

Descriptions—Surgery of Courses

620. Advanced Surgery Clerkship
Fall, Spring, Summer. 6 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. P: (SUR 608 And MED 608) R: Open only to graduate-professional students in the College of Human Medicine.
Advanced experience in critical care, trauma, and nutrition. Students must successfully complete several technical bedside procedures with more responsibility for patient care than in SUR 608.

621. Surgical Nutritional Care Clerkship
Fall, Spring, Summer. 6 credits. A student may earn a maximum of 18 credits in all enrollments for this course. P: SUR 608. R: Open only to graduate-professional students in College of Human Medicine.
Clinical experience with nutrition team dealing with surgical and medical patients requiring therapeutic nutrition as a result of metabolic derangement and nutritional deficiencies.

633. Extended Clinical Experience
Fall, Spring, Summer. 6(6-0) P: (SUR 608)
Based in community hospitals and ambulatory sites, this is a 4 week clinical experience emphasizing interviewing skills, history, physical exam, problem solving and therapy.

637. Core Competencies III
Spring, Summer. 2 credits. A student may earn a maximum of 6 credits in all enrollments for this course. Interdepartmental with Human Medicine; Family Practice; Medicine; Obstetrics, Gynecology and Reproductive Biology; and Pediatrics and Human Development. Administered by Human Medicine. P: FMP 602. R: Open only to graduate-professional students in College of Human Medicine.
A weekly seminar addressing core knowledge and skills from an interdisciplinary perspective.

801. Shock and Metabolism
Fall. 4(4-0) R: Open only to M.S. students in Surgery.
Results of prolonged reduction in tissue perfusion on tissue metabolism, structure, and function at the systemic, cellular and subcellular levels. Pharmacologic interventions useful in volume resuscitation.

802. Clinical Surgical Anatomy
Spring. 4(2-4) Interdepartmental with Anatomy. R: Open only to Master's students in Surgery.
Review of surgical anatomy. Detailed anatomical information through lecture and dissection sessions. Clinical interpretation of anatomy and surgical approaches.

803. Enteral and Parenteral Nutrition
Fall, Summer. 3(3-0) R: Open only to M.S. students in Surgery.
Identification of individuals requiring nutritional support. Nutritional requirements in diseases. Delivery of total parenteral and enteral nutrition. Special problems.

804. Research Design and Quantitative Techniques for Surgical Residents
Spring. 3(3-0) R: Open only to students in master's degree program in Surgery.
Recognition and differentiation between experimental designs. Identification of strengths and weaknesses of a manuscript. Recognition and definition of statistical terms and common inferential techniques used in surgical research. Use of computer software in research.

890. Seminars in Research
Fall, Spring, Summer. 1 credit. A student may earn a maximum of 5 credits in all enrollments for this course. R: Open only to M.S. students in Surgery.
Philosophy and methods of research. Preparation and presentation of research data in research reports. Practical applications.

899. Master's Thesis Research
Fall, Spring, Summer. 3 to 4 credits. A student may earn a maximum of 10 credits in all enrollments for this course. P: SUR 801, SUR 802, SUR 803, SUR 804. R: Open only to M.S. students in Surgery. Approval of department.

SYSTEMS SCIENCE SYS

Department of Electrical and Computer Engineering College of Engineering

410. Systems Methodology
Spring. 2(1-3) P: Completion of Tier I writing requirement. R: Open only to seniors in the Engineering Arts major.
Systems analysis and design. Needs analysis, system identification, graphical models. Team project required.

TEACHER EDUCATION TE

Department of Teacher Education College of Education

150. Reflections on Learning
Fall, Spring, Summer. 3(3-0) Interdepartmental with Counseling, Educational Psychology and Special Education.
Students' experiences as learners in comparison to psychological, sociological, and anthropological theories and assumptions about learning and teaching in and out of school.

240. Diverse Learners in Multicultural Perspective
Fall, Spring, Summer. 3(2-2) Interdepartmental with Counseling, Educational Psychology and Special Education. Administered by Counseling, Educational Psychology and Special Education. Not open to students with credit in TE 250.
Communicative, linguistic, physical, sensory, behavioral, affective, and cognitive differences in learning in multicultural classrooms. Factors that mediate access to knowledge.

