

## **Bachelor of Science in Industrial Technology With a Minor in Business Administration (2010)**

### **General Education (30 hr)**

ENGL 1301 Rhet & Comp .....(3 hr)  
 ENGL 1302 Rhet & Comp .....(3 hr)  
 HIST 1301 US History.....(3 hr)  
 HIST 1302 US History.....(3 hr)  
 POLS 2301 US Govt.....(3 hr)  
 POLS 2302 Texas Govt .....(3 hr)  
 ^Cultural Elective.....(3 hr)  
 ^Fine Arts Elective.....(3 hr)  
 ^Communications Elective.....(3 hr)  
 ^Global Learning Elective.....(3 hr)

### **Mathematics (6 hr)**

MATH<sup>4</sup> ..... (3 hr)  
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### **Science (7-8 hrs)**

Any CHEM<sup>1</sup> .....(4 hr)  
 Any PHYS<sup>2</sup>.....(3-4 hr)

### **Business Component (24 hr)**

CISA 2302 Computer Info Sys.....(3 hr)  
 ACCT 2301 Fund. of Acct I .....(3 hr)  
 ACCT 2302 Fund. of Acct II .....(3 hr)  
 ECON 2301 Principles of Eco I.....(3 hr)  
 ECON 2302 Principles of Eco II ... (3 hr)  
 MGMT 3311 Principles of Mgmt (3 hr)  
 MKTG 3361 Principles of Mktg....(3 hr)  
 BLAW 3341 Business Law.....(3 hr)

### **Industrial Technology (53 hr)**

ITEN 1201 Careers in Industrial Tech'.....(2 hr)  
 ITEN 1311 Technical CAD .....(3 hr)  
 ITEN 1315 Metalworking Processes.....(3 hr)  
 ITEN 2301 Industrial Electronics .....(3 hr)  
 ITEN 2320 Industrial Materials .....(3 hr)  
 ITEN 2330 OSHA for General Industry .....(3 hr)  
 ITEN 3300 Manufacturing Technology OR  
 ITEN 3331 Construction Technology .....(3 hr)  
 ITEN 3310 Fluid Power OR  
 ITEN 3313 Energy & Power Technology ....(3 hr)  
 ITEN 3315 CAD/CAM .....(3 hr)  
 ITEN 3323 Cost Estimating OR  
 ITEN 3324 Industrial Controls .....(3 hr)  
 ITEN 3349 Manufacturing Productivity .....(3 hr)  
 ITEN 4352 Quality Assurance .....(3 hr)  
 ITEN Elective<sup>3</sup> (Upper Division) .....(3 hr)  
 ITEN Elective<sup>3</sup> (Upper Division) .....(3 hr)  
 ITEN Elective<sup>3</sup> (Upper Division) .....(3 hr)  
 ITEN Elective<sup>3</sup> (Upper Division) .....(3 hr)  
 ITEN Elective<sup>3</sup> (Upper Division) .....(3 hr)  
 ITEN Capstone Elective<sup>5</sup> (Upper Div.) .....(3 hr)

### **Minimum GPAs to Graduate**

Overall  $\geq$  (2.00) Science/Math  $\geq$  (2.00)  
 Ind. Tech  $\geq$  (2.50) Business  $\geq$  (2.00)

**Total Hours: 120 (At least 45 semester hours must be advanced courses.)**

Additional Notes:

\* For courses listed under Core Curriculum "General Education with ^ indicator" see "General Requirements for Graduation with a Baccalaureate Degree" of the 2008-2010 catalog or backside of this handout.

<sup>1</sup> Any chemistry course with a laboratory will meet this requirement provided 4 credit hours are obtained.

<sup>2</sup> Any physics course with a laboratory will meet this requirement excluding Astronomy and PHYS 1471. Example: PHYS 1375, combined lecture / lab (3 credit hrs) or PHYS 1301 and PHYS 1101, separate lecture and lab courses (4 credit hrs).

<sup>3</sup> Chosen from:

ITEN 3323 Cost Estimating/Project Planning	ITEN 3321 Architectural CAD
ITEN 3308 Industrial Plastics	ITEN 3311 Manufacturing Facilities
ITEN 3331 Construction Technology	ITEN 3313 Energy and Power Technology
ITEN 3352 Inspection and Gaging	ITEN 3343 Advanced Manufacturing Processes
ITEN 4303 Selected Topics	ITEN 4332 Hazardous Waste and Fire Safety
ITEN 4353 Construction Management	ITEN 4362 Data Analysis and Decision Making
ITEN 3399 Industrial Internship	

<sup>4</sup> Any university MATH course except MATH 1350 and MATH 1351

<sup>5</sup> Capstone Elective chosen from ITEN 4336 only

## GENERAL EDUCATION REQUIREMENTS FOR GRADUATION WITH A BACCALAUREATE DEGREE

The university has established General Education requirements for all baccalaureate degrees. A general education results in the acquisition of a common body of essential knowledge and skills that together facilitate the development of students as individuals and as members of communities. Students are strongly advised to consult their individual degree plans and academic advisers for any specific requirements for their majors within the General Education curriculum. Students are also advised to consult the online catalog for any additions to the course offerings. Some courses are listed in two areas; a student may count such a course in either area, but not both. Note: this listing has been modified slightly to reflect ITEN degree program requirements.

