

## DEPARTMENT OF INDUSTRIAL TECHNOLOGIES

The academic disciplines of Construction Technology (CONS) and Drafting and Design Technology (DRFT) are offered through the Department of Industrial Technologies. **The Bachelor of Science (B.S.) in Industrial Technology is offered at the undergraduate level, and the Master of Science (M.S.) in Industrial Technology is offered at the graduate level.** Supporting courses in Cooperative Education (COE), Industrial Technology (ITEC), and Automated Manufacturing Technology (MFG) are also offered through the Department. **Two minors are offered for students pursuing majors in other academic disciplines and who are required to declare a minor in a second academic discipline for graduation. One minor is offered in Industrial Technology, and the other minor is offered in Community Development.** Members of the Department are housed on the second floor of the Leonard H.O. Spearman Technology Building with the Department Office located in Room 211.

**Students who are interested in the Master of Science in Industrial Technology should refer to the Graduate School Bulletin of Texas Southern University for further information.**

In seeking the B.S. in Industrial Technology through this unit, students may select from two (2) different curriculum tracks that focus on one of the following areas of concentration: Construction Technology or Design Technology. **Students are not required to declare a minor in a second academic discipline in selecting one of the available tracks.** Detailed information on both tracks leading to the B.S. in Industrial Technology is provided below.

The primary mission of the Department is to offer programs of study designed to prepare students as “management-oriented technical professionals” who have practical knowledge, competencies, skills, and training to serve and function in the Industrial/Manufacturing Enterprise System. In pursuing this mission, the Department seeks to prepare Industrial Technologists and Technical Managers for career opportunities in the Manufacturing, Construction, and Communications Industries.

Students wishing to earn the B.S. in Industrial Technology (that is, students who wish to declare undergraduate majors in the Department) must first gain admission to the University, must satisfy ASSET requirements and eradicate identified deficiencies through the General University Academic Center (GUAC), must contact the Department Office while satisfying ASSET requirements for advisement, and must petition the Department for admission once ASSET requirements have been completed and deficiencies removed. Students wishing to minor in Industrial Technology should contact the Department Office once they have been admitted as majors in other academic units of the University and have met all ASSET requirements. **Prior to graduation, majors must pass an exit examination during their senior year.**

**For the minor in Industrial Technology, twenty-one (21) semester credit hours must be completed with grades of “C” or better (grades below “C”, including “C-”, are unacceptable).** Fifteen (15) of the twenty-one (21) credits must be selected from one of three academic disciplines offered through the unit: CONS, DRFT, or MFG. Three (3) additional semester credit hours must be selected from a second of these three disciplines. The last three (3) semester credit hours required must be taken through enrollment in one of the following: ITEC 331, ITEC 333, or ITEC 439. Minors must also complete the following two (2) Mathematics courses or their equivalents in conjunction with the designated twenty-one (21) semester credit hours above and with the same grade restrictions: MATH 133 (3 credits) and MATH 134 (3 credits). All programs of study for minors must be approved, in advance, by the Faculty Chair prior to enrollment in courses.

**The minor in Community Development** represents a comprehensive, interdisciplinary approach that includes courses offered through the unit, as well as courses offered through other units at the University. **A total of twenty-one (21) semester credit hours must be completed** which are broadly apportioned between theoretical knowledge (18 credits) and experiential learning (3 credits). **Courses enrolled for in seeking this minor must be completed with grades of “C” or better where grades below “C”, including “C-”, are unacceptable.** Students seeking the Community Development minor are required to enroll in the following courses offered through this unit: ITEC 131 (3 credits), ITEC 335 (3 credits), CONS 344 (3 credits), CONS 435 (3 credits), and COE 333 (3 credits). Outside of this unit, students are required to complete the following two courses in order to complete the minor: SOC 337 (3 credits) and MGMT 400 (3 credits).

