## TECH - Technology Education

TECH 200 - Introduction to Technological Systems and Processes (3)

This is an introduction to technological development, technological literacy, the use of technological systems, and tools for fundamental production processes to solve social technical problems. 4 contact hours.

Offered: Fall, Spring.

TECH 202 - Design Processes (3)

This class introduces design processes necessary for problem solving and production in a technological society. Emphasis is placed on the design sequence, processes, and techniques for sketching, modeling, prototyping, and CAD. 4 contact hours.

Offered: Fall.

TECH 204 - Energy and Control Systems (3)

Energy sources and common energy processing techniques are introduced. Study includes control devices, energy transmission technology, and the operation of energy conservation systems. 4 contact hours.

Offered: Annually.

TECH 216 - Computer-Aided Design (3)

International drafting-language protocol is explored and used to solve design problems in orthographic and pictorial presentation. Study includes basic computer-aided drafting. 6 contact hours.

Offered: As needed.

AnnuallyTECH 305 - Teaching and Learning in Technology Education (4)

Students are introduced to the materials and skills that will assist them with the development of the formative abilities necessary to deliver effective instruction in (K-12) Technology Education programs.

Prerequisites: TECH 200 and TECH 202

12 credits of TECH must be completed with a minimum 2.75 GPA.

Cumulative GPA 2.75 required.

TECH 306 - Automation and Control Processes 4 (AQSR)

Students study automation and control systems to create efficient technological systems.  Activities include CNC, 3D printing, laser cutting/etching, and pneumatics to support appropriate technological problem solving and decision-making opportunities.

Prerequisite:

Completion of any mathematics or natural science general education distribution, or consent of department chair..

Offered: Annually.

TECH 326 - Communication Systems (3)

Communication processes, systems, and their applications are examined. Study includes the technological processes used in developing, producing, delivering, and storing ideas and information in a technological society. 4 contact hours.

Prerequisite: TECH 200 or TECH 202.

Offered: Fall.

TECH 327 - Construction Systems (3)

This is an introduction to the skills, knowledge, environments, and people in the construction industry. A laboratory component is required for students to plan, design, and build a structure. 6 contact hours.

Prerequisite: TECH 200 or TECH 202.

Offered: Spring.

TECH 328 - Manufacturing Systems (3)

This is an exploration of contemporary manufacturing systems, design considerations, production techniques, and automated systems and control devices to produce products. Organizational and management structures are also practiced. 4 contact hours.

Prerequisite: TECH 200 or TECH 202.

Offered: Spring.

TECH 329 - Transportation Systems (3)

Focus is on transportation technology, modes, vehicular systems, and support systems for moving people and cargo in various environments. Study includes the effects of transportation on individuals, society, and the environment. 4 contact hours.

Prerequisite: TECH 200 or TECH 202.

Offered: Annually.

TECH 406 - (4)

Methods for Teaching Technical Subjects

Students are introduced to teaching methods and clinical experiences in the technical classroom. They learn the craft of teaching by developing micro-lessons delivered and assessed in public school labs.

Prerequisite: TECH 305, with minimum grade of B ; completion of at least 18 credit hours of content area courses, with minimum GPA of 2.75 in these courses; admission to the Feinstein School of Education and Human Development and to the Technology Education teacher preparation program; CTE students will require consent of program coordinator .

Offered: Annually.

(4)

TECH 318 - Practicum I: Teaching K-6 Technology Education

Students begin to develop essential skills required to plan and organize lessons for the elementary Technology Education environment. They observe, assist and then teach in the elementary classroom and laboratory.

Prerequisites

Admission to FSEHD; TECH 305, with minimum grade of B; TECH 406, with minimum grade of B and positive recommendation from the instructor; completion of at least 48 credit hours of required and cognate courses in the major, or consent of department chair; minimum grade of C in all content area courses, unless otherwise required; minimum cumulative GPA of 2.75; and minimum GPA of 2.75 in content area.

Offered Annually

TECH 418 - Practicum II: Teaching Secondary Technology Education Grades 7 - 12

Students study the principles, methods, content, and curriculum necessary to deliver appropriate lessons. They explore various professional responsibilities under the direction of a cooperating teacher and a college supervisor.

