Courses of Instruction

THRD 110 Introduction to Career and Technology Education 3(2,3) Examines the philosophy of technology education in the public school system and the philosophy and organization of training and development. Students are given an orientation to the major in Technology and Human Resource Development and an overview of the principles of technology.

THRD 115 Contemporary Technological Problems 3(3,0) Provides students with an understanding of the problems and contributions of technology. Examples are taken from historical accounts and from analyses of contemporary technological intervention both in industrialized and nonindustrialized countries.

THRD 160 Training Programs in Industry 3(3,0) Introduction and first-hand experience in industrial training programs. Emphasis is on observing and participating in actual training situations as well as communications and media usage in industry. Preq: THRD 110.

THRD 180 Introduction to Technical Drawing and Computer-Aided Drafting 3(1,6) Introductory drafting course utilizing traditional drafting techniques and computer software to explore technical drawing and orthographic projection through construction of multiview and isometric projections, sectional and auxiliary views, dimensioned working drawings, developments, and intersections. Freehand sketching is a means of problem solving and analysis.

THRD 181 Advanced Technical Drawing and Computer-Aided Drafting 3(1,6) Students expand the application of computer-aided drafting in the areas of mechanical and architectural drafting. Emphasis is on the development of complex working drawings incorporating instruction in the areas of production, manufacturing, and construction. Preq: THRD 110, 180 or equivalent. Consent of instructor.

THRD 220 Manufacturing Technology I: Systems 3(2,3) Introduction to management, personnel, and production systems studies through the creation of a corporation. Includes product design, product research and design, selection of processes, plant design, production systems, and system enhancement. Preq: THRD 110 and 180 or consent of instructor.

THRD 221 Exploring Technology 3(3,0) Covers a wide range of technological concepts along with familiar examples of how technology impacts our lives as individuals, a society, and a global community.

THRD 224 Machine Tool Processes 3(2,3) Basic practical shop experiences on the lathe, drill press, milling machine, and shaper. Benchwork, measuring tools, theory, and demonstrations related to a survey of fundamental machining practices.

THRD 230 Construction Technology I: Materials 3(2,3) Introduction to the commonly used building materials and methods of combining them in present day construction. Preq: THRD 110 or consent of instructor.

THRD 240 Power Technology I: Production 3(2,3) Study of power in terms of energy sources and the generation of power. Emphasis is on the development of insights and understandings of the scientific and operational principles involved in the production and utilization of power. Preq: THRD 110 or consent of instructor.

THRD 250 Electricity 3(2,7) Theory and application of DC and AC fundamentals, including instrumentation, power sources, circuit analysis, motors, construction wiring, and electronic principles and components.

THRD 280 Communications Technology I: Processes and Materials 3(2,3) Topics include graphic communications, photography, computer application and use as a visual communication medium, and audio/video production and application.

THRD 310 Arts and Creativity for the Elementary Child 3(2,3) Provides elementary and early childhood teachers an opportunity to develop technological literacy, art/craft skills in a variety of media, and an understanding of their applications to the curriculum in a classroom environment. Preq: Junior standing in Early Childhood or Elementary Education or consent of instructor.

THRD 315 Technology Skills for Learning 1(0,2) See ED F 315.

THRD 360 Safety 3(3,0) Study of the relationship of training and safety personnel to the kinds of tasks they are asked to perform. Emphasis is on safety knowledge development and on techniques which may be used in safety training.

THRD 370 Motivation and Discipline in Career and Technology Education 3(3,0) Provides classroom teachers and prospective teachers with knowledge and skills in techniques of student discipline and motivation with application to the technology education settings.

THRD 371 Management of Career and Technology Education Laboratories 3(2,2) Management and operation of unit and multiple-activity laboratories, including laboratory design, selection and procurement of tools and equipment, budgeting management, and coordination of activities in laboratory courses.

THRD 390 Cooperative Experience I 6(0,18) Full-time work experience in industry. Students are required to register with the instructor one semester prior to the summer in which they plan to enroll. Offered summer session only.

THRD 410, 610 Selected Topics 1-3(1-3,0) Subject areas organized according to program needs. Content is planned cooperatively by the University and the school system or agency requesting the course. May be repeated for a maximum of 18 credits, but only if different topics are covered. Preq: Consent of instructor.