250. Human Diversity, Power, and Opportunity in Social Institutions
Fall, Spring, Summer. 3(3-0)
Comparative study of schools and other social institutions. Social construction and maintenance of diversity and inequality. Political, social and economic consequences for individuals and groups.

301. Learners and Learning in Context (W)
Spring. 4(3-4) P: Completion of Tier I writing requirement. (TE 150) And (TE 250 Or CEP 240) R: Not open to freshmen or sophomores. Open only to students admitted to the teacher certification program.
Role of social context and sociocultural background in learning. Natural and socially constructed differences among learners. Relationship among subject-specific knowledge, teaching and learning that subject, and the institutional and communal context. Multiple literacies.

401. Teaching of Subject Matter to Diverse Learners (W)
Fall. 5(3-8) P: Completion of Tier I writing requirement. TE 301. R: Not open to freshmen or sophomores. Open only to students admitted to the teacher certification program.
Examining teaching as enabling diverse learners to inquire into and construct subject-specific meanings. Adapting subject matter to learner diversity. Exploring multiple ways diverse learners make sense of the curriculum.

402. Crafting Teaching Practice (W)
Spring. 6(4-8) P: Completion of Tier I writing requirement. (TE 401) R: Not open to freshmen or sophomores. Open only to students admitted to the teacher certification program.
Gathering data on learners to inform content and instructional decisions. Deciding what should be taught for specific disciplines. Teachers' multiple roles and their professional, intellectual, socio-political, and communal responsibilities.

405. Feminist Analyses of Education in the United States
Fall of odd years. 3(3-0) Interdepartmental with Women's Studies. Administered by Women's Studies. P: (WS 201 Or WS 202 Or WS 203) R: Not open to freshmen or sophomores.
Feminist perspectives on the role of gender in structuring educational experiences in elementary and secondary school.

490. Independent Study in Teacher Education
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Not open to freshmen or sophomores. Open only to students admitted to the teacher certification program. Approval of department.
Supervised individual or small group study of the practice of teaching.

494. Field Experience in Teacher Education
Fall, Spring. 1 to 10 credits. A student may earn a maximum of 10 credits in all enrollments for this course. R: Approval of department.
Supervised practice and/or observations in educational settings.

495. Directed Teaching

Fall, Spring. 9 credits. Interdepartmental with Music. Administered by Music. P: (MUS 260 and MUS 335 and MUS 339 and TE 250) and (TE 301 and MUS 457 and MUS 458) or (MUS 467 and MUS 468) R: Open only to seniors in the Instrumental Music Education or the Stringed Instrument Music Education or the Vocal-General Music Education major.

Supervised Music teaching experience in Schools, on-campus seminar required.

501. Internship in Teaching Diverse Learners I

Fall. 6(2-24) P: TE 402. R: Open only to students seeking teacher certification.

Directed and evaluated internship in heterogeneous classrooms. Teaching worthwhile content to students with varied learning needs. Theoretical and field-based explorations of common teaching dilemmas.

502. Internship in Teaching Diverse Learners II

Spring. 6(2-24) P: TE 501. R: Open only to students admitted to the Teacher Certification Internship-Year Studies Program. Not open to students with credit in CEP 502A or CEP 502B or CEP 502C or CEP 502D. C: TE 803 concurrently, TE 804 concurrently.

Continuing internship in heterogeneous classrooms at selected schools. Increased emphasis on independent teaching. Maintaining classroom communities that ensure equitable access to important knowledge and skills. Assessing academic and social outcomes.

801. Professional Roles and Teaching Practice I

Fall. 3(2-3) P: TE 402. R: Open only to students admitted to the Teacher Certification Internship-Year Studies Program. Not open to students with credit in CEP 801A. C: TE 501 concurrently, TE 802 concurrently.

Teachers' professional and ethical responsibilities. Connections of schools to other social agencies. Relations of teachers to colleagues, families, other social service providers, and community leaders. Roles in school governance.

802. Reflection and Inquiry in Teaching Practice I

Fall. 3(2-3) P: TE 402. R: Open only to students admitted to the Teacher Certification Internship-Year Studies Program. Not open to students with credit in CEP 802A or CEP 802C or CEP 802D. C: TE 801 concurrently, TE 501 concurrently.