**Course descriptions and detailed programs of study (including the sequencing of courses that must be taken) follow this section. Grades less than “C”, including “C-”, are unacceptable in courses specific to the major. Students requiring additional information should contact the Department Office either directly or by calling (713)-313-7679.**

**LISTING OF FACULTY IN THE DEPARTMENT**

<p><b>Horner, Jessie E.</b>  <b>Associate Professor</b>          B.S., Northwestern State University          M.S., Texas Southern University          Ed.D., University of Houston</p>	<p><b>Lott, Carl B.</b>  <b>Assistant Professor</b>          B.S., M.S., Ed.D., Texas Southern University</p>
<p><b>Lewis, J. Jonathan, CSIT</b>  <b>Associate Professor</b>          A.A., Kingsboro College          B.B.A., Jones College          M.S., Ed.D., Texas Southern University</p>	<p><b>Osakue, Edward E.</b>  <b>Assistant Professor</b>          B.Eng., University of Benin          M.Eng., University of Benin          Ph.D., University of New Brunswick</p>

## CONSTRUCTION TECHNOLOGY COURSES

- CONS 131 Introduction to Construction Development (3)**  
Introduction to the overall construction industry to include history, career opportunities, entrepreneurship, types of construction, differences in office and jobsite working conditions, plan reading and vocabulary. Three hours of lecture per week
- CONS 141 Construction Materials and Methods (3)**  
Sources, properties, acceptable and recommended applications of industrial materials in the construction industry. Two hours of lecture week and two hours of laboratory per week.
- CONS 242 Framing Principles (3)**  
Foundation and wall framing techniques essential to residential and light commercial construction and construction details involving form building, bracing, steps, and geometry of roofing systems. One hour of lecture and four hours of lab per week. Prerequisite: CONS 141.
- CONS 243 Energy Efficiency and Construction (3)**  
Sizing, designing, and laying out of electrical and mechanical systems for maximum efficiency in residential and light commercial buildings. Solar and alternative energy emphasized. One hour of lecture and four hours of lab per week. Prerequisite: CONS 242.
- CONS 244 Construction Safety (3)**  
Examination of specialized procedures in health, safety, and environmental protection and lost prevention for the construction industry. Requirements of OSHA and other federal and state standards and regulations emphasized. Three hours of lecture per week.
- CONS 331 Models and Presentations (3)**  
Three-dimensional requirements for models using computer-aided drafting techniques and cardboard, plastic, and wood media. Plan reading, scaling, and sketching emphasized. One hour of lecture and four hours of laboratory per week. Prerequisites: DRFT 133, DRFT 232 and CONS 242.
- CONS 333 Quantity Surveying (3)**  
Quantity surveying for construction and engineering along with bid preparation and analysis where computer applications are emphasized. Two hours of lecture and two hours of laboratory per week. Prerequisite: Consent of the instructor.
- CONS 334 Concrete Technology (3)**  
Methods for forming concrete, concrete elements and handling, and reinforced concrete. One hour of lecture and four hours of laboratory per week. Prerequisites: CONS 242 and DRFT 133.
- CONS 341 MEPFI Systems (3)**  
Introduction to Mechanical, Electrical, Plumbing, Fire and information distribution systems found in the design and building phases of construction. Emphasis on how these systems support occupant's use; climate specific issues and the impact of these distributions systems on their uses. Two hours of lecture and two hours of laboratory per week. Prerequisites: CONS 242 and DRFT 232 or the equivalents.
- CONS 344 Construction Management I (3)**  
Study of the principles of construction systems management with emphasis on stages of construction, management information systems, and operations management. One hour of lecture and four hours of laboratory per week. Prerequisite: CONS 334.
- CONS 433 Estimating (3)**  
Instruction in making materials and labor estimates for residential and light commercial buildings primarily from the use of working drawings. One hour of lecture and four hours of laboratory per week. Prerequisites: CONS 242 and DRFT 232 or the equivalents.

