Industrial Technology and Education

Department Head: Maurice G. Thomas
Location: Industrial Science 112E
Phone: (435) 797-1795
FAX: (435) 797-2567
E-mail: mthomas@cc.usu.edu
WWW: http://www.engineering.usu.edu/ite/

Graduate Program Coordinator: Edward M. Reeve, Industrial Science 108, (435) 797-3642, fast@cc.usu.edu

Undergraduate Advisor: Ronnie Green, Engineering 312, (435) 797-2790, ronnie@engineering.usu.edu

Degrees offered: Bachelor of Science (BS) in Technology and Industrial Education, BS in Aviation Technology—Maintenance Management, BS in Aviation Technology—Professional Pilot, A&P Certificate in Aircraft Maintenance Technician—Airframe & Powerplant, Master of Science (MS) in Industrial Technology

Undergraduate emphases: *BS in Technology and Industrial Education*—Technology Education and Trade and Technical Education

Undergraduate Programs

Objectives

The Department of Industrial Technology and Education offers degrees in two fields: **technology education** and **aviation technology**. The department values the integration of academic knowledge with hands-on technical skills. This is achieved by emphasizing the application of scientific and technological principles in extensive laboratory activities. The department strives to ensure that all graduates will obtain employment to match their interests and preparation.

The **Technology and Industrial Education** programs prepare graduates to teach in public schools, applied technology colleges, and community colleges. **Aviation Technology—Maintenance Management** graduates fill aviation maintenance management positions in government and industry. The **Aviation Technology—Professional Pilot** curriculum prepares graduates to be professional pilots. The **A&P Certificate in Aircraft Maintenance Technician—Airframe & Powerplant** provides training and FAA licensing for graduates to perform maintenance and repairs on aircraft.

Admission Requirements

Admission requirements are commensurate with those outlined for the University. See pages 15-18 in this catalog.

Professional Technology Program (PTP)

The Professional Technology Program (PTP) applies to the Aviation Technology—Maintenance Management major, as well as to the Aviation Technology—Professional Pilot major. The purpose of the program is to provide a quality education for students by requiring that they be fully prepared for upper-division coursework by having satisfactorily completed all required pre-professional courses.

Enrollment in upper-division ITE courses (3000-level and above) is available only to students who have been accepted into the PTP or into an appropriate graduate program or to students with a non-ITE major requiring a specific class. (Non-ITE majors may take a *maximum of two* upper-division ITE classes.)

To be eligible to apply for admission to a professional program, a student must be in good academic standing in the University and college, must achieve a grade of *C-* or better in every required preprofessional course, and must have an overall grade point average of 2.0 in required preprofessional coursework completed at USU.

A student can repeat no more than three of the required preprofessional courses in order to satisfy the PTP application and eligibility requirements. Multiple repeats of the same course are included in the total of three repeats. Audits count as a time taking a class unless prior written approval is obtained from the college academic advisor.

Although transfer credit accepted by the department and the college may be applied toward PTP admission requirements, the grades received will not be used in the USU GPA calculation. A final decision on admission of a transfer student into the PTP will not be made until after the applicant has completed at least 15 credits of acceptable coursework at USU.

Eligible students must apply for admission to the PTP during the semester in which they are completing the required preprofessional courses.

For all technology majors in the Professional Program, the following academic regulations apply in addition to University regulations:

1. A minimum GPA of 2.0 must be maintained in technology/math/science/business courses required for, or used as technical electives in, the chosen major. Courses which were part of the preprofessional program requirements and University Studies courses are not included in this GPA calculation.

2. No more than 6 hours of *D* or *D+* credit may be applied toward meeting graduation requirements in technology/math/science/business classes.

3. College of Engineering courses may be repeated only once. Audits count as a time taking a class unless prior written approval is obtained from the department head. A maximum of three required or elective courses completed as part of a Professional Program can be repeated in order to meet graduation requirements. (Courses completed as part of a preprofessional program are not included in this total of three repeats.)

4. The *P-D-F* grading option may not be used in required or elective courses completed as part of a Professional Program. (The *P-D-F* grading option is approved for University Studies courses.)

5. The academic regulations listed above (1-4) apply to required coursework and any technology/math/science/business course which could be used to satisfy graduation requirements for the chosen degree. That is, once a student completes a particular technical elective, it becomes a required course for that student.

6. Students in violation of departmental or college academic regulations, no longer eligible for graduation, or not making satisfactory progress toward a degree, will be placed on probation.

a. Students will be placed on probation if they (i) earn an *F* in a technology/math/science/business course which could be used to satisfy graduation requirements for the chosen degree (see item 5 above); (ii) have more than 6 hours of *D* credit (see item 2 above); or (iii) have a GPA of less than 2.0 (see item 1 above).

b. Students remain on probation until they improve their standing by repeating and passing all failed classes, repeating classes to reduce the number of *D* credits to 6 or less, and/or by raising their GPA above 2.0.

c. While on probation, a student must earn a semester GPA of 2.0 or higher in technology/math/science/business classes and must not earn any grades of *D* or *F*.

While on probation, a student may not preregister. The student's major code will be changed to a preprofessional code. The student must meet at least once per semester with the college academic advisor to work out a schedule having the primary goal of correcting the existing academic problems.

Requirements

Bachelor of Science in Technology and Industrial Education

Technology Education. This emphasis prepares the student to teach in junior and senior high schools. The curriculum requirements include the following: ITE 1000, 1010, 1020, 1030, 1040, 1200, 2030, 2300, 3030, 3050, 3200, 3220, 3300, 3440, 4300, 4400, 5220, 5500, 5630; MATH 1050, 1060; BIS 1400; PHYX 1800; Instructional Technology course (contact advisor for course number); SCED 3100, 3210, 4200, 4210; SPED 4000; ENGL 1010, 2010. Students are also required to complete a technical option (either ITE 1640 *or* ITE 4200). Students in this emphasis also take University Studies courses and electives. See major requirement sheet, available from the department, for further information.

