

**4610. Computer Architecture.** 3 hours. Study of performance issues related to the design of high performance processors, including Instruction Level Parallelism, out-of-order instruction scheduling, branch prediction, speculative execution. Prerequisite(s): CSCE 3600.

**4620. Real-Time Operating Systems.** 3 hours. Basic real-time operating systems concepts and services, including interrupt processing, process and thread models, real-time software architectures and development environments. Detailed study of the design and implementation of real-time applications using real-time operating systems. Focus on commercial real-time operating systems/development environments, including vxWorks, RTOS and pOSEK/pOSEKSystem. Prerequisite(s): CSCE 3600 and 3610.

**4730. VLSI Design.** 3 hours. Introduction to VLSI design using CAD tools, CMOS logic, switch level modeling, circuit characterization, logic design in CMOS, systems design methods, test subsystem design, design examples, student design project. Design project to be fabricated and tested in the follow-on course CSCE 4750. Prerequisite(s): CSCE 3730 and ELET 3720. (Same as EENG 4710.)

**4750. VLSI Testing.** 3 hours. Advanced experience with CAD tools for VLSI design, IC testing. Design project from CSCE 4730 to be fabricated and tested. Implementation and verification of test programs, IC testing and troubleshooting, legal, economic, and ethical design issues. Oral presentations and written reports are required. Prerequisite(s): CSCE 4730.

**4890. Directed Study.** 1–3 hours. Study by individuals or small groups if faculty supervisor agrees. A plan of study approved by the faculty supervisor along with the study will be graded by the faculty supervisor; must be approved by the chair of the department. Prerequisite(s): junior or senior standing in computer science or computer engineering.

**4910. Computer Engineering Design I.** 3 hours. First course in the senior capstone design sequence. Focus is the application of techniques to the design of electronic systems that have digital hardware and software components. Students apply the theory acquired from numerous engineering courses to solve real-world design problems. The design will consider realistic constraints including economic, environmental, sustainability, manufacturability, ethical, social, safety. Prerequisite(s): CSCE 3600, ELET 3720, and appropriate area electives.

**4915. Computer Engineering Design II.** 3 hours. Second course in the senior capstone design sequence. Focus is the application of techniques to the design of electronic systems that have digital hardware and software components. Students apply the theory acquired from numerous engineering courses to solve real-world design problems. The design will consider realistic constraints including economic, environmental, sustainability, manufacturability, ethical, social, safety. Prerequisite(s): CSCE 4910.

**4920. Cooperative Education in Computer Science and Engineering.** 1–3 hours. Supervised field work in a job directly related to the student's major field of study or career objective. May be repeated for credit. Prerequisite(s): junior or senior standing in computer science or computer engineering and consent of department.

**4930. Topics in Computer Science and Engineering.** 3 hours. Topics vary. May be repeated for credit. Prerequisite(s): junior or senior standing in computer science or computer engineering and consent of instructor.

**4940. Special Computer Application Problem.** 1–4 hours. Study defined by the student in applying computer science to another field. Work supervised and work plan approved by one faculty member from computer science and one from relevant application area; one to three students may work together if all faculty advisers concerned agree. Prerequisite(s): prior approval of plan by faculty supervisor. Open to advanced undergraduate students capable of developing problems independently. May be repeated for credit.

**4950. Special Problems in Computer Science and Engineering.** 1–3 hours. Prior approval of plan of study by faculty supervisor. Prerequisite(s): junior or senior standing in computer science or computer engineering.

**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.

---

## Counseling, Higher Education and Early Childhood Education

*Department name change is pending approval by the Texas Higher Education Coordinating Board.*

### Counseling, COUN

**2610. Principles of Counseling I.** 3 hours. An introduction to the broad range of counseling services and their application to schools and community agencies. May be taken concurrently with COUN 3620, 3630, 3640, 4610 and 4620.

**3600. Therapeutic Play.** 3 hours. Didactic and experiential training in how to be a therapeutic agent in children's lives by using structured therapeutic play sessions. Participants are taught basic child-centered play therapy principles and skills, including reflective listening, recognizing and responding to children's feelings, therapeutic limit setting, building children's self-esteem, and structuring therapeutic play sessions with children using a special kit of selected toys. Observations of play therapy sessions and skill building therapeutic play sessions are required.

**3620. Principles of Counseling II.** 3 hours. An integrated overview of counseling services through personal self-exploration by the counseling associate. Focus is on the understanding of interpersonal dynamics through self-awareness. Prerequisite(s): COUN 2610 (may be taken concurrently).

**3630. Survey of Career Development and Career Guidance.** 3 hours. Overview of current problems and developments in career choices. Prerequisite(s): COUN 2610 (may be taken concurrently).