- CONS 435**                      **Contracts and Specifications**                      **(3)**  
 Legal aspects of contracts, specifications, and legal documents along with bidding procedures. Students required to develop contract documents and specifications. Two hours of lecture and two hours of laboratory per week. Prerequisites: Senior standing and consent of the Faculty Chair or instructor.
- CONS 436**                      **Construction Management II**                      **(3)**  
 Management functions, by which construction projects are authorized, financed, supervised, and closed out. Emphasis on the development of effective supervisory and managerial techniques using computer databases. Two hours of lecture and two hours of laboratory per week. Prerequisite: Senior standing or consent of the instructor.
- CONS 437**                      **Construction Problems**                      **(3)**  
 Independent, in-depth study and analysis of special problems related to construction where students must use critical and creative thinking skills for formulating solutions. Three hours of lecture per week. Prerequisites: Senior standing and consent of the instructor.
- CONS 451**                      **Mechanical Systems**                      **(3)**  
 Principles of air conditioning and heating systems used in commercial and residential buildings with emphasis on planning and designing systems. One hour of lecture and four hours of laboratory per week. Prerequisite: Consent of the instructor.
- CONS 475**                      **Facilities Management**                      **(3)**  
 Techniques in the overall management and maintenance of facilities such as schools, housing projects, and municipal buildings. Organization, supervision, and life cycle costing using computer applications emphasized. Two hours of lecture and two hours of laboratory per week. Prerequisite: Senior level or Consent of the instructor.

#### DRAFTING AND DESIGN TECHNOLOGY COURSES

- DRFT 131**                      **Fundamentals of Drafting**                      **(3)**  
 Emphasis on geometric construction, freehand sketching, orthographic and axonometric projections. Introduction to computer aided drafting included. One hour of lecture and four hours of laboratory per week.
- DRFT 132**                      **Descriptive Geometry**                      **(3)**  
 Folding line relationships and notations, auxiliary views, angles between plane revolutions, and intersections. One hour of lecture and four hours of laboratory per week. Prerequisite: DRFT 131.
- DRFT 133**                      **Architectural Drafting**                      **(3)**  
 Fundamental architectural drafting practices related to developing working drawings for residential and light commercial buildings. One hour of lecture and four hours of laboratory per week. Prerequisite: DRFT 131. **Listed as ARCH 2201 in the Texas Common Course Numbering System.**
- DRFT 134**                      **Mechanical Drawing**                      **(3)**  
 Emphasis on orthographic and auxiliary projection, threads and fasteners, machine drawings and perspectives. One hour of lecture and four hours of laboratory per week. Prerequisite: DRFT 131.
- DRFT 136**                      **Architectural Rendering**                      **(3)**  
 Artistic requirements in architecture, including emphasis on perspectives, shapes, shadows, and color presentations. One hour of lecture and four hours of laboratory per week. Prerequisite: DRFT 133.
- DRFT 231**                      **Pipe Drafting**                      **(3)**  
 Piping terminology, charts, tables, and practices in providing single and double line drawings. One hour of lecture and four hours of laboratory per week. Prerequisite: DRFT 134.

DRFT 232	<b>Architectural Design</b> (3) Study of the influences, which determine the appearances of architectural structures. One hour of lecture and four hours of laboratory per week. Prerequisite: DRFT 133.
DRFT 233	<b>Introduction to Computer-Aided Design</b> (3) Basic concepts, operations, and procedures necessary for producing engineering drawings on the computer. One hour of lecture and four hours of laboratory per week. <b>Listed as ARCH 1315 in the Texas Common Course Numbering System.</b>
DRFT 331	<b>Pipe System Design</b> (3) Problems in piping design-utilizing vendor furnished equipment specifications and drawings, Smoley's tables, and related control documents. One hour of lecture and four hours of laboratory per week. Prerequisite: DRFT 231. Offered as needed.
DRFT 333	<b>Machine Design</b> (3) Theory and practice of design characteristics of studying gears, cams, and complete assembly drawings of small machines. One hour of lecture and four hours of laboratory per week. Prerequisites: DRFT 134. <b>Offered as needed.</b>
DRFT 336	<b>Computer-Aided Design</b> (3) Advanced concepts of computer-aided design (CAD) utilizing the more complex capabilities of the equipment and software. One hour of lecture and four hours of laboratory per week.
DRFT 430	<b>Advanced Computer-Aided Design</b> (3) Continuation of DRFT 233 with emphasis on advanced solid modeling and detailed assembly. One hour of lecture and four hours of laboratory per week. Prerequisite: DRFT 233.
DRFT 431	<b>Structural Drafting and Design</b> (3) Fabrication, connectors and seats for beams, girders, columns, and trusses adhering to AISC standards. One hour of lecture and four hours of laboratory per week. Prerequisites: DRFT 133 and consent of the instructor.
DRFT 432	<b>Senior Design Project</b> (3) Integration of previous knowledge in the development of a design project. One hour of lecture and four hours of laboratory per week. Prerequisites: Senior standing and consent of the Faculty Chair.

