

**4650. Urban and Regional Economics.** 3 hours. Uses economic analysis to understand the development of cities and regions and how economic activity in the areas is organized. Explores the economics of transportation and urban problems such as poverty, segregation, crime and congestion. Prerequisite(s): ECON 3550. May not be repeated at the graduate level as ECON 5750.

**4850. International Trade.** 3 hours. Examines the nature and theoretical foundations of modern trade between nations. Topics include patterns of international trade and production, welfare implications of trade, impacts of tariffs and quotas, balance of trade and balance of payments issues. Analysis of trade implications of international monetary systems, multinational corporations, exchange rates and economic implications of political action. Prerequisite(s): ECON 1100 and 1110, or consent of department. May not be repeated at the graduate level as ECON 5850.

**4870. Introduction to Econometrics.** 3 hours. Focus on simple and multiple regression using ordinary least squares (OLS). Topics include linear and intrinsically linear regression models; estimation under ideal and non-ideal conditions; linear hypothesis testing; multicollinearity and models with dummy variables. Usually offered fall and spring semesters. Prerequisite(s): ECON 4630 or consent of department. May not be repeated at the graduate level as ECON 5640.

**4875. Empirical Linear Modeling.** 3 hours. Develops the tools necessary to analyze, interpret and develop empirical applications of econometric estimation procedures. Exploration of an assortment of applied problems that are typically encountered in quantitative research with particular attention given to the examination of real-world, economic and other business-related phenomena. Particular attention is given to developing proficiency in the following four areas: organizing and manipulating data, estimating linear regression models, interpreting econometric results and computer output, and working with computer software. Prerequisite(s): ECON 4870.

**4900-4910. Special Problems.** 1–3 hours each.

**4920. Cooperative Education in Economics.** 1–3 hours. Supervised work in a job directly related to the student's major, professional field of study or career objective. Prerequisite(s): 12 semester hours credit in economics; student must meet employer's requirements and have consent of department chair. May be repeated for credit.

**4951. Honors College Capstone Thesis.** 3 hours. Major research project prepared by the student under the supervision of a faculty member and presented in standard thesis format. An oral defense is required of each student for successful completion of the thesis. Prerequisite(s): completion of at least 6 hours in honors courses; completion of at least 12 hours in the major department in which the thesis is prepared; approval of the department chair and the dean of the school or college in which the thesis is prepared; approval of the dean of the Honors College. May be substituted for HNRS 4000.

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## Educational Administration and Supervision

see *Graduate Catalog*

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## Educational Curriculum and Instruction

see *Graduate Catalog*

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## Educational Foundations

see Teacher Education and Administration

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## Educational Psychology

### **Development and Family Studies, DFST**

**1013 (TECA 1354). Human Development.** 3 hours. Introduction to the theories and processes of physical, cognitive and social development of the individual from conception until death. Suitable for non-majors; DFST majors should take in their first year. *Satisfies the Social and Behavioral Sciences requirement of the University Core Curriculum.*

**1023. Assessment and Observation.** 3 hours. Methods in observation and reporting of child development. Developmental assessment of infants, children and adolescents. Methods, reading and reporting of research in human development and family studies. DFST majors should take in their first year.

**2033 (TECA 1303). Parenting in Diverse Families.** 3 hours. Commonalities and differences in parenting, caregiving and family life are emphasized from systems, ecological and cross-cultural perspectives. Parenting and caregiving in diverse family forms and cultures are studied in relation to adult-child interactions, parent/school/community relations, family roles, laws, and parenting skills. *Satisfies a portion of the Understanding the Human Community requirement of the University Core Curriculum.*

**2313. Marriage and Family Living.** 3 hours. Factors of dating, courtship, marriage and family relationships.

**2900. Special Problems.** 1–3 hours. Open to lower-level students capable of developing a problem independently. Problems are chosen by the student and developed through conferences with the instructor.

**3113. Infant and Toddler Development.** 3 hours. The growth and development of the child from conception to three years, including the influence of the family and environment.

**3123. Child Development.** 3 hours. Basic principles of development and learning; physical, cognitive, language, social and emotional development in early and middle childhood (ages 3 to 10 years). May require some observation and case study.

**3213. Infant and Toddler Education and Care.** 3 hours. Focus on developmentally appropriate interactions with infants and toddlers to promote optimal development in home and group education and care. Includes planning environments and choosing equipment and materials. Fifteen hours field observation in infant/toddler day care. Prerequisite(s): DFST 3113.

**3323. Advanced Marriage and Family Living.** 3 hours. Family, beginning with marriage through remaining life cycles.

**4011. Prepracticum.** 1 hour. Provides a bridge from theory to professional practice. Determining career goals and assuming professional ethics, roles and responsibilities are emphasized. Preparation and placement for an in-depth practicum for FCS student teaching is included. Prerequisite for DFST 4023 and FCS student teaching, to be taken the prior term/semester.

