Electrical Engineering (ELEG)

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Degrees Conferred:
M.S.E.E. (ELEG)
M.S.E., Ph.D. in Engineering (ENGR) (See Engineering)

Primary Areas of Faculty Research: Computer-aided design (CAD); computer architecture and microprocessors; control systems and motion control; design, modeling, and testing of analog, digital, and mixed signal circuits; digital signal processing and image processing; electronic packaging, sensors, smart materials and structures and micro-electro mechanical (MEMs) systems; embedded control systems; microelectronics, including solid state physics, processing, integrated circuit design, solar cells, and semiconductor nanostructures; semiconductor materials for optoelectronic applications; microwave design; microwave imaging; neural networks and pattern recognition; neuroelectronics and neurosurgery; power electronics, including design of motors and generators, motor controls, and power distribution; radar and computational electromagnetics; sensor networks; telecommunications, including wireless communications and computer networking.

Requirements for Graduate Degrees: In addition to the requirements of the Graduate School and the College of Engineering, the following departmental requirements must be satisfied by candidates for advanced degrees in electrical engineering:

1. Candidates for the Master of Science degree who present a thesis are required to complete a minimum of 24 semester hours of course work and six semester hours of thesis.

2. Candidates for the Master of Science degree who do not present a thesis are required to complete a minimum of 30 semester hours of course work.

3. Course work presented for the degree of Master of Science must include ELEG 5801 and a minimum of 12 semester hours at the 5000- or 6000-level in electrical engineering. At least 15 (21 for non-thesis option) hours of the student’s graduate course work must be ELEG courses. No more than six hours of ELEG 588V may be presented for degree credit.

4. Students who complete a B.S. degree in Electrical Engineering at the University of Arkansas, Fayetteville, with a GPA of 3.5 or greater may count toward the M.S. degree up to 6 hours of ELEG graduate-level course work completed as an undergraduate student.

5. The program of study for the Ph.D. degree must satisfy the following:

A. If the student does not have an M.S. degree, a minimum of 42 hours of course work (excluding dissertation hours) beyond the bachelor’s degree must be presented in the Ph.D. program. If the student has an M.S. degree, a minimum of 42 hours of course work (excluding thesis and dissertation hours) must be presented in the combined M.S. and Ph.D. programs.

B. The course work specified in item (a) must include a minimum of 30 hours of course work at the 5000 and 6000 level, and at least 24 of these 5000- and 6000-level hours must be in electrical engineering.

C. The course work specified in item (a) must include GRSD 5003 or MEPH 5383.

D. The doctoral program must include at least 72 hours of course work and dissertation hours. A maximum of six of these hours may be thesis hours. The remaining hours that are not course work must be dissertation. The Graduate School requires a minimum of 18 hours of dissertation for graduation.

E. It is emphasized that the course work specified above represents minimums, and many students’ programs will include more than this minimum, particularly if the student has an M.S.E.E. degree from a school that is not a recognized graduate school in the United States.

6. Candidates for the M.S.E.E. degree must take an M.S. Readiness Assessment exam during their first semester of graduate work. This exam is administered by the student’s major professor and advisory committee, and is designed to assess the student’s undergraduate preparation for his or her graduate work. The student may be required to take whatever undergraduate courses are deemed necessary in addition to the graduate courses specified in items 1-3.

7. The M.S.E.E. degree includes a distance education option for which students complete most or all of their course work using distance education courses. The use of this option is subject to approval by
the student’s major professor, and to the availability of sufficient distance education courses in the student’s specialty areas to enable completion of the M.S.E.E.

8. The M.S.E.E. degree will allow transfer of up to nine credit hours of graduate-level coursework from universities with which the University of Arkansas has a “1+1” M.S.E.E. exchange program. Each course transferred must be graduate level and must be approved for transfer by the Electrical Engineering Graduate Committee. The transferred courses will not count toward the M.S.E.E. requirement for 5000 or 6000 level ELEG courses.

9. Other conditions as stipulated in departmental guidelines for master’s and doctoral degrees.