#### INDUSTRIAL TECHNOLOGY COURSES

ITEC 111	<b>Orientation</b> (1) Orientation to the College of Science and Technology and the University with discussion of career opportunities available in industrial and engineering technology and related area. One hour of lecture per week.
ITEC 131	<b>Introduction to Community Development</b> (3) Introduction to community development with emphasis on community development issues: new construction and rehabilitation, residential and commercial development, and business development. Three hours of lecture per week.
ITEC 331	<b>Technical Writing</b> (3) Techniques of collecting and presenting technical and scientific data, including definitions, evaluations, basic letters, abstracts, memoranda, and written reports. Three hours of lecture per week. Prerequisites: ENG 131 and 132.
ITEC 333	<b>Industrial Supervision and Management</b> (3) Study of management and supervision skills and concepts to enhance interpersonal relationships and motivational factors necessary for productivity in an organized industrial environment. Three hours of lecture per week. Prerequisites: Junior standing and consent of the Faculty Chair.

- ITEC 335**                      **Community Development Finance**                      **(3)**  
 Explores the financial skills required for the successful operation of a community development corporation within the context of overall economic development finance. Three hours of lecture per week. Prerequisite: ITEC 131.
- ITEC 412**                      **Senior Seminar**                      **(1)**  
 Organized to help senior students prepare to exit the University and to become employed. Emphasis on interviewing skills and resume preparation. One hour of lecture per week. Prerequisites: Senior standing and consent of the Faculty Chair.
- ITEC 439**                      **Industrial Safety**                      **(3)**  
 Study of safety management and enforcement techniques in an industrial environment with emphasis on personal safety. Three hours of lecture per week. Prerequisites: Senior standing and consent of the Faculty Chair.

#### AUTOMATED MANUFACTURING TECHNOLOGY COURSES

- MFG 131**                      **Manufacturing Technology I**                      **(3)**  
 Manufacturing processes for industrial plastics, wood, and wood composite materials. Production methods, process equipment, tooling, jogs, and fixtures for plastics, wood, and wood composites used in manufacturing. One hour of lecture and four hours of laboratory per week.
- MFG 231**                      **Manufacturing Processes**                      **(3)**  
 Study of engineering materials and processes as they pertain to the manufacture of industrial products. Three hours of lecture per week.
- MFG 232**                      **Manufacturing Technology II**                      **(3)**  
 Manufacturing processes for ferrous and non-ferrous metals. Precision machine tool operations, including grinding, drilling, shaping, milling, and turning. One hour of lecture and four hours of laboratory per week. Prerequisite: MFG 131.
- MFG 331**                      **CNC Computer Programming**                      **(3)**  
 Theory of computer-aided parts programming. Methods of programming CNC machines; set up and operation with emphasis on two, three, and multiple axis machines, mills, lathes, and robots. One hour of lecture and four hours of laboratory per week. Prerequisite: Consent of the instructor.
- MFG 332**                      **Robotics Technology**                      **(3)**  
 Automated technology through the use of industrial robots; theory of electromechanical, hydraulic, and pneumatic robots in manufacturing; robots for processing, assembly, and material handling. One hour of lecture and four hours of laboratory per week. Prerequisite: MFG 331.
- MFG 333**                      **Strength of Materials**                      **(3)**  
 Study of the physical properties of a variety of industrial materials. One hour of lecture and four hours of laboratory per week. Prerequisites: Junior standing and consent of the instructor.
- MFG 432**                      **Flexible Manufacturing Systems**                      **(3)**  
 Introduction to computer integrated manufacturing and flexible manufacturing systems. Planning, organization, and management of automated computer controlled systems. One hour of lecture and four hours of laboratory per week. Prerequisite: MFG 331.
- MFG 433**                      **Manufacturing Technology Problems**                      **(3)**  
 Individual study of problems in an industrial setting with regard to personnel, material, equipment, and facilities as they relate to manufacturing. One hour of lecture and four hours of laboratory per week. Prerequisites: Senior standing and consent of the instructor.



