

**Bachelor of Science in Industrial Management and Applied Engineering Technology  
With a Certificate in Business Administration  
College of Engineering, Texas A&M University-Kingsville**

This degree program prepares students for technical and managerial positions within three industries, construction, oil field service, and manufacturing. This field of study is not defined by one position title but a multitude of position titles including ones within the area of safety and risk management. Some common position titles for our graduates are project manager; field engineer; cost estimator; production supervisor or manager; quality technicians and supervisors; and safety coordinator, supervisor, or manager. Starting salaries within this career field range from 40-60 thousand depending on the industry and position hired for.

**General Education (32 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)  
 ^Creative Arts Elective ..... (3 hr)  
 ^Communication Elective..... (3 hr)  
 ISYS 1301 Per Comp Apps ..... (3 hr)  
 UNIV 1201 Learning in a..... (2 hr)  
 Global Context.....

**Mathematics (6 hr)**

MATH 1314 or 1324 ..... (3 hr)  
 MATH 1316 or 1325..... (3 hr)  
**Science (7-8 hrs)**  
 Any CHEM with lab ..... (3-4 hr)  
 Any PHYS with lab..... (3-4 hr)  
**Business Component (12 or 18 hrs)**  
 ACCT 2301 Fund. of Acct I..... (3 hr)  
 ECON 2301 Principles of Econ I.. (3 hr)  
 Business Elective ..... (3 hr)  
 MGMT 3322 Principles of Mgmt . (3 hr)

**Industrial Management & Tech (51 or 57 hrs)**

ITEN 1311 Technical CAD .....(3 hr)  
 ITEN 1315 Intro to Manuf Processes .....(3 hr)  
 ITEN 2301 Industrial Electronics .....(3 hr)  
 ITEN 2322 Measurement & Materials .....(3 hr)  
 ITEN 2330 OSHA for General Industrial....(3 hr)  
 ITEN 3306 Manufacturing Processes .....(3 hr)  
 ITEN 3313 Energy Systems .....(3 hr)  
 ITEN 3323 Cost Estimating.....(3 hr)  
 ITEN 3331 Construction Technology.....(3 hr)  
 ITEN 3349 Lean Production.....(3 hr)  
 ITEN 4332 Haz Waste & Fire Safety .....(3 hr)  
 ITEN 4336 Industrial Employ Research.....(3 hr)  
 ITEN 4340 Leadership & Supervision .....(3 hr)  
 ITEN 4352 Quality Assurance .....(3 hr)  
 ITEN Elective (Upper Division) .....(3 hr)  
 ITEN Elective (Upper Division) .....(3 hr)  
 ITEN Elective (Upper Division).....(3 hr)  
 ITEN Elective (or Adv Bus).....(3 hr)  
 ITEN Elective (or Adv Bus) .....(3 hr)

**Free Electives (6 hr)**

Elective .....(3 hr) **Note:** Choice of six credit hours in  
 Elective .....(3 hr) Adv. Business or Adv. ITEN

**Minimum GPAs to Graduate, Total Credit Hours 120**

Overall  $\geq$  (2.00) Math/Science  $\geq$  (2.25)  
 ITEN  $\geq$  (2.50) Business  $\geq$  (2.25)

**Departmental Concentrations: Technical and Business**

***Industrial Safety***

ITEN 2330 OSHA for General Industry core  
 ITEN 4332 Hazardous Waste & Fire Safety core  
 ITEN 4340 Leadership and Supervision core  
 ITEN 3336 Industrial Hygiene 1 elective  
 ITEN 3338 Industrial Hygiene 2 elective

***Oil Field Service***

ITEN 3313 Energy Systems core  
 ITEN 3323 Cost Estimating core  
 ITEN 4332 Hazardous Waste & Fire Safety core  
 ITEN 3310 Fluid Power elective  
 ITEN 3333 Industrial Scheduling OR elective  
 MGMT 3325 Human Resource Management

***Construction Management***

ITEN 3321 Architectural CAD elective  
 ITEN 3323 Cost Estimating core  
 ITEN 3331 Construction Technology core  
 ITEN 3333 Industrial Scheduling elective  
 ITEN 4332 Hazard Materials and Fire Safety core  
 ITEN 4353 Construction Management elective

