

ECE 4180 / 6180	Power System Analysis	Study of power system planning and operational problems. Topics include load flow, economic dispatch, fault studies, transient stability, and control of problems. System modeling and computer solutions are emphasized through class projects. Students are expected to have completed courses comparable to ECE 3600 and ECE 3800 before enrolling in this course.
ECE 4490 / 6490	Computer Network Security	Hands-on practicum in the administration and security of modern network service emphasizing intrusion prevention techniques, detection, and recovery. Preq: Graduate standing in Computer Engineering or Electrical Engineering. Coreq: ECE 6491.
ECE 4491 / 6491	Computer Network Security Laboratory	Non-credit laboratory to accompany ECE 6490. Coreq: ECE 6490.
ECE 6610	Fundamentals of Solar Energy	Introduces solar energy conversion systems. Topics include environmental benefits of solar energy, solar thermal systems, concentration solar power, photovoltaic (PV) cell design and manufacturing, sizing of PV system, hybrid photovoltaic/thermal systems, energy storage, and urban/rural applications. Students are expected to have completed a course comparable to ECE 3200 before enrolling in this course.
ECE 6670	Introduction to Digital Signal Processing	Introduction to characteristics, design, and applications of discrete time systems; design of digital filters; introduction to the Fast Fourier Transform (FFT); LSI hardware for signal processing applications. Students are expected to have completed a course comparable to ECE 3300 before enrolling in this course.
ECE 6780	General Purpose Computation on Graphical Processing Units	Instruction in the design and implementation of highly parallel, GPU-based solutions to computationally intensive problems from a variety of disciplines. The OpenCL language with inter-operable OpenGL components is used. Applications to models of physical systems are discussed in detail. Students are expected to have completed coursework in data structures, calculus, and linear algebra before enrolling in this course. May also be offered as CPSC 6780.
ECE 8010	Analysis of Linear Systems	Foundations of linear system analysis; matrix algebra, linear graph theory and operational mathematics applied to formulation and solution of system equations in time and frequency domains.
ECE 8070	Computer Methods for Power Systems Analysis	Electric power system operation; development of models of transmission line components and networks; computer methods for solving linear and nonlinear systems of network equations; operating problems in load flow, scheduling and economic dispatch. Students are expected to have completed a course comparable to ECE 4180 before enrolling in this course.
ECE 8910	Master's Thesis Research	Master's Thesis Research
ECE 8930	Selected Topics in Electrical and Computer Engineering	Topics not covered in other courses; current literature and results of current research. Topics vary from year to year in keeping with developments in the field. May be repeated for credit.
ECE 9910	Doctoral Dissertation Research	Doctoral Dissertation Research