Bachelor of Science Degree in Industrial Technology  
 Construction Technology  
 National Association of Industrial Technology (NAIT) Approved  
 Four Year Degree Plan - Total Credits: 125

First Year			
First Semester		Second Semester	
CONS 131 Intro to Const Develop	3	CONS 141 Methods and Materials II	3
CS 116 Intro to Computer Science I Lec	3	DRFT 132* Descriptive Geometry	3
ENG 131* Freshman English I	3	ELET 111 DC Circuits Lab	1
GEOL 141 Geology Lec and Lab	4	ELET 131 DC Circuits Lec	3
ITEC 111 Orientation	1	ENG 132 Freshman English II	3
MATH 133* College Algebra	3	MATH 134 Trigonometry	3
	17 hrs		16 hrs

Second Year			
Third Semester		Fourth Semester	
ART 131 Drawing and Composition I	3	CONS 334 Concrete Technology	3
CIVT 231 Surveying I	3	DRFT 133 Architectural Drafting	3
CONS 242 Framing Principles	3	HIST 232 Social & Political History of the United States since 1877	3
ENG 2xx Upper level English	3	POLS 232 American Political Systems II	3
HIST 231 Social & Political History of the United States to 1877	3	PHYS 213/237 College Physics I Lec and Lab	4
POLS 231 American Political Systems I	3		
	18 hrs		16 hrs

Third Year			
Fifth Semester		Sixth Semester	
ECON 231 Principles of Economics	3	ACCT 231 Principles of Accounting	3
CONS 333 Quantity Surveying	3	CONS 341 (MEPFI) Intro to Mechanical, Electrical, Plumbing, Fire and Information distribution Systems	3
CONS 344 Construction Management I	3	CONS 433 Estimating	3
ITEC 331 Technical Writing	3	CONS 435 Contracts and Specifications	3
ITEC 333 Supervision and Management	3	SC 135 or 136 Business & Professional Communication or Public Address	3
MFG 333 Strength of Materials	3	Elective**	3
	18 hrs		18 hrs

Fourth Year			
Seventh Semester		Eighth Semester	
COE 433 Cooperative Education	3	CONS 437 Construction Problems	3
CONS 436 Construction Management II	3	ITEC 412 Senior Seminar	1
CONS 475 Facilities Management	3	ITEC 439 Industrial Safety	3
DRFT 431 Structural Drafting and Design	3	Elective**	3
		Comprehensive Examination	
	12 hrs		10 hrs

\*Pending acceptable score on English and Mathematics Placement Examination and Drafting 131.

\*\*Elective courses for Industrial Technology majors pursuing the Construction Technology Track include: MGMT 300 (3), MGMT 400 (3), CIVT 224 (3), CONS 244 (3), CONS 451 (3), and DRFT 232 (3)

Bachelor of Science Degree in Industrial Technology  
 Construction Technology  
 National Association of Industrial Technology (NAIT) Approved  
 Five Year Degree Plan - Total Credits: 125

First Semester		Second Semester	
ART 131 Drawing and Composition I	3	CONS 141 Methods and Materials II	3
CONS 131 Intro to Const Develop	3	DRFT 132* Descriptive Geometry	3
CS 116 Intro to Computer Science I Lec	3	ELET 111 DC Circuits Lab	1
ENG 131* Freshman English I	3	ELET 131 DC Circuits Lec	3
ITEC 111 Orientation	1	ENG 132 Freshman English II	3
	13 hrs		13 hrs

Third Semester		Fourth Semester	
ECON 231 Principles of Economics	3	ENG 2xx Upper Level English	3
DRFT 133 Architectural Drafting	3	GEOL 141 Geology Lab and Lec	4
HIST 231 Social & Political History of the United States to 1877	3	HIST 232 Social & Political History of the United States to 1877	3
MATH 133* College Algebra	3	MATH 134 Trigonometry	3
	12 hrs		13 hrs