**3640. Group Process in Helping Relationships.** 3 hours. Group dynamics laboratory: group functions and leadership styles as related to helping relationships. Prerequisite(s): COUN 2610 (may be taken concurrently).

**4610. Appraisal Techniques.** 3 hours. Principles, concepts, procedures of appraisal, and utilizing tests and non-test instruments and techniques. Prerequisite(s): COUN 2610 (may be taken concurrently).

**4620. Interpersonal Skills in Helping Relationships.** 3 hours. Didactic and experiential training in interpersonal relationships; analysis and application of effective counseling activities. Prerequisite(s): COUN 2610 (may be taken concurrently).

### **Early Childhood Education, DFEC**

**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.

**3613. Introduction to Early Childhood Education.** 3 hours. Historical foundations of early childhood education, current programs, best practices and legal and ethical issues. Introduction of how understanding development of typical and atypical young children influences objectives, activities, materials, and teaching strategies and techniques in an early childhood classroom. Prerequisite(s): DFST 3123 (may be taken concurrently).

**4243. Environmental Processes and Assessment.** 3 hours. (3;3;0) Considers early childhood learning processes as well as implications for individual, group, and program assessment. Areas of emphasis include development of skills in selection, use and interpretation of developmentally appropriate practices. Focus areas include formal, informal and holistic assessment instruments as well as learning environment materials and resources. Implications for technology in assessment and management are discussed. Laboratory experiences required. Prerequisite(s): DFST 4233. EC–4 students must also complete DFEC 3613 as a prerequisite.

**4633. Nurturing Children's Social Competence.** 3 hours. Facilitating the social and emotional skills of young children. Incorporates an ecological approach to significant influences on self-esteem and self-concept including diversity, family, creativity and individual differences. Includes analysis of play theory and research. Field experience required. Prerequisite(s): DFEC 3613.

**4800-4810. Studies in Development, Family Studies and Early Childhood Education.** 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.

---

## **Counseling**

see Counseling, Higher Education and Early Childhood Education

---

## **Criminal Justice**

### **Criminal Justice, CJUS**

**2100 (CRIJ 1301). Crime and Justice in the United States.** 3 hours. This course examines the societal responses to people and organizations that violate criminal codes; discusses the history, development, organization and philosophy of the justice process; and analyzes the complex inter-relationships between the major components of the criminal justice system (police, courts and corrections). *Satisfies the Social and Behavioral Sciences requirement of the University Core Curriculum.* (Same as SOCI 2100.)

**2600. Diversity Issues in Criminal Justice.** 3 hours. Critically examines race, gender and other diversity issues within the U.S. criminal justice system. Topics of emphasis include the importance of diversity issues in the development, organization and operation of the criminal justice system. *Satisfies the Cross-Cultural, Diversity and Global Studies requirement of the University Core Curriculum.*

**2900-2910. Special Problems.** 1–3 hours.

**3201. Criminal Law.** 3 hours. This course examines general and statutory bases and theories of criminal law and jurisprudence. Prerequisite(s): CJUS 2100 or equivalent.

**3210. Judicial and Legal Systems.** 3 hours. This course examines the courts, the legal and judicial process and judicial behavior. Prerequisite(s): CJUS 2100 or equivalent.

**3300. Police Systems.** 3 hours. This course focuses on the role and function of police in contemporary society, the problems arising between citizens and police from the enforcement of laws, the limitations of police in a democratic society and the methodologies used by the police to be a more effective component of the justice system. Prerequisite(s): CJUS 2100 or equivalent.

**3310. Organized and Consensual Crime.** 3 hours. The study of the history, structure and governmental responses to organized crime; special emphasis is placed on consensual crimes such as drug abuse and trafficking, prostitution, pornography and gambling. Prerequisite(s): CJUS 2100 or equivalent.

**3320. Corporate Security and Loss Prevention.** 3 hours. Overview of loss prevention problems and the security and management strategies designed to protect the private sector from crime, fire, accident, employee dishonesty and natural disaster. Prerequisite(s): CJUS 2100 or equivalent.

**3330. Introduction to Criminalistics.** 3 hours. Overview of the field of criminalistics, with a focus on the recognition, collection, preservation and analysis of physical evidence. Introduction to topics such as fingerprint examination, trace evidence analysis and firearm examination. Prerequisite for more advanced criminalistics courses. Prerequisite(s): CJUS 2100 or equivalent, or consent of instructor.

**3340. Computer Crime.** 3 hours. Introduction to computer crime through an examination of the crime and those individuals committing it, as well as the specific laws, investigative techniques, and criminological theories applicable to computer crime.