THRD 415, 615 History and Philosophy of Career and Technology Education 3(3,0) Study of career and technology education programs with the intent of developing a sound individual philosophy. General topics covered are history, local, state, and federal legislation; types of career and technology programs; professional organizations and career guidance.

THRD 420, 620 Manufacturing II: Computer-Integrated Manufacturing 3(2,3) Study of computer-integrated manufacturing and its related concepts, including robotics, computer numeric control, electronic pneumatic and sensor systems, programmable logic controllers, and ancillary devices. Preq: THRD 220 or consent of instructor.

THRD 430, 630 Construction Technology II: Practices and Systems 3(2,3) Study of industrial practices and systems affecting man, materials, and equipment associated with construction industries. Activities are directed toward developing a working knowledge of construction technology and a framework for incorporating this instruction into programs in the public and private sectors. Preq: THRD 230.

THRD 440, 640 Power Technology II: Transmission and Control Systems 3(2,3) Continuation of THRD 240. Instruction in transmitting and controlling power for utilization in such areas as manufacturing, communications, construction, and transportation. Introduces concepts of automation and robotics to enable the classroom teachers and industry personnel to gain necessary insights into this important area of technology. Preq: THRD 240.

THRD 450 Electronics for Educators 3(1,6) Principles of electronics as applied in communications and automatic controls involving transistors, integrated circuits, and other electronic devices and materials for the preparation of teachers of industrial arts and vocational-technical electricity and electronics. Preq: THRD 250 or equivalent.

THRD 460, 660 Developing Training Programs for Industry 3(3,0) Identification, selection, and organization of subject matter for industrial training programs. Emphasizes analysis techniques, session and demonstration planning, written instructional material development, trainee evaluation, and planning instructional schedules. Preq: Senior standing in Workforce Training Concentration or consent of instructor.

THRD 461 Workplace Safety 3(3,0) Consideration of safety-related problems in the workplace. Emphasis is placed on OSHA regulations and procedures. Preq: THRD 360.

THRD 465, 665 Conducting and Evaluating Training Programs 3(3,0) Basic concepts of supervision, administration, and management of training programs. Emphasis is on determining training requirements, planning, directing, and evaluating training programs. Preq: THRD 160, 460 or consent of instructor.

THRD 468, 668 Public Relations 3(3,0) Emphasizes techniques and methods of effective public and industrial relations which contribute to understanding and cooperation of labor, business, professional, educational, and industrial groups.

THRD 470, 670 Course Organization and Evaluation 3(3,0) Problems, techniques, and procedures in the preparation, selection, and organization of subject matter for instructional purposes. Methods, techniques, and preparation of materials used in the evaluation of student achievement in industrial education subjects.
THRD 472 Advanced Instructional Methods 3(3,0) Familiarizes students with the various equipment, materials, and techniques associated with the delivery of instruction. Students design, produce, and present materials to meet specific educational objectives. Preq: THRD 471 or one year of teaching experience.

THRD 473, 673 Assessment in Career and Technology Education 3(3,0) Study of competency testing in career and technology education which includes educational objectives and measurement; construction and use of oral, objective, short answer, matching, essay, and performance tests; and treatment of test data for grade assignments and statistical analysis.

THRD 477 Directed Teaching 12(0,36) Supervised observation and teaching in cooperation with selected public schools in which opportunities are provided for securing experience in teaching industrial subjects. Preq: THRD 371, 471, 2.0 cumulative grade-point ratio.

THRD 478 Internship in Career and Technology Education I 6(0,18) Supervised observation and teaching in cooperation with selected area career centers, high schools, and technical colleges to provide experience in teaching specified subjects. Preq: THRD 371, consent of instructor.

THRD 479 Internship in Career and Technology Education II 6(0,18) Continuation of THRD 478. Preq: THRD 478, consent of instructor.

THRD (A G ED, ED F) 480, 680 Educational Applications of Microcomputers 3(2,2) See ED F 480.

THRD (A G ED, ED F) 482, 682 A dvanced Educational Applications of Microcomputers 3(2,2) See ED F 482.

THRD 483, 683 Architectural Drafting for Career and Technology Education 3(1,6) Study of the major aspects of architectural drawing, such as plot, floor, and foundation plans; wall sections; and elevations. Preq: THRD 180.

THRD 484, 684 Communications Technology II: Systems 3(2,2) Continuation of THRD 280. Includes theory and operation of communications systems: telegraph, telephone, radio, television, satellites, sound/video recorders, lasers, and computers. Instruction on strategies for interpreting this area of technology to trainees and students is emphasized. Preq: THRD 280.

