Acquisition and Development of Language and Literacy
Spring. 3(3-0) Interepartmental with Counseling, Educational Psychology and Special Education. R: Open only to Ph.D. students in the College of Education. Literacy development including oral language base from birth through adulthood. Oral and written language development and learning in and out of school. Socio-cultural contexts in relationship to schooling. Cross-cultural and international literacy development. Schooling, global economy, world health, and post-colonialism.

Language, Literacy, and Educational Policy
Fall of odd years. 3(3-0) Policy in relation to framing curriculum. The linguistic nature of pupil assessment. Gatekeeping functions of schools.

The Craft of Policy Analysis in Education
Spring of odd years. 3(3-0) Framing problems, devising alternative solutions, and predicting impacts.

Curriculum and Pedagogy in Teacher Education
Spring of even years. 3(3-0) Teacher learning opportunities at the preservice, induction, and inservice levels. Intended and enacted curriculum, sources of pedagogy, and their impact on teachers' knowledge, skills, and attitudes.

Teacher Learning in School Settings
Fall of odd years. 3(3-0) Research about school-based learning by prospective, beginning, and experienced teachers. Observation, conversation, writing, and classroom research as tools for improving teaching.

Policy Perspectives on Teaching and Teacher Education
Fall of even years. 3(3-0) Policy issues such as teacher accountability, teacher knowledge, and political influence.

Seminar in Curriculum, Teaching, and Educational Policy
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 10 credits in all enrollments for this course. Intensive study in an area of curriculum, teaching, and learning; educational policy and social analysis; or teacher education and teacher learning.

Independent Study
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 10 credits in all enrollments for this course. R: Open only to doctoral students. Supervised individual study in an area of curriculum, teaching, and educational policy.

Special Topics in Curriculum, Teaching, and Educational Policy
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 9 credits in all enrollments for this course.

Special Topics in Science Education
Spring of even years. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course.

Laboratory and Field Experience in Curriculum, Teaching, and Educational Policy
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to doctoral students. Approval of department. Supervised practica, observations, and internships in an area of educational policy and social analysis, teacher education and teacher learning, and curriculum, teaching and learning.

Research Practicum in Curriculum, Teaching, and Educational Policy
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 3 credits in all enrollments for this course. R: Open only to doctoral students in the College of Education. Approval of department. Supervised research practicum. Design, execution, analysis, presentation, critique, and revision of research projects.

Doctoral Dissertation
Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 100 credits in all enrollments for this course. R: Open only to doctoral students in the Department of Teacher Education. Doctoral dissertation research.

Fundamentals of Electricity
Fall. 3(2-2) P: (TSM 121) Significant change in credit requirements. Offered first ten weeks of semester.

Power and Control Hydraulics

Principles of Automation and Controls
Fall. 4(3-2) P: (TSM 121) On-off controllers for electric actuators. Installation according to code. Ladder-logic. Programmable logic controllers. Installation and programming. Interfacing to a computer.

Digital Systems, Sensors and Measurements
Spring. 3(3-3) P: (TSM 121 or PHY 184) Not open to students with credit in ECE 230.


Team project in technology systems management.


Information Technology in Agricultural Systems
Fall. 3(2-2) P: (CSE101) Applications and trends in information systems. Evaluation and use of computer systems, peripherals, networks, presentation systems, and communication systems.

Technology Systems Management - Capstone I (W)
Fall. 3(3-0) P: (TSM 341 and TSM 342 and TSM 351 and CEM 332) and completion of Tier I writing requirement. R: Open only to seniors.

Team project in technology systems management. Field trips required.