TECHNOLOGY PROGRAM

Coordinator: To be named (936)294-1191

Faculty: Keith Coogler, Thomas Higgins, Billy Moore, Nedom Muns

Mission

The mission of the Technology Program is to provide an educational program designed to assist students in acquiring the knowledge, skills, and experiences through which they may prepare themselves for rewarding and meaningful roles in a technological society.

Academic Programs

The program offers a Bachelor of Science degree with a major in Industrial Technology with programs in the following areas:

- Construction Management
- Design and Development
- Electronics
- Industrial Education
- Industrial Management

Highlights

The Construction Management Center, located on Avenue M, provides students with hands-on experiences with residential and commercial structures.

Career Opportunities

- Construction management
- Electronics
- Industrial design
- Industrial management
- Industrial education

Technology students learn to draw upon the principles of management, physical sciences, technology of industry, liberal arts and basic engineering for the solution of problems involving industrial products, services, materials and processes, and the supervision and management of personnel.

Suggested Minors

Industrial Technology students typically choose minors from the College of Business such as General Business Administration, Management, Marketing, etc. They also choose minors from the Computer Science department. These are typical minors; however, students should choose a minor that best suits their needs and interests.

Student Organizations

- National Association of Industrial Technology
- National Association of Home Builders

Internships

The internship in industrial technology is intended to provide experience-based learning opportunities for students in their respective discipline of study. Students generally seek internship experience at the end of their sophomore or junior year. The course identified for internship credit in industrial technology is IT 490 - Directed Studies. Internships may be arranged through student contact with providers or through departmental faculty and staff announcements and postings. All internships must receive departmental approval through application prior to the initiation of the internship. Maximum credit for internship is six (6) credit hours.

Scholarships

- **Stephen Randel Scholarship:** Awarded to an outstanding student participating in the Brazos Valley Regional Technology Student Competition held at Sam Houston State University each year during the month of April.
- **Dale Benke Scholarship:** Awarded to an outstanding Sam Houston student majoring in the Technology Program. This award is based on student need, contribution to Sam Houston State University, the Technology Program, and participation in technology-related student clubs/organizations.

Program Specific Requirements

For additional information regarding admission requirements, degree programs, description of courses, and fi nancial assistance available, please refer to the appropriate sections of this catalog. Brochures and information concerning the department and scholarships may be obtained by calling 936-294-1191 or writing: Sam Houston State University, Department of Agricultural Sciences, Industrial Technology Program, Huntsville, Texas 77341-2266. Website: www.shsu.edu/agr.

Curriculum

Major in Industrial Technology
Certification in Teacher Education
Bachelor of Science

First Year	Credit	Second Year	Credit
IT 134, 139, 161, 163	12	IT 166 or 267	3
ENG 164	3	IT or IE Electives	9
Component Area 3	8	MTH	6
Component Area 4 (prefer AGR 299)	3	KIN 215	1
CS 133 or 143	3	Component Area 3 (Second field)	8
MTH or Natural Science	3	HIS 163	3
	32	POL 261	3
			33

Third Year	Credit	Fourth Year	Credit
IT 330, 468	6	IE 464, 491	6
IT or IE electives	3	IT Electives (Adv)	9
SED 374, 383, 392, 394	12	SED 480, 496, 497	9
HIS 164	3	SCM 384 OR 161	3
POL (200-level)	3	Component Area 5 (prefer AGR 236)	3
Component Area 4 (Literature or PHL)	3	Component Area 4 (Cultural Studies)	3
ENG 165	3		33
	33		

No minor is required, but if an additional teaching field is desired, the student must meet the requirements of that teaching field. For the degree of Bachelor of Science and a teaching certificate with an integrated teaching fi eld in technology, the student must complete a minimum of 48 semester hours in Industrial Technology and 18 semester hours in Professional Education. The courses listed above are required of all students who are majoring in Industrial Technology and seeking a teaching certifi cate. The student should refer to the Certification section of this catalog or obtain information in Room 213 of the Teacher Education Center.

Major in Industrial Technology
Certification in Trade and Industry
Bachelor of Science

The Technology Program is approved to offer vocational trades and industry certification courses. These courses may be applied toward certification or a Bachelor of Science degree. Students may enroll in the State required courses as either inservice or preservice employees. Inservice students must complete the required seven courses within two years of employment.

First Year	Credit	Second Year	Credit
IT 139, IE 430, 431	9	IE 463, 464, 479	9
ENG 164, 165	6	IT Electives (Adv)	3
Component Area 3	8	Component Area 3 (Second field)	8
Component Area 4 (prefer AGR 299)	3	MTH (prefer MTH 163 & 170)	6

CS 133 or 143	3	HIS 163	3
MTH or Natural Science	3	POL 261	3
KIN 215	1		32
	33		
Third Year	**Credit**	**Fourth Year**	**Credit**
IE 491, IT 490 (6 hrs. Internship)	9	Component Area 5 (prefer AGR 236)	3
IT Advanced Electives	9	Component Area 4 (Cultural Studies)	3
SCM 384, SED 374	6	Work Experience (12-30 Hrs)	27
Component Area 4 (Literature or PHL)	3		33
HIS 164	3		
POL (200-level)	3		
	33		

The Technology Program provides a number of options for students preparing to enter industry upon graduation. The student may earn a Bachelor of Science degree with a major in Construction, Design and Development, Electronics, or Industrial Management.