**4023. Practicum.** 3 hours. The practicum requires a minimum of 150 clock hours of in-depth experience with an approved agency or researcher related to development and/or family studies, plus seminar (online or in person arranged with instructor). Emphasis is placed on application of knowledge and skills to actual job roles and responsibilities. Students must have senior status and meet with an advisor the previous term/semester for approval of practicum site. Prerequisite(s): DFST 4011. May be taken twice, for a total of 6 hours.

**4133. Adolescent Development.** 3 hours. Theories and characteristics of physical, cognitive and social development between 11 and 20 years of age. Effects of family, school, community and other factors on adolescent development are also addressed.

**4223. School-Age and Adolescent Programs.** 3 hours. The components in before and after school child care and related programs that are developmentally appropriate and benefit children aged 5 through adolescence are explored. These include planning, implementing and evaluating activities, facilities, programs, staff, budgets and other aspects necessary for providing healthy services for children and adolescents.

**4233. Guidance of Children and Youth.** 3 hours. Best practices in individual and group guidance and management of children from birth through adolescence. Focus on behavior in the context of family, culture and social practices. Requires 15 hours of observation of individual and group activities in an approved setting, to include 3 hours of interaction with infants, children, or youth. Prerequisite(s): DFST 3123.

**4253. Administration of Programs for Children, Youth and Families.** 3 hours. Analysis of programs, personnel policies, facility administration and related topics for teachers and administrators who work with children, youth and families. Prerequisite(s): course in child development.

**4333. Transitions in Family Living and Work.** 3 hours. The effects of family living and work performance throughout the life cycle are considered. Selected skills are offered and/or practiced to enhance a better balance between family roles and the job.

**4343. Romantic Relationships: Theories, Research and Application.** 3 hours. An in-depth, comprehensive exploration of the theories, research and applications thought to promote relationship success in a wide variety of romantic relationships, including dating and marital relationships.

**4413. Family Life Education.** 3 hours. The practice and process of family life education and training of professionals in the child development and family field. Curriculum and program development and evaluation. Teaching strategies and professional responsibilities. Prerequisite(s): DFST 2033 and 3323.

**4423. Families, Schools and Community Resources.** 3 hours. Analyzing family, school and community resources and needs as related to the family life cycle; child welfare and education, ecological approach; and exploration of careers related to children and families. Strategies to improve communication and collaboration are emphasized with a focus on family types, cultures, economic conditions, school systems, community services, political forces, advocacy groups and other factors that impact young children and their families. Fifteen hours a term/semester in field work arranged.

**4433. Family Resource Management.** 3 hours. Application of principles of family resource management includes goal setting; decision making; and time, energy, financial, and consumer management.

**4800-4810. Studies in Development and Family Studies.** 1-3 hours. Organized classes for specific program needs and student interests. Prerequisite(s): consent of department. Limited-offering basis. May be repeated for credit.

**4900. Special Problems.** 1-3 hours. Open to advanced students capable of developing a problem independently. Problems chosen by student and developed through conferences with the instructor.

**4951. Honors College Capstone Thesis.** 3 hours. Major research project prepared by the student under the supervision of a faculty member and presented in standard thesis format. An oral defense is required of each student for successful completion of the thesis. Prerequisite(s): completion of at least 6 hours in honors courses; completion of at least 12 hours in the major department in which the thesis is prepared; approval of the department chair and the dean of the school or college in which the thesis is prepared; approval of the dean of the Honors College. May be substituted for HNRS 4000.

**Educational Psychology** – see *Graduate Catalog*

### **Special Education, EDSP**

The following special education courses are included in the generic special education service delivery endorsement for the elementary and secondary teaching certificates (EDSP 3210, 3420, 3500, 4110, 4320, 4330 and 4340).

**2500. Human Exceptionality.** 3 hours. An examination of intellectual, physical and social-behavioral exceptionalities across the life span. Students explore educational, cultural, economic, and political perspectives of exceptionalities. Attention is also given to viewing exceptionalities from various disciplines. *Satisfies a portion of the Understanding the Human Community requirement of the University Core Curriculum.*

**3210. Educational Aspects of Exceptional Learners.** 3 hours. Overview of the unique physical, cognitive and behavioral needs of exceptional learners. The teacher's role in identification and referral procedures and implementation of effective educational practices as required by federal and state law are examined.

**3220. Learning Disabilities: Characteristics, Identification and Intervention.** 3 hours. An examination is made of the typical characteristics associated with learning disabilities and identification procedures utilized. Emphasis is on the development of appropriate intervention programs. Prerequisite(s): EDSP 3210 and 3300 or consent of department.

**3240. Family Communication and Collaboration for Exceptional Learners.** 3 hours. (2;1). Analysis of collaboration and communication models and strategies used in working with families, caregivers and professionals concerned about students with exceptionalities. Focus on the changing definition of family, community resources, advocacy groups, political forces, legal mandates and other factors are addressed that may impact students and their families. 15 hours per term/semester of field-work is arranged.