**Communication**, divided into two areas:

A. English (Rhetoric/Composition) Required: 6 semester credit hours

ENGL 1301 and ENGL 1302

B. Oral Communication

**(^Oral Communication): listed as Communication Elective in degree plan**

Required: 3 semester credit hours of oral communication

Select one course from:

COMS 1311, COMS 1315, COMS 2335, COMS 2374 or ENGL 2374; or BCOM 2304

Preferred by COE and ITEN: COMS 2374, ENGL 2374, or BCOM 2304

**Mathematics** (Logic, college-level algebra equivalent or above) (^Mathematics):

Required: Degree program requires 6 semester credit hours)

Select two choices from:

MATH 1314, MATH 1316, MATH 1324, MATH 1326

or any other math course for which one of these courses is a prerequisite

**Natural Sciences**: Required: 6 to 8 semester credit hours with laboratory experience

Select two choices from:

\* Courses with separate laboratories (both lecture and laboratory required for each choice):

CHEM 1311/1111, CHEM 1312/1112;

or PHYS 1301/1101, PHYS 1302/1102, PHYS 1303/1103, PHYS 1304/1104, PHYS 1305/1105,

PHYS 1307/1107, PHYS 2325/2125, PHYS 2326/2126.

\*\* Courses with embedded laboratories:

CHEM 1376, CHEM 1405, CHEM 1407; or PHYS 1375, PHYS 1471.

**Humanities and Visual and Performing Arts**, divided into two areas:

A. Visual/Performing Arts

**(^Visual/Performing Arts): listed as Fine Arts Elective in Degree Plan**

Required: 3 semester credit hours

Select one course from:

ARTS 1303, ARTS 1304, ARTS 1311, ARTS 1312, ARTS 1316, ARTS 1317, ARTS 2301, ARTS 2313,

ARTS 2316, ARTS 2326, ARTS 2333, ARTS 2346; or MUSI 2301, MUSI 2306, MUSI 2308, MUSI 2310;

or THEA 1322, THEA 2301.

B. Literature, Philosophy, Modern or Classical Language/Literature and Cultural Studies

**(^Literature/Philosophy): listed as Cultural Elective in degree plan**

Required: 3 semester credit hours

Select one course from:

ANTH 2301, ANTH 2302; or ENGL 2342, ENGL 2362; or FREN 1311, FREN 1312, FREN 2311, FREN 2312;

or HIST 2321, HIST 2322; or PHIL 1301; or SPAN 1313, SPAN 1314, SPAN 2301, SPAN 2302, SPAN 2311, SPAN 2312;

or SWBS 2301, SWBS 2302.

**Social and Behavioral Sciences**, divided into three areas:

A. U.S. History (legislatively mandated); Required: 6 semester credit hours

HIST 1301 and HIST 1302.

B. Political Science (legislatively mandated); Required: 6 semester credit hours

POLS 2301 and POLS 2302.

C. Social/Behavioral Science (ITEN program requirement); Required: 6 semester credit hours

ECON 2301 and ECON 2302

**Global Learning**

**(^Global Learning): listed as Global Learning Elective in degree plan**

Required: 3 semester credit hours

Select one course from:

ANTH 2301, ANTH 2302; or BIOL 1372;

or BUAD 2374; or ENGL 2331; or EVEN 2372; or GEOG 1303;

or HIST 2321, HIST 2322; or PHIL 1301; or POLS 2340.