Fifth Semester		Sixth Semester	
CIVT 231 Surveying I	3	ACCT 231 Principles of Accounting	3
CONS 242 Framing Principles	3	ITEC 331 Technical Writing	3
POLS 231 American Political Systems I	3	POLS 232 American Political Systems II	3
SC 135 or 136 Business & Professional Communication or Public Address	3	PHYS 213/237 College Physics I Lec and Lab	4
	12 hrs		13 hrs

Seventh Semester		Eighth Semester	
CONS 333 Quantity Surveying	3	CONS 334 Concrete Technology	3
CONS 344 Construction Management I	3	CONS 341 (MEPFI) Intro to Mechanical, Electrical, Plumbing, Fire and Information distribution Systems	3
DRFT 431 Structural Drafting and Design	3	ITEC 333 Supervision and Management	3
MFG 333 Strength of Materials	3	ITEC 439 Industrial Safety	3
	12 hrs		12 hrs

Ninth Semester		Tenth Semester	
COE 433 Cooperative Education	3	CONS 433 Estimating	3
CONS 436 Construction Management II	3	CONS 435 Contracts and Specifications	3
CONS 437 Construction Problems	3	ITEC 412 Senior Seminar	1
CONS 475 Facilities Operations	3	Elective**	3
Elective**	3	Comprehensive Examination	
	15 hrs		10 hrs

\*Pending acceptable score on English and Mathematics Placement Examination and Drafting 131.

\*\*Elective courses for Industrial Technology majors pursuing the Construction Technology Track include: MGMT 300 (3), MGMT 400 (3), CIVT 224 (3), CONS 244 (3), CONS 451 (3), and DRFT 232 (3)

Bachelor of Science Degree in Industrial Technology  
 Construction Technology  
 National Association of Industrial Technology (NAIT) Approved  
 Six Year Degree Plan - Total Credits: 125

First year			
First Semester		Second Semester	
ART 131 Drawing and Composition I	3	CONS 141 Materials and Methods	3
CONS 131 Introduction to Cons Development	3	DRFT 132* Descriptive Geometry	3
CS 116 Introduction to Computer Science	3	ELET 111 DC Circuits Lab	1
ENG 131* Freshman English I	3	ELET 131 DC Circuits Lec	3
ITEC 111 Orientation	1	ENG 132 Freshman English II	3
	13 hrs		13 hrs
Second Year			
Third Semester		Fourth Semester	
ENG 2xx Upper level English	3	MATH 134 Trigonometry	3
MATH 133* College Algebra	3	HIST 232 Social & Political History of the United States since 1877	3
HIST 231 Social & Political History of the United States to 1877	3	POLS 232 American Political Systems II	3
POLS 231 American Political Systems I	3	SC 135 or 136 Business & Professional Communication or Public Address	3
	12 hrs		12 hrs
Third Year			
Fifth Semester		Sixth Semester	
CIVT 231 Surveying I	3	ACCT 231 Principles of Accounting	3
CONS 242 Framing Principles	3	CONS 334 Concrete Technology	3
DRFT 133 Architectural Drafting	3	ECON 231 Principles of Economics	3
GEOL 141 Geology Lec and Lab	4	PHYS 213/237 College Physics I Lec and Lab	4
	13 hrs		13 hrs
Fourth Year			
Seventh Semester		Eighth Semester	
CONS 333 Quantity Surveying	3	CONS 433 Estimating	3
CONS 341 (MEPFI) Intro to Mechanical, Electrical, Plumbing, Fire and Information distribution Systems	3	ITEC 331 Technical Writing	3
MFG 333 Strength of Materials	3	ITEC 439 Industrial Safety	3
	9 hrs		9 hrs
Fifth Year			
Ninth Semester		Tenth Semester	
COE 433 Cooperative Education	3	CONS 436 Construction Management II	3
CONS 344 Construction Management I	3	CONS 437 Construction Problems	3
ITEC 333 Supervision and Management	3		
	9 hrs		6 hrs
Sixth Year			
Eleventh Semester		Twelfth Semester	
DRFT 431 Structural Drafting	3	CONS 435 Contracts and Specifications	3
CONS 475 Facilities Operations	3	ITEC 412 Senior Seminar	1
Elective**	3	Elective**	3
	9 hrs		7 hrs

\*Pending acceptable score on English and Mathematics Placement Examination and Drafting 131.