THRD 486, 686 Instructional Media Development 3(1,4) Basic instructional media development techniques are presented. Students develop material using authoring software such as HyperCard, transparencies using Persuasion and/or PowerPoint, and fully storyboarded, scripted, and edited digital as well as analog video.

THRD 490 Cooperative Experience II 6(0,18) Continuation of THRD 390.

THRD 491 Special Projects 3(3,0) Students are assigned projects in accordance with their needs and capabilities. Projects are either experimental, theoretical, or developmental and cover subjects not thoroughly covered in other courses. Written project approval is required before registering. Preq: Consent of instructor.

THRD 492, 692 A dvanced Projects 1-6 Students gain depth in content by completing projects under the supervision of an instructor in career and technology education. Written approval is required before registering. May be repeated twice for a maximum of six credits. Preq: Consent of instructor.

TEXTILES

TEXT 175 Introduction to Textile Manufacturing 3(3,0) Introduction to the broad fields of textile, fiber, and polymer science and engineering with emphasis on the scientific, technological, and business principles utilized in producing fibers, yarns, and fabrics; enhancing fabric functionality by dyeing, finishing, and printing; and establishing end-use products.

TEXT 176 Natural and Man-made Fibers 4(3,3) Concept of natural and synthetic polymers as the raw materials of the textile industry is introduced. Survey of the origin, characteristics, and processing properties of various natural fibers and fiber forming synthetic polymers. Formation of textile fibers from polymeric materials is presented with specific emphasis on the polymer science and engineering principles.

TEXT 201 Yarn Structures and Formation 4(3,3) Study of fiber processing systems required to transform various fibrous materials into yarn. Involves the machine principles and theories, relationship of the fibers to the process and the resultant yarn structures, and subsequent analysis of the yarn structure to define quality and to determine suitable manufacturing practices. Preq: TEXT 175 and 176 or consent of instructor.

TEXT 202 Fabric Structures, Design, and Analysis 4(3,3) Study of fabric formation techniques designed to explore the principles and theories of modern technology. Evaluation and analysis of weaving, knitting, and nonwoven fabrication of textile structures. Preq: TEXT 201 or consent of instructor.

TEXT 308 Apparel Design 4(3,3) Introduction to apparel construction techniques and analysis of problems commonly encountered in the apparel industry. Evaluation of fabric design and properties. Preq: TEXT 202 or consent of instructor.

TEXT 314 Chemical Processing of Textiles 4(3,2) Concepts of current procedures in the chemical, mechanical, and physical preparation and in bleaching, dyeing, printing, and finishing of fabrics are presented; colorimetric and specific trophotometric methods of color control and test methods for the evaluation of the effectiveness of the treatments are emphasized. Not open to Polymer and Textile Chemistry or Textile Management (Chemical) majors.

TEXT 324 Textile Statistics 3(3,0) Introduction to statistics with particular application to the textile industry. Measures of central value and variation, probability, the normal curve, tests of hypotheses, elementary correlation, and regression. Preq: Sophomore standing or consent of instructor.

TEXT 333 The Textile Arts 3(2,3) Surveys development of the handloom from prehistoric times to the present. Studio work in the elements of hand-woven fabrics, their design, analysis, and production of four-harness counterbalance and jack looms. Preq: Junior standing or consent of instructor.

TEXT 403 Fiber Processing III 3(2,2) Concepts of current fiber processing machines, techniques, practices, and their validity are investigated. Problems are assigned that require use of acquired knowledge, textile testing equipment, and processing machines. The relation of fibrous material properties and processing dynamics to the fiber assemblies produced is studied. Preq: TEXT 201.

TEXT 411 Fabric Development III 3(2,2) Study of specifications and loom details for the production of fabrics woven to the customer's order, including multicolored layouts. Warp and filling preparation are covered as well as size formulations and their methods of application. Warping and dressing plans are developed for the warper and the slasher. Preq: TEXT 202.

TEXT 414 Knitted Structures 3(3,0) Survey of knitted structures dealing with the principles and mechanisms involved. Various systems are covered with emphasis on fiber and yarn requirements and fabric properties.

TEXT 416 Nonwoven Structures 3(2,2) Nonwoven fabric structures, their manufacture, properties, and applications. Methods of nonwoven fabric formation, resultant material characteristics and end-use applications are examined. Preq: TEXT 201.