Major in Industrial Technology – Construction
Bachelor of Science

First Year	**Credit**	**Second Year**	**Credit**
IT 134, 139, 163, 267	12	IT 263, 368, 370, 371	12
ENG 164, 165	6	Component Area 3 (Second field)	8
Component Area 3	8	HIS 163	3
Component Area 4 (prefer AGR 299)	3	MTH 163, MTH (prefer MTH 170)	6
CS 133 or 143	3	POL 261	3
KIN 215	1		32
	33		

Third Year	**Credit**	**Fourth Year**	**Credit**
IT 330, 372, 468, 470	12	IT 472, 484	6
Minor	12	IT 490 (Internship)	6
Component Area 4 (Literature or PHL)	3	Minor (9 hr adv)	9
HIS 164	3	Component Area 5 (prefer AGR 236)	3
POL (200-level)	3	Component Area 4 (Cultural Studies)	3
	33	MTH or Natural Science	3
			30

Major in Industrial Technology – Design and Development
Bachelor of Science

First Year	**Credit**	**Second Year**	**Credit**
IT 134, 139, 161, 171	12	IT 163, 263, 371, 372	12
ENG 164, 165	6	Component Area 3 (Second field)	8
Component Area 3	8	HIS 163	3
Component Area 4 (prefer AGR 299)	3	MTH 164 or 170, MTH (prefer MTH 163)	6
CS 133 or 143	3	POL 261	3
KIN 215	1		32
	33		

Third Year	**Credit**	**Fourth Year**	**Credit**
IT 330W	3	IT Drafting (Advanced electives)	9
IT Drafting (Advanced electives)	9	IT 472W	3
Minor (3 Advanced hours)	9	Minor (6 advanced hours)	12
Component Area 4 (Literature or PHL)	3	Component Area 5 (prefer AGR 236)	3

on the responsibility of general or prime contractors and specialty contractors. Students will be taught cost estimation and procedures for bidding. Prerequisites: IT 163, 263, Junior classification. Credit 3.

IT 439 Computer-Aided Drafting Productivity. This course is a continuation of IT 139. Using advanced problem-solving exercises; students will customize screen menus, utilize new AutoCAD commands, and develop better fi le management skills. Advance methods and procedures to increase CAD productivity will be emphasized. Additional CAD software will be utilized as it becomes available. Prerequisites: IT 139 and 161 or consent of instructor. Credit 3.

IT 467 Mechanical Modeling. This course consists of the principles and techniques involved in designing and drawing machine parts and other items normally required in an industrial setting. Topics include sectioning, dimensioning, view rotation, symbols, legends, developments, and blueprint details. Prerequisites: IT 139 and 161. Credit 3.

IT 468 Cost Estimating of Construction Materials. This course is devoted to the study of qualities, types, and sizes of materials such as lumber and other wood products, masonry, paint, hardware, ceramic and metal products. In addition cost estimates for materials and labor is studied by fi guring the cost estimate of a small residence. Extensive use is made of actual samples and other visual aids. Prerequisite: 12 hrs. IT courses or consent of instructor. Credit 3.

IT 470 Construction Plans and Documents. This course is designed to give a clear insight into the particular problems of construction and proper construction procedures. The site selection, availability of services, grading, subsurface explorations to determine foundation needs, construction organization, and other activities of construction are presented in logical units. Prerequisites: 12 hours of Industrial Technology or consent of instructor. Credit 3.

IT 472 Industrial Safety. This course is a study of the problems involved in developing an integrated safety program for an industrial or commercial establishment. It involves safety education, safe worker practices, recognition and elimination of health hazards, machinery guards, in-plant traffi c, material handling and emergency treatment for industrial accidents. Writing enhanced. Credit 3.

IT 473 Digital Electronics. This course is a study of the principles and applications of digital logic circuits including logic gates, counters, shift registers, and combinational logic circuits. Laboratory experiences consist of experimental problems. Prerequisite: IT 235 or consent of instructor. Credit 3.

IT 477 Computer Numerical Control Programming and Application. This course is designed to provide students with an in-depth study of numerical control programming practices as used in industry. Areas of study will include the development of numerical control, programming methods, tooling for numerical control and a study of CNC in manufacturing and production. Prerequisite: IT 166 or consent of instructor. Credit 3.

IT 480 Material Handing and Plant Layout. This course is the study of the basic requirements needed to develop the most efficient layouts of equipment and of operating and service facilities whether in manufacturing plants, warehouses, or other industrial or business applications. Special emphasis is on the necessary coordination between plant layout, materials handling, work simplifi cation and production planning, and operation control. Credit 3.

IT 484 Supervisory Personnel Practices. This course introduces students to the principles of management as pertaining to personnel. Responsibilities of management, industrial economics, supervisory information, training, group dynamics, work simplification, labor and human relations, working conditions, morale, motivation, and mental health are covered. Writing enhanced. Credit 3.

IT 488 Technical Illustration. A study and application of the tools, skills, standards and opportunities associated with the fi eld of technical illustration. Prerequisites: IT 139, 161 plus 6 hrs. drafting. Credit 3.

IT 490 Directed Studies. Designed to provide students with the opportunity to gain specialized experience in one or more of the following areas: internship, laboratory procedures, individualized study, innovative curricula, workshops, specialized training schools, and seminars. Internship is required of all teacher education majors. Writing enhanced. Prerequisite: Junior or senior standing. May be repeated or taken concurrently to a maximum of 9 hours. Variable credit.