\*\*Elective courses for Industrial Technology majors pursuing the Construction Technology Track include: MGMT 300 (3), MGMT 400 (3), CIVT 224 (3), CONS 244 (3), CONS 451 (3), and DRFT 232 (3)

Bachelor of Science Degree in Industrial Technology  
 Design Technology  
 National Association of Industrial Technology (NAIT) Approved  
 Four Year Degree Plan - Total Credits: 125

First Year			
First Semester		Second Semester	
CS 116 Introduction to Computer Science I	3	CONS 141 Methods and Materials II	3
DRFT 131 Fundamentals of Drafting	3	DRFT 132 Descriptive Geometry	3
ENG 131* Freshman English I	3	ELET 111 DC Circuits Lab	1
ITEC 111 Orientation	1	ELET 131 DC Circuits Lec	3
MATH 133* College Algebra	3	ENG 132 Freshman English II	3
PSY 131 Introduction to Psychology	3	MATH 134 Trigonometry	3
	16 hrs		16 hrs

Second Year			
Third Semester		Fourth Semester	
CHEM 111 General Chemistry I Lab	1	DRFT 134 Mechanical Drafting	3
CHEM 131 General Chemistry I Lec	3	DRFT 232 Architectural Design	3
DRFT 133 Architectural Drafting	3	MATH 135 Math for Business & Econ Analy	3
DRFT 231 Pipe Drafting	3	PHYS 213/237 College Physics I Lab and Lec	4
ENG 2xx Upper level English	3	SC 135 Business & Professional Communication	3
MFG 231 Manufacturing Processes	3		
	16 hrs		16 hrs

Third Year			
Fifth Semester		Sixth Semester	
ACCT 231 Principles of Accounting	3	ART 131 Drawing and Composition I	3
CONS 333 Quantity Surveying	3	DRFT 336 Computer Aided-Design	3
DRFT 233 Basic Computer Drafting	3	HIST 232 Social & Political History of the United States since 1877	3
HIST 231 Social & Political History of the United States to 1877	3	ITEC 331 Technical Writing	3
MFG 333 Strength of Material	3	POLS 232 American Political Systems II	3
POLS 231 American Political Systems I	3		
	18 hrs		15 hrs

Fourth Year			
Seventh Semester		Eighth Semester	
DRFT 333 Machine Design	3	DRFT 430 Advanced Computer-Aided Design	3
DRFT 431 Structure Drafting	3	DRFT 432 Senior Design Project	3
ENGT 431 Quality Control & Assurance	3	ITEC 412 Senior Seminar	1
ITEC 333 Supervision and Management	3	ITEC 439 Industrial Safety	3
Elective	3	Elective	3
		Comprehensive Exam	
	15 hrs		13 hrs

\*Pending acceptable score on English and Mathematics Placement Examinations.

Bachelor of Science Degree in Industrial Technology  
 Design Technology  
 National Association of Industrial Technology (NAIT) Approved  
 Five Year Degree Plan - Total Credits: 125

First Year			
First Semester		Second Semester	
CS 116 Introduction to Computer Science I	3	DRFT 132 Descriptive Geometry	3
DRFT 131 Fundamentals of Drafting	3	ELET 111 DC Circuits Lab	1
ENG 131* Freshman English I	3	ELET 131 DC Circuits Lec	3
ITEC 111 Orientation	1	ENG 132 Freshman English II	3
MATH 133* College Algebra	3	MATH 134 Plane Trigonometry	3
	13 hrs		13 hrs

Second Year			
Third Semester		Fourth Semester	
CHEM 111 General Chemistry I Lab	1	CONS 141 Methods and Materials	3
CHEM 131 General Chemistry I Lec	3	DRFT 134 Mechanical Drafting	3
DRFT 133 Architectural Drafting	3	DRFT 232 Architectural Design	3
MATH 135 Math for Business & Econ Analysis	3	ENG 2xx Upper level English	3
PSY 131 Introduction to Psychology	3		
	13 hrs		12 hrs