***Manufacturing Management***

ITEN 3306 Manufacturing Processes core  
 ITEN 3349 Lean Production core  
 ITEN 4330 Manufacturing Systems elective  
 ITEN 3345 Advanced Graphics and Modeling elective  
 ITEN 3310 Fluid Power elective

***Business Administration Certificate, 12 credit hrs (built-in)***

ACCT 2301 Principles of Accounting I core  
 ECON 2301 Principles of Economics I core  
 MGMT 3322 Principles of Management core  
 Approved Business Elective core

***Business Administration Minor, 18 credit hrs (optional)***

ISYS 3358 Business Info Systems required  
 MGMT 3325 HR Management elective  
 Other course elective options available elective

**Contact Info: Department Chair, Dr. Delia Valles-Rosales, [delia.rosales@tamuk.edu](mailto:delia.rosales@tamuk.edu)**

**Course Descriptions: Department of Industrial Management and Technology**

<b>ITEN 1311. Technical CAD.</b>	3 hr credit (3 hr lec - 1 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. Introduction to Manufacturing Processes.</b>	3 hr credit (3 hr lec - 1 hr lab)
An introduction to manufacturing processes of products using metal, plastic and wood. Laboratory experiences include projects related to machine tool operations, injection molding, thermoforming, CNC lathe, and milling machining	
<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 2322. Measurements and Materials.</b>	3 hr credit (3 hr lec - 1 hr lab)
An introduction to measurement and the sources, properties and testing of a variety of industrial materials.	
<b>ITEN 2330. OSHA for General Industry</b>	3 hr credit (3 hr lec)
An introduction to OSHA's general industry standards and an overview of the requirements of the more frequently referenced standards.	
<b>ITEN 3306. Manufacturing Processes.</b>	3 hr credit (3 hr lec - 1 hr lab)
A survey of traditional and nontraditional manufacturing processes used in product development and production.	
<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 Systems.</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)
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 in all areas of industrial management and technology with an emphasis on the software used within the construction industry.	
<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 (3 hr lec - 1 hr lab)
Materials and equipment utilized in residential and commercial construction. Includes regulatory and economic analysis of construction projects.	
<b>ITEN 3333. Industrial Scheduling.</b>	3 hr credit (3 hr lec)
Planning, scheduling and monitoring of construction projects including development of critical path networks (CPM & PERT), Gantt bar charts and construction cost control and reporting practices.	
<b>ITEN 3336. Industrial Hygiene 1.</b>	3 hr credit (3 hr lec)
Introduction to industrial hygiene and recognition of industrial hazards.	
<b>ITEN 3338. Industrial Hygiene 2.</b>	3 hr credit (3 hr lec)
Industrial hazard evaluation and control methods, duties of safety professionals and government regulations.	
<b>ITEN 3343. Manufacturing Systems.</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.	
<b>ITEN 3345. Advanced Graphics and Modeling.</b>	3 hr credit (3 hr lec)
Advance graphics with an emphasis in 3D design and solid modeling.	
<b>ITEN 3349. Lean Production.</b>	3 hr credit (3 hr lec)
Planning and developing benchmarks for manufacturing operations; measuring, assessing and enhancing productivity within industrial settings, including an overview of Lean Production concepts.	
<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 4320. Safety Program Administration.</b>	3 hr credit (3 hr lec)
An examination of safety administration issues that affect the workplace including safety awareness and loss control, regulation and compliance, and behavior assessment and modification.	
<b>ITEN 4332. Hazardous Waste and Fire Safety.</b>	3 hr credit (3 hr lec)
Study of fire prevention and hazardous substances. Hazard mitigation and containment policies will be reviewed.	
<b>ITEN 4330. Manufacturing Systems</b>	3 hr credit (3 hr lec)
A holistic overview of manufacturing; design and solid modeling, robotics, CAD/CAM principles, and tradition and nontraditional manufacturing concepts with an emphasis in design analysis and production enhancement.	
<b>ITEN 4336. Industrial Employment Research.</b>	3 hr credit (3 hr lec)
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 4340. Leadership and Supervision.</b>	3 hr credit (3 hr lec)
Supervision in industrial settings; ways and means to assess, motivate, and train technical employees to help meet production goals and safety guidelines. Emphasis on the supervisor's functional and essential areas of knowledge, relations with others, and personal development.	
<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 (3 hr lec)
Study of management techniques to solve the unique problems associated with a construction project. Emphasis on the management of manpower, materials, money, and machinery.	