TEXT 421, H 421 Fiber Science 3(2,2) Familiarizes students with the physical properties of textile and high performance fibers and how these properties influence processing and handling performance; method of measuring those properties; and how those properties are related to structural features of the fiber.

TEXT 422, 622 Properties of Textile Structures 3(2,2) Yarn and fabric properties, their scientific significance and analysis. Dimensional, structural, and mechanical interrelationships are established and evaluated.

TEXT 426, 626 Instrumentation 3(3,0) Principles of industrial and process instrumentation and control as applied in the textile industry; static and dynamic characteristics of measurement devices; transducer principles and techniques of their application for measurement of physical properties such as pressure, temperature, flow, weight, etc.; principles of process controllers; applications of computers in textile process control.
TEXT 428 Textile Research 1-3  Investigation of a problem in textile, fiber, or polymer science under the direct supervision of a faculty member. After completing the research, the student prepares a formal written report which is presented orally. Prereq: Senior standing or consent of instructor.

TEXT 429 Textile Research 1-3  Continuation of TEXT 428.

TEXT 440 Color Science 3(2,3)  A replication of the science of color to industrial practice in textiles, plastics, paints, lighting, and ceramics. Laboratory work is performed on modern instruments and computers.

TEXT 445, 645 Special Topics in Textile, Fiber, and Polymer Science 1-3(1-3,0)  Special topics in textile, fiber, and polymer sciences. A co-enrollment course for similar courses in other departments such as those students involved in CA EFF projects and CHE 445. There may be different sections in a term to cover different topics. May be repeated for a maximum of nine credits, but only if different topics are covered. Prereq: Consent of instructor.

TEXT 460, 660 Textile Processes 3(3,0)  Survey of machinery and processes of textile manufacturing from fiber formation through fabric finishing. For students with a nontextile background.

TEXT 470 Textile Costing and Inventory Control 3(3,0)  Study of the principles of costing as they specifically apply to the manufacture of textiles. A location of cost of material, labor, and overhead; determining the unit cost of yarns, fabrics, and finishes. Inventory systems, storage, materials handling, and profiles. Prereq: TEXT 202 or consent of instructor.

TEXT 471 Plant Layout and Processing Design 3(3,0)  Survey of the essentials necessary for textile process implementation from the pilot plant concept to a functioning textile process facility. Material flow requirements, power requirements, machinery layout, environmental controls, and facility design are considered. Prereq: TEXT 202.

TEXT 472, 672 Textile International Trade 3(3,0)  A study of the current structure of the international textile trade including imports, exports, tariffs, and trade requirements. Field experience with local firms is used to enhance student's understanding. Prereq: Senior standing or consent of instructor.

TEXT 475, 675 Textile Marketing 3(3,0)  Examination of the activities involved in the distribution of textile products in today's market. Emphasis is placed on the role of consumer research and the analysis of fashion in the design and promotion of textile products.

TEXT 476, 676 Carpet Manufacturing 3(3,0)  Study of the materials, manufacturing technologies, products, and practices associated with the carpet manufacturing sector of the textile industry. Raw materials, product design, formation and finishing systems, evaluation methods, distribution, and end-use applications are examined. Prereq: TEXT 201, 202, or consent of instructor.

THEATRE

Professors: D. J. Hartmann, R. C. Sawyer; Assistant Professors: C. A. Collins, K. Johnson, A. M. Penna; Lecturer: C. Collins

THEA 210, H 210 Theatre Appreciation 3(3,0)  Examination of the theatre event approached through historical context, play reading, analysis of production practices, and field trips to live dramatic performances.

THEA 267 Stage Makeup Techniques 2(2,1)  Practical study of basic stage makeup techniques for the acting student including corrective makeup, modeling with paint, three-dimensional makeup, prosthesis with latex, and makeup for other media.

THEA 277 Production Studies in Theatre 3(3,0)  Study of technical production and design including scenery, costume, and lighting through the examination of plays in production.

THEA 278 Acting I 3(2,3)  Fundamentals of acting: basic stage techniques; exercises in interpretation, improvisation, characterization; experience in supervised scene study.

THEA 279 Theatre Practicum 1(0,3)  Practical work in theatre on a production designed for public presentation. May be repeated for a maximum of four credits.