Qualitative and quantitative research methods on teaching and learning. Criteria for judging the validity and applicability of research-based knowledge. Framing educational problems worthy of inquiry. Designing and assessing studies of teaching practice.

803. Professional Roles and Teaching Practice II

Spring. 3(2-3) P: TE 801. R: Open only to students admitted to the Teacher Certification Internship-Year Studies Program. Not open to students with credit in CEP 803A or CEP 803C or CEP 803D. C: TE 502 concurrently, TE 804 concurrently.

School-agency alliances for fostering student learning. Strategies for working with families and community groups to improve responsiveness of the school curriculum to student needs. Child advocacy in the school and community.

804. Reflection and Inquiry in Teaching Practice II

Spring. 3(2-3) P: TE 802. R: Open only to students admitted to the Teacher Certification Internship-Year Studies Program. Not open to students with credit in CEP 804A or CEP 804C or CEP 804D. C: TE 502 concurrently, TE 803 concurrently.

Collecting, analyzing, and interpreting data on teaching, learning, and educational policy. Dilemmas surrounding research on practice. Appraising and reporting results of inquiry.

805. Learning Mathematics

Fall. 3(3-0) Interdepartmental with Counseling, Educational Psychology and Special Education. Administered by Counseling, Educational Psychology and Special Education.

Learning and development of mathematical thinking and knowledge in educational settings from perspectives of psychology, anthropology, mathematics, and other disciplines. Implications for teaching.

807. Professional Development and Inquiry

Fall, Summer. 3(3-0) R: Open only to masters students in Curriculum and Teaching.

Teacher-centered inquiry through autobiography and documentation of self as learner. Relationship of personal research to classroom-based research. Application to practice.

808. Inquiry into Classroom Teaching and Learning

Fall, Summer. 3(3-0) R: Open only to masters students in Curriculum and Teaching.

Alternative forms of classroom inquiry to improve teaching and learning of subject matter. Social context of teaching and learning, pedagogy, and teaching effects. Social and academic outcomes for diverse learners.

810. History of American Education

Spring of odd years. 3(3-0)

Social and intellectual history of educational ideals and institutions. Legacies of reform initiatives. Evolution of the education profession.

811. Philosophical Inquiry and Contemporary Issues in Education

Fall, Spring. 3(3-0)

Philosophies of education. Analytic tools used for evaluating current educational goals, practices, issues, and reforms.

812. Sociological Inquiry into Education

Spring of even years. 3(3-0)

Relationships of educational organizations and practices to social structures and institutions.

813. Education, Development and Social Change

Spring of odd years. 3(3-0) Interdepartmental with Educational Administration. Administered by Educational Administration.

Rise of modern systems of education in developed and developing countries. Education, the state, and national development. Colonial heritage, linkages, and globalization of educational development.

815. Comparative Analysis of Educational Practice

Fall of even years. 3(3-0)

Cross-national comparison of educational practices in light of differences in culture, social organization, economic conditions, and historical circumstance. International perspectives on education in the United States. Borrowing and adapting educational practices.

816. Education in Transition

Fall of odd years. 3(3-0)

Comparative analysis of change in educational concepts, policies, and practice.

818. Curriculum In Its Social Context

Fall, Spring. 3(3-0)

Philosophical, social, and historical foundations of curriculum. Issues and practices across subjects, grades, and school settings. Moral consequences of curriculum decisions for teachers and students.

820. Power and Pluralism in School Practice

Spring of odd years. 3(3-0)

Connections between schools and diversity, inequality, and power in society. Genesis and consequences of school policies for diverse learners.

821. Race and Educational Policy in the United States

Spring of even years. 3(3-0)

Educational policy in relation to race in the United States. Efforts to promote equity through racially sensitive curricular and instructional practices.

822. Issues of Culture in Classroom and Curriculum

Fall of odd years. 3(3-0)

Socio-cultural contexts and functions of schooling. Cultural diversity in education. Schools and classrooms as cultural systems. Students' cultural backgrounds in relation to curriculum. Developing effective multicultural curricula for all students.

823. Learning Communities and Equity

Spring. 3(3-0)

Cooperative grouping and heterogeneous learning teams. Impact of learning communities on equity and on school curricula.

