are important, and arithmetic errors are unacceptable at this level.

Note that homework assignments will likely not have equal weight, as some will require significantly more work than others.

Grading Policy: Course grades will be based on your overall score as compared to the 700 points possible:

Exams (2 @ 100 points possible on each):	200 max.
Homework (score will be adjusted to 300-point equivalent):	300 max.
Final Exam	<u>200</u> max.
Total Points Possible:	700

Your final course grade will be determined as follows:

655 - 700 points:	A
631 - 654 points:	A-
608 - 630 points:	B+
585 - 607 points:	B
561 - 584 points:	B-
538 - 560 points:	C+
515 - 537 points:	C
491 - 514 points:	C-

468 - 490 points:	D+
445 - 467 points:	D
421 - 444 points:	D-
0 - 420 points:	F

There will be *no curve*. Grades are based on raw point totals as described above. For example, if your hour exam scores are 80 and 91, your homework score is 336 out of a possible 420, and your score on the Final Exam is 154, your grade would be determined as follows:

Hour-Exams: [80 + 91]	171
Homework: $\left[\frac{336}{420} \times 300 \right]$	240
Final Exam	<u>154</u>
Total:	565

This total falls in the "B-" range.

Note that failure to do the homework means your maximum possible final score for the class is 400 points, which will result in an F for the overall class grade, even with perfect scores on all of the exams. There will be no way to remedy this situation after the fact.

Other Considerations:

MATLAB (or Octave), PSpice (or LTspice), and SNAP are important software tools for this course. If you do not have access to a PC and your own copy of the software, you will need to use the College of Engineering Technical Computing and CAD Laboratory (Room LEL 234) in order to work on some homework assignments and projects. Please make sure you have an appropriate account.