Third Year			
Fifth Semester		Sixth Semester	
DRFT 231 Pipe Drafting	3	ACCT 231 Principles of Accounting	3
DRFT 233 Basic Computer Drafting	3	HIST 232 Social & Political History of the United States since 1877	3
MFG 231 Manufacturing Processes	3	PHYS 213/237 College Physics I Lab and Lec	4
HIST 231 Social & Political History of the United States to 1877	3	SC 135 Business & Professional Communication	3
	12 hrs		13 hrs

Fourth Year			
Seventh Semester		Eighth Semester	
DRFT 333 Machine Design	3	ART 131 Drawing and Composition I	3
ITEC 333 Supervision and Management	3	DRFT 336 Computer Aided Design	3
MFG 333 Strength of Materials	3	ITEC 331 Technical Writing	3
POLSC 231 American Political System I	3	POLSC 232 American Political System II	3
	12 hrs		12 hrs

Fifth Year			
Ninth Semester		Tenth Semester	
CONS 333 Quantity Surveying	3	DRFT 430 Advanced CAD	3
DRFT 431 Structural Drafting and Design	3	DRFT 432 Senior Design Project	3
ENGT 431 Quality Control and Assurance	3	ITEC 412 Senior Seminar	1
Elective	3	ITEC 439 Industrial Safety	3
		Elective	3
	12 hrs		13 hrs

\*Pending acceptable score on English and Mathematics Placement Examinations

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First Year			
First Semester		Second Semester	
CS 116 Introduction to Computer Science	3	DRFT 132 Descriptive Geometry	3
DRFT 131 Fundamentals of Drafting	3	ELET 111 DC Circuits Lab	1
ENG 131* Freshman English I	3	ELET 131 DC Circuits Lec	3
ITEC 111 Orientation	1	ENG 132 Freshman English II	3
MATH 133* College Algebra	3	MATH 134 Trigonometry	3
	13 hrs		13 hrs

Second Year			
Third Semester		Fourth Semester	
CHEM 111 General Chemistry I Lab	1	CONS 141 Methods and Materials	3
CHEM 131 General Chemistry I Lec	3	DRFT 134 Mechanical Drafting	3
DRFT 133 Architectural Drafting	3	PSY 131 General Psychology	3
ENG 2xx	3	SC 135 Business & Professional Communication	3
POLS 231 American Political Systems I	3		
	13 hrs		12 hrs

Third Year			
Fifth Semester		Sixth Semester	
DRFT 233 Basic Computer Drafting	3	ACCT 231 Principles of Accounting	3
DRFT 231 Pipe Drafting	3	DRFT 232 Architectural Design	3
MATH 135 Math for Business & Econ Analysis	3	POLS 232 American Political Systems II	3
HIST 231 Social & Political History of the United States to 1877	3	PHYS 213/237 College Physics I Lec and Lab	4
	12 hrs		13 hrs

Fourth Year			
Seventh Semester		Eighth Semester	
ITEC 333 Supervision and management	3	DRFT 336 Computer Aided-Design	3
MFG 231 Manufacturing Processes	3	HIST 232 Social & Political History of the United States since 1877	3
MFG 333 Strength of Materials	3	ITEC 331 Technical Writing	3
	9 hrs		9 hrs

Fifth Year			
Ninth Semester		Tenth Semester	
CONS 333 Quantity Surveying	3	ART 131 Drawing and Composition I	3
DRFT 333 Machine Design	3	DRFT 430 Advanced CAD	3
DRFT 431 Structural Drafting	3	ITEC 439 Industrial Safety	3
		ITEC 412 Senior Seminar	1
	9 hrs		10 hrs

Sixth year			
Eleventh Semester		Twelfth Semester	
ENGT 431 Quality Control and Assurance	3	DRFT 432 Senior Design Project	3
Elective	3	Elective	3
		Comprehensive Examination	
	6 hrs		6 hrs

\*Pending acceptable score on English and Mathematics Placement Examinations.