825. Diverse Learners and Learning Subject Matter

Summer. 3(3-0)

Multiple perspectives on teaching subject matter to diverse learners. Texts, curricula, and pedagogical approaches. Subject-specific issues related to classroom diversity.

826. Evaluation of Educational Programs and Policies

Spring. 3(3-0) Interdepartmental with Counseling, Educational Psychology and Special Education. Administered by Counseling, Educational Psychology and Special Education. P: CEP 822.

Qualitative and quantitative methods to assess the effectiveness of public policies and resulting educational programs. Theory and practice of program evaluation.

Descriptions—Teacher Education of Courses

- 830. Designing Interdisciplinary Curricula**
Spring of even years. 3(3-0)
Historical and conceptual analyses of ways to design, organize, and integrate curricula across subject areas. Evaluation and application of criteria for planning and teaching interdisciplinary curricula.
- 831. Teaching School Subject Matter with Technology**
Fall, Spring. 3(3-0)
Uses of technologies in teaching subject matter to diverse learners. Critical perspectives on technologies in schools.
- 840. Proseminar I: Historical Bases of Literacy Instruction**
Fall. 3(3-0) R: Open only to graduate students in Literacy Instruction.
Relationships between language processes and schooling.
- 841. Proseminar II: Psychological Bases of Literacy Instruction**
Spring. 3(3-0) P: TE 840. R: Open only to graduate students in Literacy Instruction.
Psychological foundations of literacy instruction, including theories and models of reading and writing. Psychological processes, social and contextual factors, and text features relevant to literacy instruction.
- 842. Advanced Methods of Elementary School Reading**
Fall, Summer. 3(3-0)
Methods and materials for teaching developmental and content area reading in grades K-8.
- 843. Reading, Writing, and Reasoning in Secondary School Subjects**
Spring. 3(3-0)
Knowledge and methodology for teaching language, literacy, and thinking in selected secondary school subjects.
- 844. Classroom Literacy Assessment**
Summer. 3(3-0)
Knowledge and methodology about ongoing and summative types of classroom assessment in oral language, reading, and writing at the elementary and secondary levels.
- 845. Language Diversity and Literacy Instruction**
Fall. 3(3-0) P: One introductory linguistics course.
Acquisition of literacy in schools by language minority students and other learners with diverse backgrounds.
- 847. Methods for Teaching Language Arts**
Fall. 3(3-0)
Methods and materials for teaching listening, speaking, reading, and writing with emphasis on language development across the curriculum.
- 848. Methods of Writing Instruction**
Spring of even years. 3(3-0) P: TE 847.
Rationale and methods for writing instruction from pre-writing through drafting and editing.
- 849. Methods and Materials for Teaching Children's and Adolescent Literature**
Fall of odd years. Summer of even years. 3(3-0)
Evaluation and utilization of various genres and elements of literature with focus on literature for students in grades K-12.
- 850. Critical Reading for Children and Adolescents**
Fall of even years. 3(3-0) P: TE 849.
Teaching and learning of critical and aesthetic responses to literature for K-12 students.
- 851. Literacy for the Young Child in Home and School**
Spring of odd years. 3(3-0) P: TE 849.
Literacy development in children from early infancy through age six, with emphasis on evaluation and utilization of writings for young children.
- 852. Culture, Literacy, and Autobiography**
Fall of odd years. 3(3-0)
Cultural foundations of literacy through autobiography. Individual and cultural identities, ethnicity, literacy, and education in literature and autobiographical sources.
- 855. Teaching School Mathematics**
Fall. 3(3-0) P: Two undergraduate mathematics courses.
Methods, materials, activities, and content important to teaching mathematics. Emphasis on conceptual understanding of mathematical ideas. Implications for lesson development, teaching diverse learners, and evaluating student learning.
- 856. Alternatives in School Mathematics Curriculum**
Spring, Summer. 3(3-0) P: Two undergraduate mathematics courses.
Selection and appraisal of mathematics curricula. Uses of materials in the classroom. Representation of selected mathematical content for diverse learners.
- 857. Teaching and Learning Mathematical Problem Solving**
Spring. 3(3-0) P: Two undergraduate mathematics courses.
Alternative approaches to solving mathematical problems and incorporating problem solving into K-12 teaching. Selection, appraisal, and uses of problems in the classroom. Materials and assessment strategies.
- 860. Practice and Inquiry in Science Education**
Spring. 3(3-0)
Teaching science subjects. Emphasis on learner diversity, learning community, conceptual understanding, subject matter content, and learners' prior knowledge.
- 865. Teaching and Learning K-12 Social Studies**
Fall. 3(3-0)
Purposes for teaching and learning social studies. Developing citizenship, social science reasoning, and content knowledge with diverse learners.
- 866. K-12 Social Studies Curriculum**
Spring of odd years. 3(3-0)
Issues and practices in social studies from historical, philosophical, and epistemological perspectives. Student diversity and the social studies curriculum. Reforms and needed research in social studies education.
- 867. Perspectives in Social Studies: Global Education**
Summer. 3(3-0)
Issues affecting the global community. Educational strategies for developing a global perspective on human relationships and the environment.
- 868. Perspectives in Social Studies: Law-Related Education**
Summer. 3(3-0)
Intellectual, social, and personal premises for law-related education. Strategies for curricular infusion.
- 870. Curriculum Design, Development, and Deliberation in Schools**
Spring. 3(3-0)
Simulation in group curriculum deliberation. Critique of curriculum discourse, process, and product. Teachers' roles in site-based curriculum and staff development.
- 872. Teachers as Teacher Educators**
Spring. 3(3-0)
Experienced teachers' contributions to the professional development of novice teachers. Implications for school change.
- 882. Seminars in Curriculum and Teaching (MTC)**
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 9 credits in all enrollments for this course.
Intensive study of selected topics in curriculum and teaching.
- 883. Seminars in Literacy Instruction (MTC)**
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 9 credits in all enrollments for this course.
Intensive study of selected topics in literacy instruction.
- 890. Independent Study**
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 9 credits in all enrollments for this course.
Supervised individual study in an area of curriculum, teaching, or schooling.
- 891. Special Topics in Teaching, Curriculum, and Schooling**
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 9 credits in all enrollments for this course.
- 891A. Special Topics in Science Education**
Summer. 1 to 4 credits. A student may earn a maximum of 9 credits in all enrollments for this course.