Trade and Technical Education. This emphasis prepares the student to teach applied technology education courses at the high school or post-high school level. The curriculum requirements include the following: technical courses/work experience, 47 credits; professional courses, 27 credits, including INST 5200, ITE 3200, 3300, 3900, 3930, 4300, 4400, 4700, 5220, 5910, SPED 4000; University Studies, 24 credits; general electives, 9 credits; ENGL 1010, 2010; BIS 1400; MATH 1050; SPCH 1050; and STAT 2000.

State licensure requires a minimum of two years of approved vocational experience. Successful completion of a trade competency examination is accepted in lieu of vocational experience.

Bachelor of Science in Aviation Technology—Maintenance Management

Aviation Technology—Maintenance Management graduates are qualified to enter the work force in many rewarding career fields in aviation. Employment opportunities exist in target industries such as major airline carrier maintenance management, commuter airline maintenance management, fixed-base operator (FBO) maintenance, and Federal Aviation Administration (FAA) aircraft inspection after some field experience. This major has a great deal of depth in general maintenance, which applies to most industrial maintenance operations. Although the major's focus is aviation, the knowledge and skills gained can be used in other fields.

The courses for **Aviation Technology—Maintenance Management** are as follows: ITE 1030, 1100, 1130, 1140, 1170, 1200, 1240, 2100, 2110, 2140, 2150, 2170, 2180, 2190, 2200, 2300, 2420, 2430, 2440, 3010, 3120, 3280, 3610, 4200, 4490, 4610, 4620; MATH 1050, 1060, 1100; PHYX 1800; STAT 2300; ENGL 1010, 2010; MHR 3110, 3710; and BIS 1400.

Students in Maintenance Management must also complete 10 credits of technical electives, which must be chosen from upper-division courses. Technical electives include: ITE 3030, 3230, 3410, 4250; BA 3700, 4720. Students in this degree also take University Studies courses and electives. See major requirement sheet, available from the department, for further information.

Bachelor of Science in Aviation Technology—Professional Pilot

Aviation Technology—Professional Pilot graduates are trained to be commercial pilots. The degree requirements include completion of the following FAA licenses: private, instrument, commercial, CFI, CFII, and Multi-Engine. The courses for this specialization are as follows: ITE 1100, 1130, 2170, 2180, 2300, 2330, 2350, 2430, 2510, 2520, 2540, 2550, 2620, 2660, 2720, 2740, 2860, 2880, 3010, 3120, 3140, 4280, 4490, 4660, 5400, 5410; MATH 1050, 1060, 1100; BMET 2000, 3250; ENGL 1010, 2010; BIS 1400, 1550; PHYX 1800; and MHR 3110. Nine credits of upper-division electives are required, chosen from the following list: MHR 3710, 3720; INST 5230, 5400; SOC 3320, 3500; PSY 4240; BIS 4350, 4550; PHIL 3520; and ITE 4250. Also 21 credits of University Studies classes and 7 credits of other electives (including upper-division courses) need to be taken to fulfill requirements for graduation. Prior to taking some of the courses required for this major, students must attain a 2.5 cumulative GPA.

A&P Certificate in Aircraft Maintenance Technician—Airframe & Powerplant. This two-year technical program emphasizes aircraft repair and maintenance. Required courses are: ITE 1030, 1130, 1140, 1170, 1200, 1240, 2100, 2110, 2140, 2150, 2170, 2180, 2190, 2200, 2300, 2420, 2430, 2440, 3280, 4200; MATH 1050, 1060; PHYX 1800; and ENGL 1010. FAA regulations require students to earn a 70 percent or higher score to pass each course.

Graduate Programs

The Master of Science (MS) degree in Industrial Technology is offered by the department. Candidates may choose either the Plan A thesis option or the Plan B nonthesis program.

Admission Requirements

See the general admission requirements for graduate study in this catalog (pages 90-91). Students applying for admission to the MS program must complete the GRE with a minimum quantitative and verbal score of 1,000 and a 40th percentile minimum score on the verbal and quantitative tests or must complete the MAT with a minimum score of 43. Admission committees also consider experience, undergraduate record, and formal recommendations.

MS Degree

The degree is designed for industrial educators who want to strengthen their background in current educational theory and practice. Students are required to complete a professional core of courses relating to technology education or applied technology education and to select additional courses from a list of related courses. Plan A requires a minimum of 30 semester credits, including a thesis. Plan B is a nonthesis option that requires 33 semester credits, including a creative project. The core courses for this specialization are as follows: ITE 6090, 6100, 6150, 6450, and 6750.

Financial Assistance

The department offers a limited number of graduate research and teaching assistantships. For further information, contact the Industrial Technology and Education Department.

Industrial Technology and Education Faculty

Professors

Kurt Becker, technology education, construction technology, computer aided drafting

Edward M. Reeve, technology education, communication technology

Maurice G. Thomas, technology education

Professor Emeritus

Jay C. Hicken, technology education, wood technology, power/energy/transportation

Associate Professors

Ward P. Belliston, computer electronics technology

Gary A. Stewardson, technology education, manufacturing technology

David P. Widauf, aviation technology

Assistant Professor

Kevin S. Garrity, aviation technology, professional pilot

Senior Lecturer

James L. Garrett, aviation maintenance

Lecturers

Randy Chesley, aviation maintenance

Gary R. Green, aviation technology, professional pilot

Chief Flight Instructor

Sean E. Heiner

Course Descriptions

Industrial Technology and Education (ITE), pages 420-424