Feinstein School of Education and Human Development| 37

**Technology Education**

**Department of Educational Studies**

**Department Chair:** L Lesley Bogad

**Technology Education Program Coordinator:** Charles H. McLaughlin, Jr.

**Technology Education Program Faculty:** **Professor** Charles H. McLaughlin Jr.

Students **must** consult with their assigned advisor before they will be able to register for courses.

**Technology Education B.S.**

**Course Requirements for Concentration in Teaching**

**Courses**

|  |  |  |  |
| --- | --- | --- | --- |
| TECH 200 | Introduction to Technological Systems and Processes | 3 | F, Sp |
| TECH 202 | Design Processes | 3 | F |
| TECH 204 | Energy and Control Systems | 3 | Annually |
| TECH 216 | Computer-Aided Design | 3 | As needed |
| TECH 305 | Teaching and Learning in Technology Education | 4 | Annually |
| TECH 306 | Automation and Control Processes | 4 | Annually |
| TECH 326 | Communication Systems | 3 | F |
| TECH 327 | Construction Systems | 3 | Sp |
| TECH 328 | Manufacturing Systems | 3 | Sp |
| TECH 329 | Transportation Systems | 3 | Annually |

**Professional Courses**

|  |  |  |  |
| --- | --- | --- | --- |
| CEP 215 | Introduction to Educational Psychology |  | F, Sp, Su |
| FNED 101  **FNED 246** | Introduction to Teaching and Learning  Schooling for Social Justice | 2  4 | F, Sp, Su  F, Sp, Su |
| SPED 333 | Introduction to Special Education | 3 | F, Sp |
| TECH 406 | Methods for Teaching Technicla Subjects | 4 | Annually |
| TECH 318 | Practicum I: Teaching K-6 Technology Education | 4 | Annually |
| TECH 418 | Practicum II: Teaching Secondary Technology Education Grades 7 – 12 | 4 | Annually |
| TECH 420  TECH 421 | Introduction to Student Teaching  Student Teaching in Technology Education | 2  7 | Fall,Sp  Sp |
| TECH 422  **TESL 401**  **Choose ONE from:**  SPED 433  TESL 402 | Student Teaching Seminar in Technology Education  Introduction to Teaching Emergent Bilinguals  Special Education: Best Practices and Applications  -Or\_  Applications of Second Language Acquisition Theory | 3  4    3  3 | Sp  F, S  F, Sp |

**Cognates**

|  |  |  |  |
| --- | --- | --- | --- |
| CHEM 103 | General Chemistry I | 4 | F, Sp, Su |
| MATH 120 | Intermediate Algebra | 4 | F, Sp, Su |
| MATH 139 | Contemporary Topics in Mathematics | 4 | F, Sp, Su |
| PSCI 103 | Physical Science | 4 | F, Sp, Su |

**Total Credit Hours: 92**

**Course Requirements for Concentration in Applied Technology**

*Note: This program does not lead to RIDE teaching certification.*

**Courses**

|  |  |  |  |
| --- | --- | --- | --- |
| TECH 200 | Introduction to Technological Systems and Processes | 3 | F, Sp |
| TECH 202 | Design Processes | 3 | F |
| TECH 204 | Energy and Control Systems | 3 | Annually |
| TECH 216 | Computer-Aided Design | 3 | As needed |
| TECH 306 | Automation and Control Processes | 4 | Annually |
| TECH 326 | Communication Systems | 3 | F |
| TECH 327 | Construction Systems | 3 | Sp |
| TECH 328 | Manufacturing Systems | 3 | Sp |
| TECH 329 | Transportation Systems | 3 | Annually |
| TECH 430 | Internship in Applied Technology | 6 | As needed |
| TECH 431 | Capstone Design Project | 4 | F, Sp |

**Cognates**

|  |  |  |  |
| --- | --- | --- | --- |
| CSCI 157 | Introduction to Algorithmic Thinking in Python | 4 | F, Sp |
| CSCI 201 | Computer Programming and Design | 4 | F, Sp |
| MGT 201 | Foundations of Management | 3 | F, Sp, Su |
| MGT 331 | Occupational and Environmental Safety Management | 3 | F |
| MATH 209 | Precalculus Mathematics | 4 | F, Sp, Su |
| MATH 212 | Calculus I | 4 | F, Sp, Su |
| PHYS 101 | General Physics I | 4 | F, Su |
| PHYS 102 | General Physics II | 4 | Sp, Su |

**Total Credit Hours: 68**

COURSE DESCRIPTIONS:

## 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.

TECH 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.

Prerequisite: TECH 200 and TECH 202; 12 credits of TECH must be completed with a minimum GPA of 2.75; and a minimum cumulative GPA of 2.75.

Offered: Annually.

TECH 306 - Automation and Control Processes (4)

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.

General Education Category: Advanced Quantitative/Scientific Reasoning.

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 - Methods for Teaching Technical Subjects (4)

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 the consent of program coordinator.

Offered: Fall, Spring.

TECH 318 - Practicum I: Teaching K-6 Technology Education (4)

Students begin to develop essential skills required to plan and organize lessons for the elementary technology education environment. They observe, assist, then teach in the elementary classroom and laboratory. 6 contact hours.

Prerequisite: Admission to FSEHD; TECH 305 and 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 cumulative GPA of 2.75; and minimum GPA of 2.75 in content area.

Offered: Annually.

TECH 418 – Practicum II: Teaching Secondary Technology Education (4)

Students study various 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..

Prerequisite: Admission to FSEHD; TECH 318 with minimum grade of B- and 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 cumulative GPA of 2.75; and minimum GPA of 2.75 in content area.

Offered: Annually.