894. Laboratory and Field Experiences in Curriculum, Teaching, and Schooling

Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 9 credits in all enrollments for this course.

Supervised graduate practica, observations, and internships in fields of emphasis in curriculum, teaching, and schooling.

895. Research Ethics

Summer. 1(1-0) Interdepartmental with Kinesiology; Counseling, Educational Psychology and Special Education; Educational Administration; Zoology; Sociology; and Surgery. Administered by Kinesiology. R: Open only to graduate students in the Department of Counseling, Educational Psychology and Special Education or Department of Educational Administration or Department of Kinesiology or Department of Teacher Education.

Identifying and resolving ethical problems in research, including issues related to collegial interactions; authorship, publication, and reviewing practices; data management; ownership of data and intellectual property; conflicts of interest; protection of human and animal subjects; and lab safety and compliance.

SA: PES 895

899. Master's Thesis Research

Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course.

901. Proseminar in Curriculum, Teaching and Educational Policy I

Fall. 3(3-0) R: Open only to doctoral students in Curriculum, Teaching, and Educational Policy.

Two historical episodes related to improving teaching practice, teacher and student learning, curricula, and educational policy. Nature and effects of educational reforms.

902. Proseminar in Curriculum, Teaching, and Educational Policy II

Spring. 3(3-0) P: TE 901. R: Open only to doctoral students in Curriculum, Teaching, and Educational Policy.

Two historical episodes related to improving teaching practice, teacher and student learning, curricula, and educational policy. Nature and effects of educational reforms.

907. Psychological Study of Teaching

Fall of odd years. 3(3-0) Interdepartmental with Counseling, Educational Psychology and Special Education. Administered by Counseling, Educational Psychology and Special Education. R: Open only to Ph.D. students in Education.

Research literature on psychological aspects of teachers and teaching. Topics include teacher's decision-making, learning from experience and developmental changes.

912. Psychology and Pedagogy of Literacy

Fall of even years. 3(3-0) Interdepartmental with Counseling, Educational Psychology and Special Education. Administered by Counseling, Educational Psychology and Special Education. R: Open only to doctoral students in College of Education, College of Arts and Letters, and College of Social Science.