THEA 315 Theatre History I 3(3,0)  Historical survey of Western theatre; emphasis is placed on the changing roles of the playwright, director, actor, technician, and spectator from antiquity to the Renaissance. Prereq: Sophomore standing.

THEA 316 Theatre History II 3(3,0)  Historical survey of Western theatre; emphasis is placed on the changing roles of the playwright, director, actor, technician, and spectator from the Renaissance to the present. Prereq: Sophomore standing.

THEA 317 African American Theatre 3(3,0)  A study of the origins and development of African American plays, playwrights, plays, and their contributions to the American theatre from the 19th century to the present.

THEA (ENGL) 347 The Structure of Drama 3(3,0)  Introduction to the creative writing and critical study of drama. Prereq: ENGL 310 or consent of instructor.

THEA 367 Costume Technology 3(2,3)  Theory and practice of costume technology including equipment, patterning, fabric identification, cutting, construction, and fitting.

THEA 368 Voice for the Stage 3(2,3)  Study of the principles of vocal production and standard American speech for the stage; exercises in breath support and projection, improving vocal quality, and elimination of regional dialects through the study of the International Phonetic Alphabet. Prereq: Sophomore standing.

THEA 372 Creative Drama 3(3,0)  Practical applications using creative drama as a learning tool to strengthen curriculum goals and heighten student participation in the classroom. Students develop classroom teaching strategies based on drama education. Appropriate for elementary and secondary teachers, artists, and workshop leaders.

THEA 374 Stage Movement for Actors 3(1,2)  Study of the psychological and physical sources of movement in the human body, with emphasis on the attainment of intellectual and physical control and the application of the skills to the development of a role.

THEA 376 Stage Directing I 3(2,3)  Directing and staging techniques for the proscenium stage; exercises in composition, movement, picturization; experience in direction of scenes. Prereq: Sophomore standing.

THEA 377 Stagecraft 2(3,2)  Theory and practice of stage design and technology. Prereq: Sophomore standing.

THEA 379 Acting Ensemble I 0(0,3)  Performance opportunities in the area of theatre for young audiences. Students are members of a theatrical touring troupe and perform in a variety of spaces and locations. May be repeated for a maximum of four credits. By audition only.

THEA 398 Special Topics in Theatre 3(3,0)  Select areas of study not addressed by other theatre course offerings. May be repeated once. Prereq: Consent of instructor.

THEA (ENGL) 430, 630 Dramatic Literature II 3(3,0)  See ENGL 430.

THEA (ENGL) 447, 647 Playwriting Workshop 3(0,3)  Workshop in the creative writing of plays. May be repeated once. Prereq: THEA (ENGL) 347 or consent of instructor.

THEA 467 Costume Design 3(3,0)  Theory and practice of costume design for the theatre including the study of production concept and styles, sketching, and rendering. Prereq: THEA 367 or consent of instructor.

THEA 472, 672 Improvisation: Interpreting and Developing Texts 3(3,0)  Practical applications using drama as a learning tool to strengthen writing skills, motivate collaboration, enhance analytical skills. Students use improvisation to analyze texts and to revise original work, consider theory and research of contemporary scholars, and develop approaches to literature and composition based on readings and drama experiences. Prereq: Senior standing or consent of instructor.

THEA 476 Stage Directing II 3(2,3)  Continued study in the art of stage directing, emphasizing leading contemporary theory and methodology. Culminates in the production of a one-act play for public presentation. Prereq: THEA 376 or consent of instructor.

THEA 477 Stage Design 3(2,3)  Study and practice in stage design, including drafting, graphics, drawing, rendering, scene painting, and light plotting. Prereq: THEA 377 or consent of instructor.

THEA 479 Acting II 3(2,3)  Continued study in the craft of acting for contemporary Western theatre. Students focus on monologue and scene study in a variety of performance settings. Prereq: THEA 278 or consent of instructor.

THEA 487, 687 Stage Lighting 3(2,1)  Theory and practice of stage lighting through an understanding of various lighting instruments, lighting control systems, and execution of lighting designs.
Courses of Instruction

**THEA 497, 697 Scene Painting 3(2,1)** Practical study of basic painting techniques for the theatre including layout, proper use of materials, painting styles, and texturing techniques.

**THEA 499, 699 Independent Studies 1-3(1-3,0)** Tutorial work for students with special interests outside the scope of existing courses. May be repeated for a maximum of six credits. Prep: Consent of department chair.