Preferred by COE and ITEN: EVEN 2372

## Course Descriptions: Department of Industrial Technology (ITEN)

<b>ITEN 1201. Careers in Industrial Technology</b>	2 hr credit (1 hr lec - 3 hr lab)
An overview of the career fields within the field of Industrial Technology. Course activities explore and overview technological systems in manufacturing, construction, communication, energy, transportation, and computer applications used within the field of Industrial Technology.	
<b>ITEN 1311. Technical CAD.</b>	3 hr credit (2 hr lec - 2 hr lab)
An introduction to a variety of mechanical drafting applications and techniques, including orthographic projection, pictorials, and geometric dimensioning and tolerancing in pencil, and Computer Assisted Drafting and Design.	
<b>ITEN 1315. Metalworking Processes.</b>	3 hr credit (3 hr lec - 1 hr lab)
An introduction to the processes and standards utilized in the manufacture of products from metal..	
<b>ITEN 2301. Industrial Electronics.</b>	3 hr credit (3 hr lec - 1 hr lab)
Industrial applications of electronics, including passive components, power utilization, solid state devices and electronic production techniques.	
<b>ITEN 2320. Industrial Materials.</b>	3 hr credit (3 hr lec - 1 hr lab)
An introduction to the sources, properties and testing of a variety of industrial materials.	
<b>ITEN 2330. OSHA for General Industry</b>	3 hr credit (2 hr lec - 2 hr lab)
An introduction to OSHA's general industry standards and an overview of the requirements of the more frequently referenced standards.	
<b>ITEN 2331. Construction Safety.</b>	3 hr credit (2 hr lec - 2 hr lab)
Study of plant layout and safety procedures, including information for employees, accident reporting, first aid practices, emergency procedures, fire prevention, and plant environmental conditions.	
<b>ITEN 3300. Manufacturing Technology.</b>	3 hr credit (2 hr lec - 2 hr lab)
An introduction to basic manufacturing concepts, processes, and tools with examples in machine tool operations and mass production.	
<b>ITEN 3308. Industrial Plastics.</b>	3 hr credit (2 hr lec - 2 hr lab)
A survey of the characteristics and the processes utilized in producing products from industrial plastics.	
<b>ITEN 3310. Fluid Power.</b>	3 hr credit (3 hr lec - 1 hr lab)
Systems, instruments, and concepts utilized in the area of fluid power. Course emphasizes fundamental theories of operation, system design, component selection, maintenance, and safety considerations. Includes an overview of fluid logic and electrical controls.	
<b>ITEN 3311. Manufacturing Facilities.</b>	3 hr credit (3 hr lec)
Study of principles, methods, and techniques utilized in planning, operating, and maintaining manufacturing and industrial facilities.	
<b>ITEN 3313. Energy and Power Technology.</b>	3 hr credit (3 hr lec - 1 hr lab)
An introduction to the basic principles of energy and power transmission for industrial technologists and non-engineers.	
<b>ITEN 3315. CAD/CAM.</b>	3 hr credit (3 hr lec - 1 hr lab)
Application, economics, and programming of Computer Numerical Control (CNC) machine tools.	
<b>ITEN 3321. Architectural CAD.</b>	3 hr credit (3 hr lec - 1 hr lab)
Planning, design and drafting of residential and commercial buildings.	
<b>ITEN 3323. Cost Estimating.</b>	3 hr credit (3 hr lec)
A survey of practical methods used in the development of cost estimates and project plans in manufacturing and construction.	
<b>ITEN 3324. Industrial Controls.</b>	3 hr credit (3 hr lec - 1 hr lab)
Digital electronics and the application of microprocessors to industrial control.	
<b>ITEN 3331. Construction Technology.</b>	3 hr credit (2 hr lec - 2 hr lab)
Materials and equipment utilized in residential and commercial construction. Includes regulatory and economic analysis of construction projects.	
<b>ITEN 3343. Advanced Manufacturing Processes.</b>	3 hr credit (3 hr lec)
A survey of the latest manufacturing processes that are used in order to produce products that cannot be produced with conventional manufacturing processes. Processes covered will include, non-traditional machining methods, abrasive machining, advanced casting methods, specialized welding methods, and other high-end manufacturing processes used in manufacturing industries.	
<b>ITEN 3349. Manufacturing Productivity.</b>	3 hr credit (3 hr lec)
Planning workstations, developing work methods, and establishing time standards for manufacturing operations.	
<b>ITEN 3352. Inspection and Gaging.</b>	3 hr credit (3 hr lec - 1 hr lab)
Systems, instruments, and concepts utilized in the area of inspection and gaging with emphasis on traditional instruments and overviews into in-process and post-process inspection, contact and noncontact gaging, digital gaging.	
<b>ITEN 3399 Industrial Internship.</b>	3 hr credit
Supervised on-the-job experience in an industrial/technical area. This course can be repeated for up to 6 semester credit hours.	
<b>ITEN 4303. Selected Topics.</b>	3 hr credit (3 hr lec)
Investigations into one or more topics in current technologies. May be repeated up to a total of six semester hours.	
<b>ITEN 4332. Hazardous Waste and Fire Safety.</b>	3 hr credit (3 hr lec - 1 hr lab)
Study of fire prevention and hazardous substances. Hazard mitigation and containment policies will be reviewed.	
<b>ITEN 4335. Senior Projects.</b>	3 hr credit (3 hr lec )
Individual solution of selected problems in industrial technology under the direct supervision of a faculty member.	
<b>ITEN 4336. Industrial Employment Seminar.</b>	3 hr credit (3 hr lec - 1 hr lab)
In-depth survey of current topics in industrial production through class discussion, field trips, and research. Includes job hunting skills, resume writing and interviewing.	
<b>ITEN 4352. Quality Assurance.</b>	3 hr credit (3 hr lec - 1 hr lab)
Methods used to insure quality production through the measurement and maintenance of desired product characteristics in manufacturing processes.	
<b>ITEN 4353. Construction Management.</b>	3 hr credit (2 hr lec - 2 hr lab)
Study of management techniques to solve the unique problems associated with a construction project. Emphasis on the management of manpower, materials, money, and machinery.	
<b>ITEN 4362. Data Analysis and Decision Making in Technology.</b>	3 hr credit (3 hr lec - 1 hr lab)
Concepts of data analysis, distributions and probability, regression analysis, data and their uses, and other statistical analysis techniques with technological and industrial applications.	