Psychological, historical, and methodological foundations of research and practice in literacy instruction.

913. Psychology and Pedagogy of Mathematics

Fall of odd years. 3(3-0) Interdepartmental with Counseling, Educational Psychology and Special Education. Administered by Counseling, Educational Psychology and Special Education. P: CEP 902. R: Open only to Ph.D. students in College of Education.

Psychological theory and research on the learning of mathematics. Development of mathematical thinking and knowledge in school and other settings.

914. Psychology and Pedagogy of Science

Spring of odd years. 3(3-0) Interdepartmental with Counseling, Educational Psychology and Special Education. Administered by Counseling, Educational Psychology and Special Education. P: CEP 902. R: Open only to Ph.D. students in College of Education.

Psychological and epistemological aspects of learning and teaching science.

915. Language, Literacy and Learning

Spring of even years. 3(3-0) Interdepartmental with Counseling, Educational Psychology and Special Education. Administered by Counseling, Educational Psychology and Special Education. R: Open only to Ph.D. students in Education.

Role of language in mediating cognition, affect, and action in educational contexts. Relationship between oral and written discourse and sociocultural contexts.

916. History of Curriculum and School Subjects

Spring of even years. 3(3-0)

Formation and organization of contemporary U.S. school curricula and school subjects in historical, epistemological, and sociopolitical contexts.

917. Contemporary Theories and Discourses in Education

Fall of even years. 3(3-0)

Logical positivism, interpretive theories, critical theory, feminist theory, poststructuralism and neo-pragmatism. Applications to curriculum, teaching, and educational policy.

918. Disciplinary Knowledge and School Subjects

Spring. 3(3-0)

Cross-disciplinary comparisons of the nature of knowledge, its creation, refutation, and use. Correspondence between disciplinary knowledge and knowledge as represented in schools.

919. Policy Analysis in Education

Fall. 3(3-0)

Conception, generation, and analysis of educational policies. Contexts such as governance levels, national setting, and legislative forms. Uses, limitations, and ethics of policy analysis.

920. Social Analysis of Educational Policy

Spring. 3(3-0)

Social science perspectives on factors outside and inside school systems which shape policy and influence both the nature of policy problems and the form of educational solutions.

921. Learning to Teach

Fall. 3(3-0)

Intellectual, practical, and moral dimensions of teaching and learning to teach. Impact of formal and informal influences on teachers' knowledge, skills, and attitudes.

922. Contexts and Micropolitics of Teacher Education

Fall of odd years. 3(3-0)

Historical and contemporary forms of teacher education in relation to social and institutional contexts. Relation of traditional and innovative programs to basic tensions and issues in the field.

923. Comparative Perspectives on Teaching, Curriculum, and Teacher Education

Spring of odd years. 3(3-0)

Contrasting national responses to universal questions. Links among education and other nation-building institutions. Organization and distribution of knowledge. Organization of, preparation for, and practice of teaching.

924. Philosophy of Education: Ideas and Methods

Spring of even years. 3(3-0)

Selected ideas in education from different philosophical traditions. Issues of method, historical perspectives, and textual analysis.

930. Educational Inquiry

Fall, Spring. 4(4-0) Interdepartmental with Counseling, Educational Psychology and Special Education. Administered by Counseling, Educational Psychology and Special Education.

Alternative approaches to educational research: quantitative, interpretive, and customized. Theoretical assumptions, sources of questions, data collection and analysis, and rhetoric.

931. Qualitative Methods in Educational Research

Fall. 4(4-0) Interdepartmental with Counseling, Educational Psychology and Special Education; and Educational Administration. P: CEP 930. R: Open only to doctoral students. Approval of department.

Multiple traditions of qualitative research in education. Approaches to theory, research questions and design, data collection and analysis, and reporting. Ethical issues. Appraising qualitative research.

Descriptions—Teacher Education of Courses

933. Quantitative Methods in Educational Research

Fall, Spring. 4(4-0) *Interdepartmental with Counseling, Educational Psychology and Special Education. Administered by Counseling, Educational Psychology and Special Education. P: CEP 822 or PES 871 or CEP 930. One introductory research design or statistics course. R: Open only to graduate students in the College of Education or College of Agriculture and Natural Resources or College of Human Ecology.*

Techniques of data analysis and statistical inference used in educational and psychological research. Multiple regression, analysis of variance, and basic principles of experimental design in educational applications.