**3300. Special Education Practicum I.** 3 hours. (1;6) Practical experience in field sites (90 hours: 70 hours field experience and 20 hours classroom). Cognitive, affective and psychomotor objectives for observing behaviors, assisting in planning for instruction and participating in diagnostic processes. Professional development is emphasized. Prerequisite(s): 60 hours of undergraduate credit, overall GPA 2.75, all sections of THEA must be passed.

**3410. Mental Retardation: Characteristics, Identification and Intervention.** 3 hours. An examination is made of the typical characteristics associated with mental retardation and identification procedures utilized. Emphasis is on the development of appropriate intervention programs. Prerequisite(s): EDSP 3210 and 3300 or consent of department.

**3420. Behavioral Disorders: Characteristics, Identification and Intervention.** 3 hours. An examination is made of the typical characteristics associated with severe behavior problems and procedures for identification. Emphasis is on the development of appropriate intervention programs. Prerequisite(s): EDSP 3210 and 3300 or consent of department.

**4110. Student Teaching in Special Education.** 3 hours. Teaching under supervision. See "Student Teaching Program" under College of Education section in the *Undergraduate Catalog* for details. Prerequisite(s): EDSP 3210, 3220, 3300, 3410, 3420, 4320, 4330 and 4340; or consent of department. Pass/no pass only.

**4320. Educational Assessment and Evaluation of Exceptional Learners.** 3 hours. Examines a variety of assessment and evaluation strategies that are appropriate for special and general education settings. Knowledge of basic testing procedures and terminology as related to the exceptional learner. Interpretation and utilization of test data in developing individual education plans. Introduction to curriculum-based assessment. Field experiences include administration of academic and teacher-made assessments. Prerequisite(s): EDSP 3210 or equivalent and EDSP 3420.

**4330. Advanced Educational Strategies for Exceptional Learners.** 3 hours. Advanced educational strategies and interventions that promote academic performance of exceptional learners across a variety of settings and situations. Includes an emphasis on instructional use of computers and technology in the classroom. Prerequisite(s): EDSP 3210 or equivalent and EDSP 3240.

**4340. Classroom and Behavioral Management Strategies for Exceptional Learners.** 3 hours. Approaches to behavioral management of exceptional learners across a variety of educational settings. Implementation of individualized techniques including applied behavioral analysis, as well as larger-group strategies, to foster positive behavioral, social and emotional growth. Special attention to the development of behavioral intervention plans and positive behavioral supports for students with challenging behaviors. Prerequisite(s): EDSP 3210 or equivalent and EDSP 3240.

**4350. Strategies to Support Diverse Learners in General Education.** 3 hours. Examination of the roles of various professionals in the successful inclusion of students with disabilities in the general education classroom. Focus on consultation models, practices and principles with an emphasis on collaboration, cooperative learning and inclusion. Provides and overview of assessment techniques applicable for all learners in the general education classroom. Prerequisite(s): EDSP 3210, or equivalent.

**4360. Transition Education and Services for Exceptional Learners.** 3 hours. Transition education and services for individuals with disabilities across the life span with emphasis on the post-secondary years. Examines the theory and practice of transition planning from school to community living, post-secondary education and employment. Legislative history and practical applications of skills such as transition assessment, job development and job placement are emphasized. Prerequisite(s): EDSP 3210, 3240 and 4320.

**4900-4910. Special Problems.** 1–3 hours each.

**4951. Honors College Capstone Thesis.** 3 hours. Major research project prepared by the student under the supervision of a faculty member and presented in standard thesis format. An oral defense is required of each student for successful completion of the thesis. Prerequisite(s): completion of at least 6 hours in honors courses; completion of at least 12 hours in the major department in which the thesis is prepared; approval of the department chair and the dean of the school or college in which the thesis is prepared; approval of the dean of the Honors College. May be substituted for HNRS 4000.

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## Electrical Engineering

### *Electrical Engineering, EENG*

**1910. Project I: Learning to Learn.** 2 hours. Learning to Learn (L2L) is based on sound cognitive and pedagogical techniques that improve learning outcomes and make lifelong learning habitual. Students develop an understanding of how engineering and computer science are learned and how we can facilitate and encourage the lifelong learning process. Topics covered include consciousness and self-awareness, metacognition, learning styles, memory, language, reading, writing, problem solving, creativity and biology of learning.

**1920. Project II: Introduction to Electrical Engineering.** 2 hours. Engineering is the place where science, business and society intersect, so engineering ethics provides an interesting way to study the relationships among these three. This project course focuses on the profession of engineering, its role in business and society, and the ethical issues that engineers face. Class involves case studies, discussions, group projects, reading, writing response papers and exams; topics include international concerns, risk safety, and environmental issues, employee loyalties and professional responsibility, professional organizations and codes of conduct.

**2610. Circuit Analysis.** 3 hours. Introduction to electrical elements, sources and interconnects. Ohm's law, Kirchoff's law, superposition and Thevenin's theorems are introduced. The resistive circuit, OP Amp, RL, RC circuits, Sinusoidal analysis. Prerequisite(s): MATH 1720 and PHYS 2220/2240.