Prerequisites: Admission to FSEHD; TECH 305, with minimum grade of B; TECH 406 and TECH 318, with minimum grades of B and a positive recommendation from the instructor; completion of at least 55 credit hours of required and cognate courses in the major, or consent of department chair; minimum grade of C in all content area courses, unless otherwise required; minimum cumulative GPA of 2.75; and minimum GPA of 2.75 in content area.

Offered: Annually

TECH 421 - Student Teaching in Technology Education (10)

In this culminating field experience, candidates complete a teaching experience in a middle or senior high school under the supervision of a cooperating teacher and college supervisor. This is a full-semester assignment. Graded S, U.

Prerequisite: TECH 407 and TECH 408, with a minimum grade of B- and positive recommendations from the instructors; concurrent enrollment in TECH 422; completion of all required education courses, with a minimum grade of B- (except CEP 315); completion of all content area courses, with a minimum GPA of 2.75; a minimum cumulative GPA of 2.75 a full semester prior to student teaching; passing score(s) on the Praxis II, approved Preparing to Teach Portfolio; completion of the community service requirement; and a negative result from the required tuberculin test.

Offered: Fall, Spring.

TECH 422 - Student Teaching Seminar in Technology Education (2)

Teacher behaviors appropriate to effective teaching are developed. Topics include classroom and time management, effective communication, learning styles, and teaching strategies. This seminar meets weekly.

Prerequisite: Concurrent enrollment in TECH 421.

Offered: Fall, Spring.

TECH 430 - Internship in Applied Technology (6)

Exploratory internships offered for the purpose of professional development and advancing career goals. Learning experiences in work environments help students transition from the role of student to the professional. 12 contact hours.

Prerequisite: Senior standing; All content courses must be completed; 27 credits in content area; 2.75 GPA in content area.

Offered: As needed.

TECH 431 - Capstone Design Project (4)

This is a project completed under the direction of a faculty member. Students will design, model, test, and report results of their project. 6 contact hours.

Prerequisite: Senior standing; all content courses must be completed; 27 credits in content area; 2.75 GPA in content area.

Offered: Fall, Spring.

TECH 490 - Directed Study (3)

Designed to be a substitute for a traditional course under the instruction of a faculty member.

Prerequisite: Consent of instructor, department chair and dean.

Offered: As needed.

TECH 511 - Implementing Technology Education (3)

Teaching strategies are provided, with focus on implementing programs, integrating with STEM areas, and developing activities.

Prerequisite: Graduate status and certification in technology education, or consent of department chair.

Offered: As needed.

TECH 512 - Program Development and Funding (3)

Focus is on developing funding plans and grants to sustain technology education programs.

Prerequisite: Graduate status and certification in technology education, or consent of department chair.

Offered: As needed.

TECH 520 - Curriculum Models in Technology Education (3)

New curriculum models used in technology education programs at the national level are presented. Career education and prevocational curriculum thrusts are identified and analyzed for implementation in technology education programs.

Prerequisite: Graduate status and certification in technology education, or consent of department chair.

Offered: As needed.

TECH 531 - Issues in the Workplace (3)

Economic, social, and political issues affecting work and education are identified. Forces accelerating the rate of change in peoples' working lives and their expectations for education and training are studied.

Prerequisite: Graduate status and certification in technology education, or consent of department chair.

Offered: Spring.

TECH 562 - Research in Technology Education (3)

Basic forms of research and evaluation are introduced. Students are required to develop a research proposal in the field of technology education or in another area of technology.

Prerequisite: Graduate status, completion of four courses in the Professional Education Component and/or consent of department chair.

Offered: As needed.

TECH 565 - Problem Solving and Critical Thinking (3)

Students apply techniques for analyzing problems, framing decisions, and stimulating critical analysis and creative thought.

Prerequisite: Graduate status and certification in technology education, or consent of department chair.

Offered: Fall.

TECH 590 - Directed Study (1 - 6)

Students identify a relevant STEM research project. The student prepares the project proposal, conducts the research, and presents artifacts developed from the research.

Graduate status, completion of 18 credits in the program, or permission of the instructor.

Offered: As needed.