941. Marginalized Subjects in Curriculum and Teaching

Spring of odd years. 3(3-0)

School subjects, ways of knowing, and people marginalized by omission or inequitable policies and practices in schools. Critical and feminist pedagogy.

942. Economic Analysis in Educational Policy Making

Spring of even years. 3(3-0) *Interdepartmental with Educational Administration. Administered by Educational Administration.*

Economic effects of education. Economic analysis of policy issues in education. Alternative theoretical perspectives. Applications to the United States and other countries.

946. Current Issues in Literacy Research and Instruction

Spring of odd years. 3(3-0)

Current research trends in the psychological, social, and political dimensions of literacy and literacy instruction.

950. Mathematical Ways of Knowing

Fall of even years. 3(3-0) P: Two undergraduate mathematics courses.

Philosophical, cultural, political, societal, psychological, and historical perspectives on knowing in mathematics as a discipline.

955. Contemporary Issues in Science Curriculum and Teaching

Fall. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. Epistemological, social, psychological, and historical foundations of science education in relation to contemporary issues and problems of science curriculum, teaching, and policy.

960. 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.

965. The Craft of Policy Analysis in Education

Spring of odd years. 3(3-0)

Framing problems, devising alternative solutions, and predicting impacts.

970. 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.

971. 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.

982. Seminar in Curriculum, Teaching, and Educational Policy (MTC)

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.

990. 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.

991. 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.

991A. Special Topics in Science Education

Spring of odd years. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course.

994. 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 curriculum, teaching and learning; educational policy and social analysis; or teacher education and teacher learning.

995. Research Practicum in Curriculum, Teaching, and Educational Policy

Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 4 credits in all enrollments for this course. R: Open only to doctoral students. Approval of department.

Supervised research practicum. Design, execution, analysis, presentation, critique, and revision of research projects.

999. Doctoral Dissertation

Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 36 credits in all enrollments for this course. R: Open only to Ph.D. students.

TELECOMMUNICATION TC

Department of Telecommunication College of Communication Arts and Sciences

100. The Information Society

Fall, Spring, Summer. 3(3-0)

Technological and social trends in the information society. Social policy involving information technologies and information services. Examples from the telephone, computer, television, cable, radio and satellite systems.

200. History and Economics of Telecommunication

Fall, Spring, Summer. 4(4-0) P: EC 201 or concurrently. R: Not open to freshmen.

Institutional, economic and content development of telecommunication including broadcasting, cable, new video technologies, and telephone and data transmission.

201. Introduction to Telecommunication Technology

Fall, Spring, Summer. 4(4-0) P: MTH 110 or MTH 116; CPS 101 or CPS 131 or concurrently. R: Not open to freshmen.

Operational principles of audio, data and video telecommunication technologies.

240. Telecommunication Media Arts

Fall, Spring, Summer. 4(2-4) R: Not open to freshmen.

Characteristics of image and sound media and their role in shaping the meaning of media messages. Application of aesthetic principles in the design of mediated communication.

275. Effects of Mass Communication

Fall, Spring, Summer. 3(3-0) *Interdepartmental with Communication. R: Not open to freshmen.*

Major social effects of mass media on audience behavior. Political communication. Media effects on children. Message strategies producing attitude change. Interrelationships between mass media and interpersonal communication.

310. Basic Telecommunication Policy

Fall, Spring, Summer. 4(4-0) P: TC 100, TC 200, TC 201, TC 240.

Policy and plans in telecommunication systems and services in the United States and other nations.

342. Basic Video Design and Production

Fall, Spring, Summer. 4(2-4) P: TC 240. R: Open only to Telecommunication majors. Approval of department; application required.

Conceptualization, design, planning, producing, directing, editing, and evaluation of video programs.

343. Basic Audio Production

Fall, Spring, Summer. 4(2-4) P: TC 201, TC 240. R: Open only to Telecommunication majors. Approval of department; application required.

Basic audio production techniques. In-depth audio and radio industry analysis. Media writing.