121 Fundamentals of Electricity
Fall. 4(3-2) SA: AE 071
Application of Ohm's law, Kirchoff's laws, series and parallel circuits, inductive and capacitive reactance, power factor, practical single and three-phase electrical systems, electromagnetic induction, transformers, environmental constraints in power use and production.

122 Alternating and Direct Current Machines
Spring. 3(3-3) P: (TSM 121 or concurrently) or MTH 103 or approval of department SA: AE 084
Types and characteristics of electric motors, connecting, reversing and servicing of AC and DC motors and drives, stepper motors, variable frequency drives for induction motors. Offered first ten weeks of semester.

223 Fundamentals of Automation and Controls
Fall. 4(3-2) P: (TSM 121 or concurrently) or MTH 103 or approval of department SA: AE 083
On-off controllers for electric actuators, installation according to code, ladder-logic, programmable logic controllers, installation and programming, interfacing to a computer.

224 Fundamentals of Digital Systems
Spring. 3(3-0) P: (TSM 121 or concurrently) or MTH 103 or approval of department Not open to students with credit in ECE 230.
Electrical components in transient and steady state operation, thermo-electric, piezoelectric, magnetic, resistive and capacitive sensors, electro-optical devices, digital circuits, data acquisition.

251 Information Technology in Agricultural Systems
Fall. 3(2-2) RB: Basic computer science course
Applications and trends in information systems, evaluation and use of computer systems, peripherals, networks, management decision support software, presentation systems, and communication systems.

341 Power and Machinery Systems
Fall. 3(2-2) P: MTH 103 or approval of department
Principles, performance, operation, and management of agricultural machine systems and tractors.

343 Principles of Precision Agriculture
Fall. 3(2-2) P: MTH 103 or MTH 114 or MTH 116 or MTH 124 or MTH 132
Global positioning systems (GPS), yield monitors, and computer software, analysis and interpretation of field maps, variable-rate application, economics of precision agriculture.